


```

      195              200              205
Asp Met Gly Phe Thr Glu Ala Asn Gln Ala Leu Thr Asp Ile Ala Pro
  210              215              220
Leu Val Pro Glu Lys Phe Lys Ala Leu Gly His Gln Gly Trp Thr Ala
  225              230              235              240
Met Pro Val Thr Gly Ser Pro Gln Trp Tyr Thr Leu Val Thr Ser Leu
      245              250              255
Ile Leu Gly Val Gly Ile Gly Cys Leu Ala Gln Pro Gln Leu Val Val
      260              265              270
Arg Phe Met Thr Val Glu Ser Ser Lys Gln Leu Asn Arg Gly Val Phe
      275              280              285
Ile Gly Cys Phe Phe Leu Ile Ile Thr Val Gly Ala Ile Tyr His Ala
      290              295              300
Gly Ala Leu Ser Asn Leu Phe Phe Leu Lys Thr Glu Gly Val Val Ala
  305              310              315              320
Thr Glu Ala Val Lys Asp Met Asp Lys Ile Ile Pro Tyr Phe Ile Asn
      325              330              335
Lys Ala Met Pro Asp Trp Phe Ala Ala Leu Phe Met Leu Cys Ile Leu
      340              345              350
Ser Ala Ser Met Ser Thr Leu Ser Ser Gln Phe His Thr Met Gly Ala
      355              360              365
Ser Val Gly Ser Asp Ile Tyr Gly Thr Tyr Lys Pro Arg Ser Arg Gly
      370              375              380
Lys Leu Thr Asn Val Ile Arg Leu Gly Val Leu Phe Ser Ile Leu Val
  385              390              395              400
Ser Tyr Ile Ile Cys Tyr Met Leu Pro Asn Asp Ile Ile Ala Arg Gly
      405              410              415
Thr Ser Ile Phe Met Gly Ile Cys Ala Ala Ala Phe Leu Pro Ala Tyr
      420              425              430
Phe Cys Ala Leu Tyr Trp Arg Arg Ala Thr Arg Gln Gly Val Met Ala
      435              440              445
Ser Leu Trp Ile Gly Thr Ile Gly Ser Leu Phe Ala Leu Ala Phe Leu
      450              455              460
His Gln Lys Glu Ala Ala Ala Met Gly Val Cys Arg Trp Leu Phe Gly
  465              470              475              480
Lys Asp Val Leu Ile Glu Ala Tyr Pro Phe Pro Met Ile Asp Pro Ile
      485              490              495
Leu Phe Ala Leu Pro Leu Ser Val Ala Ala Val Ile Ile Val Ser Leu
      500              505              510
Leu Thr Glu Lys Gly Lys Lys
      515

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<210> 5949

<211> 500

<212> PRT

<213> B.fragilis

<400> 5949

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Thr Asn Lys Lys Leu Ile Arg Asn Tyr Lys Met Lys Lys Ile Ile Leu
1              5              10              15
Leu Ile Val Ser Val Trp Met Cys Val Ser Cys Gly Asn Leu Glu Glu
      20              25              30
Met Asn Ile Asp Pro Asp Asn Ala Thr Gln Thr His Pro Lys Leu Leu
      35              40              45
Leu Thr Gln Ile Cys Met Asn Ala Phe Lys Arg Gly Thr Asp Gly Met
      50              55              60
Tyr Ala Thr Lys Lys Val Ile Gln Ala Asp Gly Glu Ser Ala Asp Gln
  65              70              75              80
Tyr Tyr Lys Trp Thr Arg Gly Ser Phe Gly Tyr Tyr Asp Asn Leu Arg

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<210> 5950
<211> 670
<212> PRT
<213> B.fragilis
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<400> 5950

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Arg Met Lys Lys Leu Ser Ser Phe Leu Leu Leu Leu Val Val Phe
1      5      10      15
Thr Ala Gln Ala Gln Ile Gln Glu Pro Val Lys Phe Lys Thr Glu Leu
20      25      30
Lys Thr Leu Ser Gly Ala Glu Ala Glu Ile Val Phe Thr Gly Thr Ile
35      40      45
Asp Ala Gly Trp His Val Tyr Ser Thr Asp Leu Gly Asp Gly Gly Pro
50      55      60
Ile Ser Ala Thr Phe Asn Val Glu Lys Met Ser Gly Ala Glu Val Val
65      70      75      80
Gly Lys Leu Thr Pro Arg Gly Lys Glu Val Ser Asp Phe Asp Lys Leu
85      90      95
Phe Glu Met Lys Val Arg Tyr Phe Glu Lys Thr Ala Gln Phe Ile Gln
100     105     110
Lys Ile Lys Phe Thr Gly Ser Asp Tyr Ser Ile Glu Gly Tyr Leu Glu
115     120     125
Tyr Gly Ala Cys Asn Asp Glu Asn Cys Leu Pro Pro Thr Gln Val Pro
130     135     140
Phe Lys Phe Ser Gly Lys Ala Ala Ala Thr Ala Glu Val Ser Ala Lys
145     150     155     160
Glu Thr Pro Ala Thr Pro Val Lys Glu Pro Val Ala Thr Val Thr Asp
165     170     175
Ser Ile Val Glu Pro Thr Ala Thr Thr Val Thr Thr Ala Ile Gly Ser
180     185     190
Val Asp Leu Trp Lys Pro Val Ile Asn Asp Leu Lys Lys Phe Gly Glu
195     200     205
Ala Asn Ser Gln Glu Asp Met Ser Trp Ile Tyr Ile Phe Ile Thr Gly
210     215     220
Phe Leu Gly Gly Leu Leu Ala Leu Phe Thr Pro Cys Val Trp Pro Ile
225     230     235     240
Ile Pro Met Thr Val Ser Phe Phe Leu Lys Arg Ser Lys Asp Lys Lys
245     250     255
Lys Gly Ile Arg Asp Ala Trp Thr Tyr Gly Ala Ser Ile Val Val Ile
260     265     270
Tyr Val Ala Leu Gly Leu Ala Ile Thr Leu Ile Phe Gly Ala Ser Ala
275     280     285
Leu Asn Ala Leu Ser Thr Asn Ala Val Phe Asn Ile Leu Phe Cys Leu
290     295     300
Met Leu Ile Val Phe Ala Ala Ser Phe Phe Gly Ala Phe Glu Leu Thr
305     310     315     320
Leu Pro Ala Lys Trp Ser Thr Ala Val Asp Ser Lys Ala Glu Ala Thr
325     330     335
Ser Gly Leu Leu Ser Ile Phe Leu Met Ala Phe Thr Leu Ser Leu Val
340     345     350
Ser Phe Ser Cys Thr Gly Pro Ile Ile Gly Phe Leu Leu Val Gln Val
355     360     365
Ser Thr Thr Gly Ser Val Val Ala Pro Ala Ile Gly Met Leu Gly Phe
370     375     380
Ala Ile Ala Leu Ala Leu Pro Phe Thr Leu Phe Ala Leu Phe Pro Ser
385     390     395     400
Trp Leu Lys Ser Met Pro Lys Ser Gly Gly Trp Met Asn Val Ile Lys
405     410     415
Val Thr Leu Gly Phe Leu Glu Leu Ala Phe Ala Leu Lys Phe Leu Ser
420     425     430
Val Ala Asp Leu Ala Tyr Gly Trp Arg Ile Leu Asp Arg Glu Thr Phe
435     440     445
Leu Ala Leu Trp Ile Val Ile Phe Ala Leu Leu Gly Phe Tyr Leu Leu
450     455     460

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Gly Lys Ile Lys Phe Pro His Asp Asp Asp Thr Lys Val Ser Val
 465 470 475 480
 Ser Arg Phe Phe Met Ala Leu Val Ser Leu Ala Phe Ala Val Tyr Met
 485 490 495
 Val Pro Gly Leu Trp Gly Ala Pro Leu Lys Ala Val Ser Ala Phe Ala
 500 505 510
 Pro Pro Met Lys Thr Gln Asp Phe Asn Leu Tyr Thr Asn Glu Val His
 515 520 525
 Ala Lys Phe Asp Asp Tyr Asp Leu Gly Met Glu Tyr Ala Arg Gln His
 530 535 540
 Asn Lys Pro Val Met Leu Asp Phe Thr Gly Tyr Gly Cys Val Asn Cys
 545 550 555 560
 Arg Lys Met Glu Leu Ala Val Trp Thr Asp Pro Lys Val Ser Ser Ile
 565 570 575
 Ile Asn Asn Asp Tyr Val Leu Ile Thr Leu Tyr Val Asp Asn Lys Thr
 580 585 590
 Pro Leu Thr Glu Pro Val Lys Ile Met Glu Asn Gly Thr Glu Arg Thr
 595 600 605
 Leu Arg Thr Val Gly Asp Lys Trp Ser Tyr Leu Gln Arg Val Lys Phe
 610 615 620
 Gly Ala Asn Ala Gln Pro Phe Tyr Val Leu Ile Asp Asn Glu Gly Asn
 625 630 635 640
 Pro Leu Asn Lys Ser Tyr Ala Tyr Asp Glu Asp Ile Ser Lys Tyr Ile
 645 650 655
 Asn Phe Leu Gln Thr Gly Leu Glu Asn Tyr Arg Lys Glu Lys
 660 665 670

<210> 5951

<211> 343

<212> PRT

<213> B.fragilis

<400> 5951

Tyr Met Trp Lys Lys Leu Ser Leu Tyr Val Cys Leu Ile Thr Ile Leu
 1 5 10 15
 Cys Ser Cys Gln Lys Gln Arg Ser Ala Tyr Ala Pro Pro Thr Phe Pro
 20 25 30
 Glu Val Lys Lys Ile His Ala His Arg Leu Ser Asp Glu Leu Leu Ile
 35 40 45
 Ser Tyr Leu Leu Asp Met Ala Val Ser Glu Asp Tyr Ile Phe Ile Leu
 50 55 60
 Ala Leu Ala Asp Asn Ala Trp Leu Gln Val Tyr Asp Lys Thr Thr Gly
 65 70 75 80
 Gln Leu Leu Gly Ser Phe Val Thr Arg Gly Gln Gly Pro Gly Glu Ala
 85 90 95
 Thr Thr Ala Asn Met Cys Tyr Tyr Asn Ala Arg Glu Lys Lys Ile Ser
 100 105 110
 Val Tyr Asp Glu Ser Ser Met Lys Leu Leu Thr Tyr Gln Phe Asp Lys
 115 120 125
 Asp Ala Asp Asn Trp Gly Ala Leu Ile Glu Glu Trp Ser Phe Tyr Asp
 130 135 140
 Leu Gly Gly Thr Leu Arg Arg Val Trp Glu Leu Arg Asn Gly Arg Phe
 145 150 155 160
 Leu Val Asp Gly Gln Leu Gly Thr Lys Ser Asp Gln Gln Lys Arg Phe
 165 170 175
 Gln Met Leu Ala Asp Ala Lys Val Val Ala Asp Tyr Asn Asp Phe Pro
 180 185 190
 Ile Asp Thr Pro Lys Glu Arg Ser Val Trp Ser Ser Pro Ala Ile Ala
 195 200 205

Ile Ser Pro Asp Cys Lys Lys Met Ala Val Gly Thr Leu Tyr Gly Gly
 210 215 220
 Ile Leu Glu Leu Phe Asp Leu Ser Gln Asn Ile Glu Leu Arg Ala Ile
 225 230 235 240
 Arg Lys Phe Tyr Pro Pro Val Val Gln Tyr Leu Ser Gly Thr Ile Gln
 245 250 255
 Asn Thr Glu Glu Thr Val Trp Gly Phe Ser Ala Leu Cys Ala Thr Asp
 260 265 270
 Glu Arg Ile Tyr Ser Val Phe Ile Gly Asp Lys Asn Pro Asn Leu Phe
 275 280 285
 Asn Asn Leu Ser Val Phe Asp Trp Asp Gly Arg Glu Leu Ile Lys Tyr
 290 295 300
 Asn Thr Asp Cys Leu Val Leu Arg Ile Cys Ala Ser Thr Gln Glu Pro
 305 310 315 320
 Asn Lys Leu Tyr Gly Ile Ala Phe Ser Glu Thr His Glu Phe Tyr Leu
 325 330 335
 Val Ser Phe Ser Leu Gly Ser
 340

<210> 5952

<211> 258

<212> PRT

<213> B.fragilis

<400> 5952

Asn Asp Tyr Leu Cys Glu Arg Phe Glu Asn Arg Asp Tyr Val Phe Leu
 1 5 10 15
 Ile Ile Ser Leu Lys Lys Glu Leu Ile Met Thr Tyr Ser His Glu Val
 20 25 30
 Glu His Met Cys Val Val Lys Lys Gly Pro Asn His Gly Pro Ala Pro
 35 40 45
 Ile Pro Glu Glu Gly Lys Trp Val Lys Ser Lys Glu Ile Val Asp Ile
 50 55 60
 Ser Gly Leu Thr His Gly Val Gly Trp Cys Ala Pro Gln Gln Gly Ala
 65 70 75 80
 Cys Lys Leu Thr Leu Asn Val Lys Glu Gly Ile Ile Gln Glu Ala Leu
 85 90 95
 Val Glu Thr Ile Gly Cys Ser Gly Met Thr His Ser Ala Ala Met Ala
 100 105 110
 Ala Glu Ile Leu Pro Gly Lys Thr Ile Leu Glu Ala Leu Asn Thr Asp
 115 120 125
 Leu Val Cys Asp Ala Ile Asn Thr Ala Met Arg Glu Leu Phe Leu Gln
 130 135 140
 Ile Val Tyr Gly Arg Thr Gln Ser Ala Phe Ser Glu Gly Gly Leu Ile
 145 150 155 160
 Ile Gly Ala Gly Leu Glu Asp Leu Gly Lys Gly Leu Arg Ser Gln Val
 165 170 175
 Gly Thr Leu Tyr Gly Thr Leu Ala Lys Gly Pro Arg Tyr Leu Glu Met
 180 185 190
 Ala Glu Gly Tyr Ile Lys Thr Ile Ala Leu Asp Lys Asn Asp Glu Ile
 195 200 205
 Cys Gly Tyr Glu Phe Val His Met Gly Lys Phe Met Asp Glu Ile Lys
 210 215 220
 Lys Gly Thr Asp Ala Asn Glu Ala Leu Lys Lys Val Thr Gly Thr Tyr
 225 230 235 240
 Gly Arg Phe Thr Ala Glu Gln Gly Ala Val Lys His Ile Asp Pro Arg
 245 250 255
 His Glu

<210> 5953
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 5953
 Leu Phe Ser Asp Met Lys Leu Asn Lys Thr Asp Tyr Met Leu Glu Arg
 1 5 10 15
 Thr Ser Asp Gly Gly Tyr Tyr Ala Trp Leu Thr Val Asn Met Gln Cys
 20 25 30
 Asn Ala Tyr Gly Asp Ser Pro Glu Glu Ala Val Lys Asn Leu Glu Gln
 35 40 45
 Thr Met Glu Asp Leu Val Glu Glu Met Tyr Leu Val Glu Asp Phe Ile
 50 55 60

<210> 5954
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 5954
 Ile Asn Val Glu Ser Met Thr Ile Met Lys Leu Arg Leu Gly Val Arg
 1 5 10 15
 Gly Met Met Trp Leu Thr Leu Val Ile Met Met Trp Gly Ile Ile Ser
 20 25 30
 Cys Arg Thr Gln Glu Glu Lys Cys Leu Glu Glu Val Leu Ser Leu Pro
 35 40 45
 Leu Ala Asn Lys Glu Glu Leu Gln Lys Val Leu Asp His Tyr Lys Asp
 50 55 60
 Asp Ser Leu Lys Tyr Gln Ala Val Cys Phe Leu Ile Arg Asn Met Pro
 65 70 75 80
 Phe His Ala Gly Tyr Glu Gly Asn Ala Leu Lys Tyr Tyr Tyr Gln Tyr
 85 90 95
 Phe Asp Ile Tyr Ala Gln Gly Lys Leu Gly Pro His Glu Val Ile Asp
 100 105 110
 Ser Leu Lys Glu Asn Ser Phe Ser Val Ser Gln Leu Lys Arg Ile Glu
 115 120 125
 Asp Ile Ala Asn Ile Asp Ser Ser Leu Leu Val Gln Asn Val Asp Trp
 130 135 140
 Ala Phe Lys Val Trp Arg Glu Gln Pro Trp Gly Lys Asn Val Ser Phe
 145 150 155 160
 Asp Asn Phe Cys Glu Phe Val Leu Pro Tyr Arg Leu Gly Asp Glu Pro
 165 170 175
 Leu Gly Phe Trp Arg Glu Asp Ile Tyr Lys Arg Tyr Asn Pro Ile Leu
 180 185 190
 Asp

<210> 5955
 <211> 341
 <212> PRT
 <213> B.fragilis

<400> 5955
 Gly Gly Lys Glu Ile Met Ile Arg Glu Val Lys Phe Glu Ser Gln Asp
 1 5 10 15
 Arg Arg Ile Lys Gly Ile Ile Glu Ala Leu Asn Ala Asn Gly Ile Lys
 20 25 30

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Asp Ile Glu Glu Ala Asn Ala Ile Cys Glu Ala Ala Gly Val Asp Pro
   35           40           45
Tyr Lys Thr Cys Glu Glu Thr Gln Pro Ile Cys Phe Glu Asn Ala Lys
   50           55           60
Trp Ala Tyr Val Val Gly Ala Ala Ile Ala Ile Lys Lys Gly Cys Lys
   65           70           75           80
Asn Ala Ala Asp Ala Ala Glu Ala Ile Gly Ile Gly Leu Gln Ala Phe
           85           90           95
Cys Ile Pro Gly Ser Val Ala Asp Asp Arg Lys Val Gly Ile Gly His
           100           105           110
Gly Asn Leu Ala Ala Met Leu Leu Arg Glu Glu Thr Lys Cys Phe Ala
           115           120           125
Phe Leu Ala Gly His Glu Ser Phe Ala Ala Ala Glu Gly Ala Ile Lys
           130           135           140
Ile Ala Ala Lys Ala Asp Lys Val Arg Lys Glu Pro Leu Arg Cys Ile
           145           150           155           160
Leu Asn Gly Leu Gly Lys Asp Ala Ala Gln Ile Ile Ser Arg Ile Asn
           165           170           175
Gly Phe Thr Tyr Val Gln Thr Gln Phe Asp Tyr Phe Thr Gly Glu Leu
           180           185           190
Lys Val Val Arg Glu Ile Ala Tyr Ser Asp Gly Pro Arg Ala Lys Val
           195           200           205
Lys Cys Tyr Gly Ala Asp Asp Val Arg Glu Gly Val Ala Ile Met Trp
           210           215           220
Lys Glu Gly Val Asp Val Ser Ile Thr Gly Asn Ser Thr Asn Pro Thr
           225           230           235           240
Arg Phe Gln His Pro Val Ala Gly Thr Tyr Lys Lys Glu Arg Val Leu
           245           250           255
Ala Gly Lys Pro Tyr Phe Ser Val Ala Ser Gly Gly Gly Thr Gly Arg
           260           265           270
Thr Leu His Pro Asp Asn Met Ala Ala Gly Pro Ala Ser Tyr Gly Met
           275           280           285
Thr Asp Thr Met Gly Arg Met His Ser Asp Ala Gln Phe Ala Gly Ser
           290           295           300
Ser Ser Val Pro Ala His Val Glu Met Met Gly Phe Leu Gly Ile Gly
           305           310           315           320
Asn Asn Pro Met Val Gly Cys Thr Val Ala Cys Ala Val Asp Val Ala
           325           330           335
Gln Ala Leu Ala Lys
           340

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<210> 5956

<211> 116

<212> PRT

<213> B.fragilis

<400> 5956

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Lys Met Lys Glu Tyr Ile Asp Val Leu Lys Lys Trp Lys Asp Phe Asp
1           5           10           15
Gly Arg Ala Arg Arg Arg Glu Tyr Trp Met Phe Val Leu Phe Met Ala
           20           25           30
Ile Phe Ala Ile Val Ala Ser Ile Ile Asp Ala Ile Leu Gly Thr Ile
           35           40           45
Cys Val Phe Val Gly Ile Tyr Trp Leu Ala Met Leu Leu Pro Met Ile
           50           55           60
Ala Val Ser Ile Arg Arg Met His Asp Ile Gly Lys Ser Gly Trp Trp
           65           70           75           80
Leu Phe Ile Thr Phe Val Pro Val Ile Gly Ser Leu Trp Tyr Leu Phe
           85           90           95

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Leu Thr Ile Gln Asp Gly Gln Pro Gly Ser Asn Gln Tyr Gly Glu Asn
 100 105 110
 Pro Lys Gly Ile
 115

<210> 5957

<211> 351

<212> PRT

<213> B.fragilis

<400> 5957

Ile Gly Gly Asp Lys Lys Met Lys Thr Leu Gln Glu Leu Thr Arg Pro
 1 5 10 15
 Asn Ile Trp Arg Leu Lys Pro Tyr Ser Ser Ala Arg Asp Glu Tyr Ser
 20 25 30
 Gly Ala Ala Ala Ser Val Phe Leu Asp Ala Asn Glu Asn Pro Tyr Asn
 35 40 45
 Leu Pro His Asn Arg Tyr Pro Asp Pro Met Gln Arg Asp Leu Lys Leu
 50 55 60
 Glu Leu Ser Lys Ile Lys Lys Val Ala Pro Ala His Ile Phe Leu Gly
 65 70 75 80
 Asn Gly Ser Asp Glu Ala Ile Asp Leu Val Phe Arg Ala Phe Cys Glu
 85 90 95
 Pro Gly Arg Asp Asn Val Val Ala Ile Asp Pro Thr Tyr Gly Met Tyr
 100 105 110
 Gln Val Cys Ala Asp Val Asn Asp Val Glu Tyr Arg Lys Val Leu Leu
 115 120 125
 His Asp Asp Phe Gln Phe Ser Ala Asp Glu Leu Leu Ala Val Ala Asp
 130 135 140
 Glu Arg Thr Lys Met Ile Phe Leu Cys Ser Pro Asn Asn Pro Thr Gly
 145 150 155 160
 Asn Asp Leu Leu Arg Ser Glu Ile Ile Lys Val Ile Asn Asp Phe Glu
 165 170 175
 Gly Leu Val Ile Leu Asp Glu Ala Tyr Asn Asp Phe Ser Asp Glu Pro
 180 185 190
 Ser Phe Leu Ser Glu Leu Asp Lys Tyr Pro Asn Leu Ile Ile Leu Gln
 195 200 205
 Thr Phe Ser Lys Ala Phe Gly Cys Ala Ala Ile Arg Leu Gly Met Ala
 210 215 220
 Phe Ala Ser Glu Gly Ile Ile Gly Val Leu Asn Lys Ile Lys Tyr Pro
 225 230 235 240
 Tyr Asn Val Asn Gln Leu Thr Gln Gln Gln Ala Ile Glu Met Leu His
 245 250 255
 Lys Tyr Tyr Glu Ile Glu Arg Trp Val Lys Thr Leu Lys Glu Glu Arg
 260 265 270
 Gly Tyr Leu Glu Glu Ala Phe Val Glu Leu Pro Trp Val Leu Gln Val
 275 280 285
 Phe Pro Ser Asn Ala Asn Phe Phe Leu Ala Arg Val Thr Asp Ala Val
 290 295 300
 Lys Ile Tyr Asn Tyr Leu Val Gly Glu Gly Ile Ile Val Arg Asn Arg
 305 310 315 320
 Asn Ser Ile Ser Leu Cys Gly Asn Cys Leu Arg Val Thr Val Gly Thr
 325 330 335
 Arg Ala Glu Asn Ala Lys Leu Ile Gly Ala Leu Lys Lys Tyr Gln
 340 345 350

<210> 5958

<211> 197

<212> PRT

<213> B.fragilis

<400> 5958

Asn Ile Lys Leu Arg Asn Asn Leu Asn Tyr Lys Ala Leu Phe Gln Ile
 1 5 10 15
 Ala Met Ser Leu Ile Ser Ser Pro Ala Lys Ala Trp Glu Glu Ile Arg
 20 25 30
 Leu Glu Asp Arg Arg Ala Val Leu Thr Val Phe Val Tyr Pro Met Ile
 35 40 45
 Gly Leu Cys Gly Leu Ser Val Phe Ile Gly Ala Leu Trp Thr Asn Gly
 50 55 60
 Trp Gly Gly Pro Gln Ser Phe Gln Leu Ala Met Thr Gln Cys Cys Ala
 65 70 75 80
 Val Ala Val Ala Leu Phe Gly Gly Tyr Phe Leu Ala Ala Tyr Ala Ile
 85 90 95
 Asn Gln Met Gly Ile Lys Met Phe Gly Met Thr Asn Asp Ile Pro Leu
 100 105 110
 Ala Gln Gln Phe Ala Gly Tyr Ala Leu Val Val Thr Phe Leu Leu His
 115 120 125
 Ile Val Thr Gly Leu Leu Pro Asp Phe Ser Ile Ile Gly Trp Leu Leu
 130 135 140
 Gln Phe Tyr Ile Val Tyr Val Val Trp Glu Gly Ala Arg Val Val Met
 145 150 155 160
 Leu Val Glu Glu Lys Asn Arg Leu Arg Tyr Thr Ile Phe Ser Ser Ile
 165 170 175
 Leu Leu Ile Leu Cys Pro Ala Val Ile Gln Val Val Phe Asn Lys Leu
 180 185 190
 Thr Ala Ile Leu Asn
 195

<210> 5959

<211> 724

<212> PRT

<213> B.fragilis

<400> 5959

Ser Asn Leu Cys Ile Phe Val Lys Ile Glu Leu Ile His Tyr Ile Ile
 1 5 10 15
 Lys Ser His Lys Asn Met Lys Lys Met Leu Met Ala Ala Gly Met Ala
 20 25 30
 Ala Val Met Thr Ala Cys Gly Thr Ala Gly Gln Lys Ala Ala Thr Asp
 35 40 45
 Ala Gly Asn Pro Phe Leu Ala Glu Tyr Ser Thr Pro Phe Gly Val Pro
 50 55 60
 Pro Phe Asp Leu Ile Lys Val Glu His Tyr Lys Glu Ala Phe Leu Lys
 65 70 75 80
 Gly Met Glu Glu Gln Lys Lys Glu Ile Asp Ala Ile Val Asn Gln Arg
 85 90 95
 Ser Val Pro Asp Phe Asp Asn Thr Ile Ala Ala Phe Asp Gln Ser Gly
 100 105 110
 Glu Leu Leu Asn Lys Val Ser Thr Val Phe Ser Gly Leu Asn Ser Cys
 115 120 125
 Asn Thr Asn Asp Glu Met Gln Ala Phe Asn Lys Glu Ile Thr Pro Leu
 130 135 140
 Leu Ser Ala His Arg Asp Ile Ser Leu Asn Pro Ala Leu Phe Ala
 145 150 155 160
 Arg Val Lys Glu Val Tyr Glu Arg Arg Glu Lys Leu Gly Leu Asp Lys
 165 170 175
 Glu Gln Asn Lys Leu Leu Glu Glu Thr Tyr Lys Lys Phe Val Arg Gly

Tyr Ser Tyr Ile Trp Ala Glu Val Leu Asp Ser Asp Ala Phe Glu Ala
 660 665 670
 Tyr Lys Glu Thr Gly Asp Leu Phe Asn Gln Glu Val Ala Ser Arg Phe
 675 680 685
 Arg Arg Tyr Ile Leu Thr Pro Gly Gly Ile Asp Asp Ala Met Asp Met
 690 695 700
 Tyr Lys Asn Phe Arg Gly Lys Glu Pro Gly Ile Glu Pro Leu Leu Arg
 705 710 715 720
 Asn Arg Gly Leu

<210> 5960
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 5960
 Ile Ile Gln Cys Val Leu Pro Leu Arg Cys Tyr Phe Asn Tyr Leu Phe
 1 5 10 15
 Leu Tyr Leu Ser Ala Lys Ala Val Phe Tyr Ser Cys Lys Ile Thr Leu
 20 25 30
 Phe Val Ser Asn Ile His Tyr Lys Arg Met Leu Ile Ile Gly Ile Ala
 35 40 45
 Gly Gly Thr Gly Ser Gly Lys Thr Thr Val Val Arg Lys Ile Ile Glu
 50 55 60
 Ser Leu Pro Ala Gly Glu Val Val Leu Leu Pro Gln Asp Ser Tyr Tyr
 65 70 75 80
 Lys Asp Ser Ser His Val Pro Val Glu Glu Arg Gln Asn Ile Asn Phe
 85 90 95
 Asp His Pro Asp Ala Phe Glu Trp Ser Leu Leu Ser Lys His Val Ala
 100 105 110
 Leu Leu Lys Glu Gly Lys Cys Ile Glu Gln Pro Thr Tyr Ser Tyr Leu
 115 120 125
 Thr Cys Thr Arg Gln Pro Glu Thr Ile His Ile Glu Pro Arg Glu Val
 130 135 140
 Val Ile Ile Glu Gly Ile Leu Ala Leu Cys Asp Lys Lys Leu Arg Asn
 145 150 155 160
 Met Met Asp Leu Lys Ile Phe Val Asp Ala Asp Pro Asp Glu Arg Leu
 165 170 175
 Ile Arg Val Ile Gln Arg Asp Val Val Glu Arg Gly Arg Thr Ala Glu
 180 185 190
 Ala Val Met Glu Arg Tyr Thr Arg Val Leu Lys Pro Met His Leu Gln
 195 200 205
 Phe Ile Glu Pro Cys Lys Arg Tyr Ala Asp Leu Ile Val Pro Glu Gly
 210 215 220
 Gly Ser Asn Gln Val Ala Ile Asn Ile Leu Thr Met Tyr Ile Lys Lys
 225 230 235 240
 His Ile Gly Arg Pro
 245

<210> 5961
 <211> 464
 <212> PRT
 <213> B.fragilis

<400> 5961
 Ala Met Lys Arg His Leu Ile Ile Tyr Ser Leu Leu Phe Leu Leu Phe
 1 5 10 15
 Cys Val Leu Ser Cys Arg Asn Lys Gln Ala Val Ala Ile Glu Glu Ser

<213> B.fragilis

<400> 5962

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Ser Asn Ile Arg Leu Val Ser Arg Phe Val Ala Ser Lys Leu Gln Asp
1      5      10      15
Ser Val Gly Leu Leu Gln Lys Val Leu Met Asp Phe Ala Cys Leu Trp
      20      25      30
Asn Asn Pro Ile Phe Pro Phe Cys Phe Pro Ala Gly Pro His Leu Gly
      35      40      45
Pro Ser Val Val Ser Trp Arg Ala Gly Ser Cys Arg Glu Phe Ala Asp
      50      55      60
Leu Val Val Tyr Val Met Arg Ala Leu Gly Ile Pro Cys Gly Thr Asp
65      70      75      80
Tyr Met Pro Met Arg Gly Asp Asn Asn Val Pro His Phe Trp Asn Phe
      85      90      95
Thr Leu Asp Lys Asp Gly Lys Thr Tyr Ile Thr Glu Phe Pro Asp Pro
      100     105     110
Asn Trp Lys Arg Ala Val Ser Met Tyr Asn Pro Lys Ala Lys Val Tyr
      115     120     125
Arg Asn Thr Tyr Gly Leu Asn Trp Lys Asp Val Lys Arg Gln Gln Gly
      130     135     140
Lys Met Met His Pro Ala Phe Arg Lys Pro Leu Tyr Gln Asp Val Thr
145     150     155     160
Ala Val Tyr Ala Asp Ser Leu Asn Arg Asp Leu Val Val Ser Ser Asp
      165     170     175
Ile Leu Cys Lys Glu Val His Lys Gly Asp Ile Val Tyr Phe Cys Leu
      180     185     190
Ser Thr Arg Met Asp Trp Val Pro Ile Ala Trp Thr Val Phe Glu Glu
      195     200     205
Asp Ser Leu Arg Phe Gln Asp Thr Glu Gly Ser Val Ile Gly Cys Leu
      210     215     220
Ala Thr Trp Asn Gly Lys Arg Leu Val Met Gln Ser Glu Pro Phe Thr
225     230     235     240
Tyr Asp Lys Met Ser Gly Thr Ile Ala Leu Leu Thr Pro Gln Ser Glu
      245     250     255
Lys Glu Asp Ile Thr Leu Tyr Phe Lys Phe Pro Leu Phe Cys Asp Leu
      260     265     270
Gly Ile Leu Arg Met Pro Gly Gly Val Phe Glu Gly Ser Asn Asp Ser
      275     280     285
Gln Phe Arg Ser Ala Asp Thr Leu Tyr Tyr Val Lys Gln Trp Pro Phe
      290     295     300
Arg Leu Asn Asn Thr Ile Phe Pro Glu Lys Glu Lys Ser Tyr Arg Tyr
305     310     315     320
Val Arg Tyr Lys Gly Pro Lys Gly Ser Tyr Cys Asn Ile Ala Glu Met
      325     330     335
Ala Phe Phe Glu Asp Thr Ser Asp Thr Leu Ala Leu Lys Gly Arg Ile
      340     345     350
Ile Gly Thr Pro Gly Cys Phe Gln Lys Asp Gly Ser His Asp Tyr Tyr
      355     360     365
Lys Val Tyr Asp Gly Asn Pro Tyr Thr Tyr Met Asp Tyr Lys Thr Pro
      370     375     380
Asp Glu Gly Trp Val Gly Leu Asp Phe Gly Ile Pro Arg Arg Ile Lys
385     390     395     400
Lys Phe Thr Tyr Ile Pro Arg Asn Ser Asp Asn Phe Ile His Lys Gly
      405     410     415
Asp Val Tyr Glu Leu Phe Tyr Trp His Asp Lys Lys Trp Asn Ser Leu
      420     425     430
Gly Arg Gln Val Ala Lys Ala Asp Ser Leu Asn Tyr Val Ile Pro Lys
      435     440     445

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Gly Val Ala Leu Phe Leu Lys Asn His Thr Glu Gly Lys Asp Glu Arg
 450 455 460
 Ile Phe Lys Lys Thr Asp Gly Arg Gln Gln Phe Trp
 465 470 475

<210> 5963
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 5963
 Glu Arg Lys Ser Met Lys Thr Val Val Asp Lys Ala Ser Ser Arg Gly
 1 5 10 15
 Tyr Phe Asn His Gly Trp Leu Lys Thr His His Thr Phe Ser Phe Ala
 20 25 30
 Asn Tyr Tyr Asn Pro Ser Arg Met His Phe Gly Val Leu Arg Val Leu
 35 40 45
 Asn Asp Asp Ser Val Asp Pro Glu Met Gly Phe Asp Thr His Pro His
 50 55 60
 Gln Asn Met Glu Val Ile Ser Ile Pro Leu Lys Gly Tyr Leu Arg His
 65 70 75 80
 Gly Asp Ser Val Lys Asn Thr Arg Thr Ile Thr Pro Gly Asp Ile Gln
 85 90 95
 Val Met Ser Thr Gly Lys Gly Ile Phe His Ser Glu Tyr Asn Gly Ser
 100 105 110
 Asp Lys Glu Gln Leu Glu Phe Leu Gln Ile Trp Val Phe Pro Arg Ile
 115 120 125
 Glu Asn Thr Glu Pro Glu Tyr Asn Asn Tyr Asp Ile Arg Pro Leu Leu
 130 135 140
 Lys Arg Asn Glu Leu Ala Leu Ile Ile Ser Pro Asp Gly Lys Val Pro
 145 150 155 160
 Ala Ser Ile Lys Gln Asp Ala Trp Phe Ser Met Gly Thr Phe Asp Ala
 165 170 175
 Gly Lys Ser Phe Glu Tyr Lys Leu His Gln Glu Gly Asn Gly Val Tyr
 180 185 190
 Leu Phe Ile Ile Glu Gly Asp Val Glu Val Ala Gly Asn Arg Leu Ser
 195 200 205
 Arg Arg Asp Gly Ile Gly Leu Trp Asp Thr Lys Ser Phe Lys Val Glu
 210 215 220
 Ile Thr Gln Glu Ala Thr Leu Leu Leu Met Glu Val Pro Met Arg
 225 230 235

<210> 5964
 <211> 493
 <212> PRT
 <213> B.fragilis

<400> 5964
 Val Phe Arg Arg Lys Leu Gln Ser Thr Asp Lys Ser Gly Arg Lys Ala
 1 5 10 15
 Gly His Pro Leu His Val Ser Leu Arg Lys Lys Leu Thr Ser Ser Pro
 20 25 30
 Ile Arg Ser Ser Thr Ser Thr Glu Ser Cys Ile Phe Ala Thr Cys Lys
 35 40 45
 Leu Lys Pro Phe Phe Met Tyr Thr Asn Lys Gln Ile Trp Ser Val Ser
 50 55 60
 Tyr Pro Ile Leu Leu Ser Leu Leu Ala Gln Asn Val Ile Asn Val Thr
 65 70 75 80
 Asp Thr Ala Phe Leu Gly Arg Val Ser Glu Ile Ala Leu Gly Ala Ser

1		5		10		15									
Leu	Leu	Trp	Val	Leu	Leu	Val	Gly	Ser	Leu	Cys	Cys	Ser	Cys	Thr	Gly
		20						25					30		
Asn	Lys	Arg	Leu	Glu	Tyr	Ala	Leu	Glu	Phe	Ala	Gly	Glu	Asn	Arg	Gly
		35						40					45		
Glu	Leu	Glu	Lys	Val	Leu	Glu	His	Tyr	Asn	Asp	Ser	Gly	Leu	Lys	Gln
		50					55					60			
Asp	Ala	Ala	Arg	Phe	Leu	Ile	Glu	Asn	Met	Pro	Arg	Tyr	Phe	Ser	Tyr
					70						75				80
Glu	Gly	Trp	Gln	Leu	Asp	Thr	Leu	Lys	Ala	Ile	His	Ala	Ala	Thr	Glu
					85					90				95	
His	Thr	Asp	Gly	Trp	Val	Asn	Lys	Lys	Asp	Arg	Lys	Lys	Trp	Glu	His
			100						105				110		
Phe	Ser	Phe	Arg	Thr	Leu	Lys	Lys	Val	Tyr	Asp	Ala	Lys	Val	Ile	Lys
			115					120					125		
Ala	Glu	Phe	Leu	Ile	His	His	Ile	Asp	Gln	Ala	Phe	Glu	Val	Phe	Glu
			130				135					140			
Lys	Arg	Ser	Trp	Asn	Lys	Tyr	Leu	Pro	Phe	Asp	Asp	Phe	Cys	Glu	Leu
					150						155				160
Ile	Leu	Pro	Tyr	Arg	Ile	Gly	Asp	Glu	Pro	Leu	Glu	Glu	Trp	Arg	Gly
				165						170				175	
Trp	Tyr	Arg	Glu	Arg	Tyr	Glu	Ser	Ile	Leu	Asp	Ser	Leu	Tyr	Gln	Gly
			180					185					190		
Thr	Asp	Val	Glu	Ala	Thr	Asp	Arg	Leu	Gly	Ala	Tyr	Leu	Arg	Gln	
		195					200					205			
Glu	Lys	Asp	Phe	Arg	Tyr	Ser	Val	Glu	Leu	Asp	Leu	Pro	His	Leu	Gly
			210				215				220				
Ala	Gly	Phe	Leu	Leu	Ala	Asn	Arg	Val	Gly	Ser	Cys	Glu	Ala	Ser	Cys
					230						235				240
Asp	Phe	Thr	Val	Tyr	Val	Leu	Arg	Ala	Leu	Gly	Ile	Pro	Ala	Ala	Thr
				245						250				255	
Asp	Ile	Tyr	His	Tyr	Gly	Pro	Gly	Lys	Gly	Ala	Gly	His	Val	Trp	Asn
			260					265					270		
Val	Leu	Arg	Asp	Thr	Thr	Gly	Gly	Tyr	Val	Pro	Phe	Trp	Phe	Ile	Gln
		275					280					285			
Thr	Lys	Val	Glu	Arg	Gly	Gly	Ser	Asp	Lys	Arg	Glu	Lys	Gly	Lys	Val
		290				295					300				
Tyr	Arg	Arg	Cys	Phe	Gly	Ala	Gln	Gln	Glu	Lys	Val	Ser	Gly	Ile	Arg
				310						315					320
Arg	Asp	Arg	Ser	Val	Pro	Phe	Pro	Leu	Lys	Asp	Pro	Tyr	Leu	Lys	Asp
				325					330				335		
Val	Thr	Ser	Asp	Tyr	Phe	Pro	Ala	Asn	Gln	Val	Thr	Ile	Glu	Ile	Asp
			340					345					350		
Pro	Gln	Val	Asp	Lys	Lys	Tyr	Ile	Cys	Leu	Gly	Val	Phe	Thr	Leu	Glu
			355				360					365			
Gly	Cys	Met	Pro	Ile	Asp	Ile	Thr	Val	Gln	Lys	Gly	Asn	Lys	Ala	Thr
			370				375				380				
Phe	Met	Asn	Val	Glu	Pro	Gly	Ile	Leu	Phe	Gln	Pro	Leu	Tyr	Asp	Asn
				385			390			395					400
Gly	Met	Lys	Trp	Val	Ala	Ala	Gly	Tyr	Pro	Phe	Gln	Cys	Arg	Arg	Lys
				405					410				415		
Gly	Arg	Gly	Glu	Val	Ser										
			420												

<210> 5966

<211> 167

<212> PRT

<213> B.fragilis

<400> 5966

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Asn Glu Lys Gly Met Lys Lys Ile Ile Asn Pro Trp Lys Gly Met Glu
1      5      10      15
Gly Tyr Asn Cys Phe Gly Cys Ala Pro Asn Asn Glu Ala Gly Val Lys
20      25      30
Met Glu Phe Tyr Glu Asp Asn Asp Glu Val Ile Ser Ile Trp Arg Pro
35      40      45
Arg Pro Glu Tyr Gln Gly Trp Ile Asp Thr Leu His Gly Gly Ile Gln
50      55      60
Ala Val Leu Leu Asp Glu Ile Cys Ala Trp Val Ile Leu Arg Lys Leu
65      70      75      80
Gln Thr Thr Gly Val Thr Ser Lys Met Glu Thr Arg Tyr Arg Lys Ser
85      90      95
Ile Ser Thr Asn Asp Ser His Val Val Leu Lys Ala His Ile Lys Glu
100     105     110
Val Lys Arg Asn Ile Val Ile Ile Glu Ala Arg Leu Tyr Asn Lys Asp
115     120     125
Glu Glu Leu Cys Thr Glu Ala Leu Cys Thr Tyr Phe Thr Phe Pro Lys
130     135     140
Glu Lys Ala Arg Glu Glu Met His Phe Leu Ser Cys Glu Val Glu Asp
145     150     155     160
Glu Glu Ile Leu Pro Leu Ile
165

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<210> 5967

<211> 338

<212> PRT

<213> B.fragilis

<400> 5967

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Pro Ile Phe Ile Met Lys Lys Ile Ile Leu Ser Ser Val Leu Leu Leu
1      5      10      15
Ser Gly Phe Phe Ile Gln Ala Gln Gln Ala Pro Glu Lys Ile Ser Phe
20      25      30
Asn Ser Asn Gly Glu Phe Lys Ile Ala Gln Phe Thr Asp Met His Leu
35      40      45
Gly His Asp Gln Glu Lys Asp Arg Ile Val Gly Asp Met Ile Lys Glu
50      55      60
Val Leu Asp Ser Glu Lys Pro Asp Leu Val Ile Phe Thr Gly Asp Asn
65      70      75      80
Thr Thr Met Asp Glu Val Arg Gln Ala Trp Glu Ala Ile Ser Ala Glu
85      90      95
Leu Ser Ala Arg Arg Ile Pro Trp Thr Ala Val Leu Gly Asn His Asp
100     105     110
Asp Glu Tyr Ala Val Lys Arg Asp Glu Ile Ile Arg Ile Ile Arg Glu
115     120     125
Gln Pro Tyr Cys Met Met Lys Gln Val Ala Glu Gly Ile Lys Gly Glu
130     135     140
Gly Asn His Ile Leu Pro Ile Tyr Ser Ser Lys Asp Gly Asn Lys Thr
145     150     155     160
Ala Ala Leu Leu Tyr Cys Leu Asp Thr Asn Ala Tyr Ser Lys Ile Lys
165     170     175
Thr Val Lys Gly Tyr Asp Trp Ile Gly Arg Ser Gln Ile Asp Trp Tyr
180     185     190
Ser Arg Glu Ser Arg Lys Tyr Thr Glu Arg Asn Glu Gly Gln Pro Leu
195     200     205
Pro Ala Leu Thr Phe Leu His Ile Pro Leu Pro Glu Tyr Thr Gln Ala
210     215     220
Trp Glu Ser Phe Glu Thr Lys Arg Tyr Gly Asp Arg Asn Glu Lys Glu

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225 230 235 240
 Cys Ser Pro His Ile Asn Ser Gly Met Phe Ala Asn Met Leu Glu Cys
 245 250 255
 Gly Asp Val Met Gly Val Phe Ala Gly His Asp His Val Asn Asp Tyr
 260 265 270
 Ile Ala Thr Leu Tyr Asn Ile Ala Leu Gly Tyr Gly Arg Ala Ser Gly
 275 280 285
 Gly Lys Asn Thr Tyr Gly Asp Lys Thr Pro Gly Ser Arg Ile Ile Val
 290 295 300
 Leu Lys Glu Gly Lys Arg Glu Phe Asp Thr Trp Leu Arg Glu Lys Gly
 305 310 315 320
 Asn Met Ala Lys Leu Asn Val Cys Thr Tyr Pro Gly Ser Phe Val Lys
 325 330 335
 Glu Lys

<210> 5968
 <211> 1054
 <212> PRT
 <213> B.fragilis

<400> 5968
 Leu Val Leu Met Asn Ser Lys Phe Leu Leu Leu Cys Ser Met Leu
 1 5 10 15
 Leu Cys Thr Ser Leu Ala Phe Ala Gln Ser Val Lys Val Thr Gly Thr
 20 25 30
 Val Thr Asp Lys Met Gly Ala Val Ile Gly Ala Thr Ile Met Val Lys
 35 40 45
 Asn Ser Ser Asn Gly Thr Val Thr Asp Ile Asp Gly Arg Tyr Ser Ile
 50 55 60
 Glu Val Pro Lys Asn Ala Thr Leu Leu Phe Ser Phe Val Gly Tyr Ser
 65 70 75 80
 Thr Val Glu Lys Glu Val Gly Asn Asn Thr Val Ile Asn Val Glu Leu
 85 90 95
 Ser Asp Asp Ile Gln Ala Ile Asp Glu Val Val Val Thr Ala Ile Gly
 100 105 110
 Ile Lys Gln Gln Lys Lys Lys Ile Gly Tyr Thr Thr Gln Gln Ile Asn
 115 120 125
 Ser Glu Val Leu Asn Ala Thr Pro Ser Leu Asn Val Gly Ser Ala Leu
 130 135 140
 Ser Gly Gln Val Ala Gly Leu Leu Val Ala Asn Pro Thr Gly Ile Phe
 145 150 155 160
 Gln Ala Pro Ser Phe Lys Leu Arg Gly Asn Ala Pro Leu Val Val Leu
 165 170 175
 Asp Gly Val Pro Val Glu Thr Asp Phe Phe Asp Ile Ser Ser Glu Asn
 180 185 190
 Ile Glu Ser Val Asn Val Leu Lys Gly Thr Ala Ala Ser Ala Leu Tyr
 195 200 205
 Gly Ser Arg Gly Lys Asn Gly Ala Ile Leu Ile Thr Ser Lys Thr Ala
 210 215 220
 Lys Lys Glu Gly Leu Glu Ile Asn Phe Ser Thr Asn Asn Met Ile Thr
 225 230 235 240
 Ala Gly Phe Ala Val Leu Pro Glu Thr Gln His Gln Tyr Gly Ser Gly
 245 250 255
 Ser Asn Gly Lys Tyr Glu Phe Trp Asp Gly Ala Asp Gly Gly Ile Ser
 260 265 270
 Asp Gly Asp Met Thr Trp Gly Pro Lys Leu Asn Val Gly Thr Lys Val
 275 280 285
 Ala Gln Trp Asn Ser Pro Ile Arg Asp Lys Val Thr Gly Lys Glu Ile

290	295	300
Pro Trp Trp Gly Asp Val Lys Gly Thr Gln Tyr Asp Asp Lys Ser Arg		
305	310	315
Tyr Glu Arg Ile Pro Ile Asp Trp Val Ser His Asp Asn Leu Lys Asp		320
	325	330
		335
Phe Leu Gln Thr Gly Leu Val Thr Asn Asn Ile Ser Ile Ala Tyr		
	340	345
		350
Lys Gly Glu Lys Ala Arg Tyr Phe Val Thr Gly Gln Tyr Ala Tyr Gln		
	355	360
		365
Lys Gly Gln Val Pro Ser Thr Glu Met His Ser Gly Gly Ile Asn Phe		
	370	375
		380
Asn Ser Thr Phe Asp Leu Ala Lys Asn Leu Gln Leu Asp Ala Asn Leu		
385	390	395
		400
Ala Tyr Asn Lys Ile Val Ala Pro Ser Tyr Pro Arg Tyr Gly Tyr Gly		
	405	410
		415
Pro Lys Asn His Met Tyr Thr Ile Val Val Trp Met Gly Asp Asp Val		
	420	425
		430
Asn Gly Lys Glu Leu Gln Lys His Lys Tyr Val Pro Gly Gln Glu Gly		
	435	440
		445
Tyr Arg Gln Ala Ser Tyr Asn Tyr Ala Trp Tyr Asn Asn Pro Tyr Phe		
450	455	460
Ala Ala Glu Glu Leu Gln Ser Glu Ser Arg Asp Val Val Asn Gly		
465	470	475
		480
Gln Val Arg Leu Asn Tyr Gln Ile Leu Pro Asn Leu Asn Ile Gln Gly		
	485	490
		495
Arg Ala Ala Leu Arg Gln Lys Thr Ile Leu Gln Glu Met Lys Val Pro		
	500	505
		510
Lys Thr Tyr Met Asn Tyr Gly Asp Ser Arg Glu Gly Asp Tyr Lys Val		
	515	520
		525
Trp Asn Asp Arg Gln Thr Asn Val Asp Ala Asp Val Leu Ala Thr Tyr		
530	535	540
Thr Gln Asp Leu Thr Pro Asp Ile Leu Phe Thr Leu Asn Ala Gly Thr		
545	550	555
		560
Ser Val Phe Tyr Arg Asn Tyr Arg Gln Glu Tyr Gln Ser Thr Asp Gly		
	565	570
		575
Leu Ile Val Pro Phe Val Tyr Ser Ile Lys Asn Thr Gln Gly Pro Ser		
	580	585
		590
Ile Thr Asp Ala Asn Arg Asn Glu Lys Ser Ile Arg Ser Ile Tyr Gly		
	595	600
		605
Ser Ile Asn Leu Asp Leu Tyr Lys Tyr Ala Tyr Leu Thr Leu Thr Gly		
610	615	620
Arg Asn Asp Trp Ser Ser Thr Leu Ala Lys Gly Ser Asn Ser Tyr Phe		
625	630	635
		640
Tyr Pro Ser Val Ala Leu Ser Thr Met Val Ser Glu Tyr Ile Lys Leu		
	645	650
		655
Pro Thr Phe Met Asp Tyr Leu Lys Met Tyr Gly Ser Trp Ala Val Val		
	660	665
		670
Ser Thr Asp Leu Ser Pro Tyr Gln Ile Met Ser Thr Tyr Thr Lys Asp		
	675	680
		685
Ser Asn Tyr Gly Ser Asn Pro Ser Ile Ser Tyr Pro Ser Ser Leu Val		
690	695	700
Asn Tyr Tyr Ile Lys Pro Gln Lys Thr Thr Ser Trp Glu Ala Gly Leu		
705	710	715
		720
Ser Thr Ala Phe Phe Arg Asn Arg Leu Ser Phe Asp Leu Thr Tyr Tyr		
	725	730
		735
His Thr Ile Asp Glu Asn Gln Ile Ile Asp Leu Asn Ile Ser Asn Ala		
	740	745
		750
Ser Gly Phe Thr Ser Arg Lys Val Asn Gly Asn Gln Tyr Thr Thr Asn		
755	760	765

Gly Trp Glu Ile Met Ala Asn Val Gln Ala Ile Lys Asn Lys Asp Phe
 770 775 780
 Gln Trp Asp Phe Ser Leu Asn Trp Ser Lys Ser Val Lys Lys Leu Thr
 785 790 795 800
 Glu Ile Tyr Gly Gly Gln Lys Lys Phe Gly Asp Leu Lys Val Gly Asp
 805 810 815
 Arg Ala Asp Ala Phe Tyr Gly Ser Gln Trp Gln Lys Ser Ala Asp Gly
 820 825 830
 Glu Leu Ile Leu Asp Glu Asn Gly Met Pro Thr Lys Asp Ala Tyr Lys
 835 840 845
 Gln Tyr Leu Gly His Leu Asp Pro Asn Phe Arg Met Gly Met Gln Asn
 850 855 860
 Thr Phe Arg Tyr Lys Asp Phe Thr Leu Ser Val Asp Leu Asp Gly Ala
 865 870 875 880
 Tyr Lys Gly Val Ile Tyr Ser Val Leu Ser Glu Lys Leu Trp Trp Gly
 885 890 895
 Gly Lys His Pro Glu Ser Val Glu Tyr Arg Asp Ala Gln Tyr Ala Val
 900 905 910
 Gly His Pro Ile Tyr Val Pro Asn Gly Val Val Val Thr Gly Gly Glu
 915 920 925
 Leu Lys Arg Asp Ile Asp Gly Asn Val Ile Ser Asp Thr Arg Thr Tyr
 930 935 940
 Lys Arg Asn Thr Thr Ala Val Asp Trp Gln Gln Trp Cys Gln Asn Tyr
 945 950 955 960
 Pro Tyr Gln Ala Tyr Val Ser Ser Lys Glu Asn Ala Lys Phe Ala Asn
 965 970 975
 Val Phe Asp Arg Ser Tyr Ile Lys Leu Arg Arg Val Ala Leu Thr Tyr
 980 985 990
 Asn Phe Thr Lys Leu Leu Ser Lys Gln Ser Pro Val Lys Gly Leu Thr
 995 1000 1005
 Ala Thr Val Phe Gly Asn Asn Leu Ala Val Trp Lys Lys Val Pro Phe
 1010 1015 1020
 Val Asp Pro Asp Tyr Thr Gly Asp Ser Asn Asp Gly Gly Ala Asn Asp
 1025 1030 1035 1040
 Pro Thr Ala Arg Tyr Ile Gly Met Gly Val Asn Ile Lys Phe
 1045 1050

<210> 5969

<211> 416

<212> PRT

<213> B.fragilis

<400> 5969

Pro Tyr Ile Ile Glu Met Ser Thr Tyr Ala Pro Phe Ala Lys Pro Leu
 1 5 10 15
 Tyr Val Met Leu Lys Pro Val Gly Ala Val Cys Asn Leu Ala Cys Asp
 20 25 30
 Tyr Cys Tyr Tyr Leu Glu Lys Ser Arg Leu Tyr Gln Glu Asn Pro Lys
 35 40 45
 His Val Met Ser Asp Glu Leu Leu Glu Lys Phe Ile Glu Gln Tyr Ile
 50 55 60
 Asn Ser Gln Thr Met Pro Gln Val Leu Phe Thr Trp His Gly Gly Glu
 65 70 75 80
 Thr Leu Met Arg Pro Leu Ser Phe Tyr Lys Lys Ala Met Glu Leu Gln
 85 90 95
 Lys Lys Tyr Ala Arg Gly Arg Ser Ile Asp Asn Cys Ile Gln Thr Asn
 100 105 110
 Gly Thr Leu Leu Thr Asp Glu Trp Cys Glu Phe Phe Arg Glu Asn Asn
 115 120 125

Trp Leu Val Gly Val Ser Ile Asp Gly Pro Gln Glu Phe His Asp Glu
 130 135 140
 Tyr Arg Lys Asn Lys Leu Gly Lys Pro Ser Phe Val Lys Val Thr Asn
 145 150 155 160
 Gly Ile Asn Leu Leu Lys Lys His Gly Val Glu Trp Asn Ala Met Ala
 165 170 175
 Val Val Asn Asp Phe Asn Ala Asp Tyr Pro Leu Asp Phe Tyr His Phe
 180 185 190
 Phe Lys Glu Leu Gly Cys His Tyr Ile Gln Phe Ala Pro Ile Val Glu
 195 200 205
 Arg Ile Phe Pro His Gln Asp Gly Arg His Leu Ala Ser Leu Ala Gln
 210 215 220
 Arg Glu Gly Gly Glu Leu Ala Glu Phe Ser Val Thr Pro Glu Gln Trp
 225 230 235 240
 Gly Asn Phe Leu Cys Thr Leu Phe Asp Glu Trp Val Lys Glu Asp Val
 245 250 255
 Gly Asp Tyr Tyr Ile Gln Leu Phe Asp Ser Thr Leu Ala Asn Trp Val
 260 265 270
 Gly Glu Gln Pro Gly Val Cys Ser Met Ala Lys Thr Cys Gly His Ala
 275 280 285
 Gly Val Met Glu Phe Asn Gly Asp Val Tyr Ser Cys Asp His Phe Val
 290 295 300
 Phe Pro Glu Phe Lys Leu Gly Asn Ile Tyr Asn Gln Thr Leu Val Glu
 305 310 315 320
 Met Met Tyr Ser Glu Arg Gln Thr Ala Phe Gly Gln Met Lys Gln Lys
 325 330 335
 Ser Leu Pro Thr Gln Cys Lys Glu Cys Glu Phe Leu Phe Ala Cys Asn
 340 345 350
 Gly Glu Cys Pro Lys Asn Arg Phe Cys Arg Thr Ala Asn Gly Glu Pro
 355 360 365
 Gly Leu Asn Tyr Leu Cys Lys Gly Tyr His Gln Phe Phe Lys His Val
 370 375 380
 Ala Pro Tyr Met Asp Phe Met Lys Asn Glu Leu Met Asn Gln Arg Pro
 385 390 395 400
 Pro Ala Asn Val Met Asp Ala Ile Lys Glu Asn Lys Leu Ile Ile Asp
 405 410 415

<210> 5970

<211> 204

<212> PRT

<213> B.fragilis

<400> 5970

Lys Glu Ile Met Val Ile Lys Lys Ala Val Tyr Val Trp Val Ile Gly
 1 5 10 15
 Ile Leu Gly Met Ile Ser Phe Ala Ala Cys Ser Ser Ala Ser Gln Gly
 20 25 30
 Glu Val Pro Ser Thr Ser Asn Ala Ala Leu Asp Asn Ile Phe Ala Arg
 35 40 45
 Lys Ser Val Arg Ala Tyr Leu Asp Lys Glu Val Glu Lys Glu Lys Ile
 50 55 60
 Asp Trp Met Leu Arg Ala Gly Met Ala Ala Pro Ser Gly Lys Asp Ile
 65 70 75 80
 Arg Pro Trp Glu Phe Val Leu Val Thr Asp Arg Val Ala Leu Asp Ser
 85 90 95
 Met Ala Ala Ala Leu Pro Tyr Ala Lys Met Leu Thr Gln Ala Arg Tyr
 100 105 110
 Ala Ile Val Val Cys Gly Asp Val Ala Gln Ser Ser Tyr Trp Tyr Leu
 115 120 125

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Asp Cys Ser Ala Ala Ala Gln Asn Ile Leu Leu Ala Ala Glu Ala Gln
 130          135          140
Gly Leu Gly Ala Val Trp Thr Ala Ala Tyr Pro Tyr Glu Asp Arg Ile
 145          150          155          160
Arg Val Val Arg Lys Tyr Thr Glu Leu Pro Gly Asn Ile Val Pro Leu
          165          170          175
Cys Val Ile Pro Phe Gly Tyr Pro Ala Thr Ala Gln Glu Pro Lys Gln
          180          185          190
Lys Phe Asp Glu Lys Lys Ile His Tyr Asp Lys Phe
          195          200

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<210> 5971

<211> 282

<212> PRT

<213> B.fragilis

<400> 5971

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Lys Val Thr Ile Met Thr Ala Asn Glu Val His Leu Ile Tyr Phe Ser
 1          5          10          15
Pro Thr His Thr Ser Lys Gln Val Gly Glu Ala Ile Val Arg Gly Thr
          20          25          30
Gly Ile Thr Asn Val Ile Asn Thr Asn Leu Thr Gln Gln Ala Thr Gln
          35          40          45
Asp Leu Val Ile Ala Glu Ser Ala Leu Ala Ile Ile Val Val Pro Val
          50          55          60
Tyr Gly Gly Arg Val Ala Pro Leu Ala Met Asp Arg Leu Ala Ser Val
          65          70          75          80
Arg Gly Ser Asn Thr Pro Ala Val Ile Val Val Val Tyr Gly Asn Arg
          85          90          95
Ala Tyr Glu Lys Ser Leu Met Glu Leu Asp Tyr Trp Ala Ile Gln Gln
          100          105          110
Gly Phe Lys Val Ile Ala Gly Ala Thr Phe Ile Gly Glu His Ser Tyr
          115          120          125
Ser Thr Glu Lys Tyr Pro Val Ala Ala Gly Arg Pro Asp Glu Arg Asp
          130          135          140
Leu Ala Val Ala Ala Asp Phe Gly Lys Gln Ile Ser Asp Lys Ile Ala
          145          150          155          160
Ser Ala Thr Glu Pro Glu Lys Leu Tyr Ala Val Asp Val Arg Lys Ile
          165          170          175
Arg Arg Pro Arg Gln Pro Phe Phe Pro Leu Phe Arg Phe Leu Arg Lys
          180          185          190
Val Ile Ala Leu Arg Lys Ser Gly Val Pro Leu Pro Arg Thr Pro Trp
          195          200          205
Val Glu Asp Glu Ser Leu Cys Thr His Cys Gly Thr Cys Ala Lys Met
          210          215          220
Cys Pro Val Ser Ala Ile Ala Lys Gly Asp Glu Leu Asn Thr Asp Ala
          225          230          235          240
Glu Arg Cys Ile Lys Cys Cys Ala Cys Val Lys Gly Cys Pro Gln Lys
          245          250          255
Ala Arg Val Tyr Asp Thr Pro Phe Ala Val Leu Leu Ser Gln Cys Phe
          260          265          270
Val Lys Gln Lys Asp Pro Cys Thr Leu Val
          275          280

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<210> 5972

<211> 301

<212> PRT

<213> B.fragilis

<400> 5972

Asn	Val	Tyr	Ile	Tyr	Met	Lys	Lys	Glu	Val	Trp	Ile	Lys	Leu	Val	Lys
1				5					10				15		
Arg	Ile	Gly	Asn	Trp	Ile	Val	Asn	Ile	Cys	Phe	Tyr	Ser	Cys	Val	Ala
			20					25					30		
Phe	Val	Ala	Trp	Met	Val	Leu	Gln	Val	Phe	Cys	Leu	Thr	Ser	Phe	Lys
		35					40					45			
Ile	Pro	Ser	Asn	Ser	Met	Glu	Pro	Ala	Leu	Leu	Ser	Gly	Asp	Lys	Ile
	50					55					60				
Leu	Val	Asp	Lys	Trp	Thr	Gly	Gly	Ala	Arg	Leu	Phe	Asn	Ile	Phe	Ala
65					70				75					80	
Ser	Leu	Arg	Gly	Glu	Glu	Val	Asp	Ile	Tyr	Arg	Leu	Pro	Gly	Phe	Gly
				85					90					95	
Ser	Phe	Gln	Arg	Asp	Asp	Val	Leu	Val	Phe	Asn	Phe	Pro	Tyr	Gln	Asp
			100					105					110		
Gly	Ser	Asp	Ser	Ile	Gly	Phe	Asp	Ile	Met	Lys	Tyr	Tyr	Val	Lys	Arg
		115				120						125			
Cys	Ile	Ala	Leu	Pro	Gly	Asp	Thr	Leu	Glu	Ile	Arg	Lys	Gly	Tyr	Tyr
	130					135					140				
His	Ile	Lys	Gly	Ile	Thr	Asp	Ser	Val	Gly	Asn	Val	Gln	Ala	Gln	His
145					150					155					160
Arg	Ile	Ala	Arg	Val	Arg	Arg	Glu	Asp	Ser	His	Gly	Ile	Val	Met	Asp
				165					170					175	
Ala	Phe	Pro	Trp	Asp	Gly	Arg	Leu	Gly	Trp	Thr	Ile	Gln	Glu	Phe	Gly
			180					185					190		
Pro	Leu	Pro	Val	Pro	Ala	Lys	Gly	Gln	Val	Val	Lys	Ile	Asp	Thr	Leu
		195					200					205			
Ser	Cys	Leu	Leu	Tyr	Gly	Arg	Leu	Ile	His	Trp	Glu	Gln	Lys	Lys	Arg
	210					215					220				
Leu	Arg	Gln	Lys	Gly	Glu	Ala	Val	Cys	Leu	Gly	Asp	Ser	Ala	Ile	Thr
225					230					235				240	
Glu	Tyr	Lys	Phe	Thr	Glu	Asn	Tyr	Tyr	Phe	Val	Ser	Gly	Asp	Asn	Met
				245					250					255	
Glu	Asn	Ser	Lys	Asp	Ser	Arg	Tyr	Trp	Gly	Met	Leu	Pro	Glu	Ser	Tyr
			260					265					270		
Ile	Val	Gly	Arg	Ala	Phe	Thr	Ile	Trp	Arg	Ser	Asp	Asp	Pro	Leu	Arg
		275					280					285			
Gly	Lys	Ile	Arg	Trp	Asn	Arg	Val	Phe	Lys	Arg	Ile	Lys			
	290					295					300				

<210> 5973

<211> 426

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (175),(416),(423),(424)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5973

Phe	Lys	Asp	Met	Phe	Asp	Asn	Leu	Ser	Glu	Arg	Leu	Glu	Arg	Ser	Phe
1				5					10					15	
Lys	Ile	Leu	Lys	Gly	Glu	Gly	Lys	Ile	Thr	Glu	Ile	Asn	Val	Ala	Glu
			20					25					30		
Thr	Leu	Lys	Asp	Val	Arg	Lys	Ala	Leu	Leu	Asp	Ala	Asp	Val	Asn	Tyr
		35					40					45			
Lys	Val	Ala	Lys	Gly	Phe	Thr	Asp	Thr	Val	Lys	Glu	Lys	Ala	Leu	Gly
	50					55						60			

Gln Asn Val Leu Thr Ala Val Lys Pro Ser Gln Leu Met Val Lys Ile
 65 70 75 80
 Val His Asp Glu Leu Thr Gln Leu Met Gly Gly Glu Thr Val Glu Ile
 85 90 95
 Asp Thr Lys Gly Gln Pro Ala Val Ile Leu Met Ser Gly Leu Gln Gly
 100 105 110
 Ser Gly Lys Thr Thr Phe Ser Gly Lys Leu Ala Arg Met Leu Lys Thr
 115 120 125
 Lys Lys Asn Lys Arg Pro Leu Leu Val Ala Cys Asp Val Tyr Arg Pro
 130 135 140
 Ala Ala Ile Glu Gln Leu Arg Val Leu Ala Glu Gln Ile Asp Val Pro
 145 150 155 160
 Met Tyr Ser Glu Ile Asp Ser Lys Asp Pro Val Ser Ile Ala Xaa Asn
 165 170 175
 Ala Ile Lys Glu Ala Arg Ala Lys Gly Tyr Asp Leu Val Ile Val Asp
 180 185 190
 Thr Ala Gly Arg Leu Ala Val Asp Glu Gln Met Met Asn Glu Ile Ala
 195 200 205
 Ala Ile Lys Glu Ala Ile Gln Pro Asn Glu Ile Leu Phe Val Val Asp
 210 215 220
 Ser Met Thr Gly Gln Asp Ala Val Asn Thr Ala Lys Glu Phe Asn Glu
 225 230 235 240
 Arg Leu Asp Phe Asp Gly Val Val Leu Thr Lys Leu Asp Gly Asp Thr
 245 250 255
 Arg Gly Gly Ala Leu Ser Ile Arg Ser Val Val Asn Lys Pro Ile
 260 265 270
 Lys Phe Val Gly Thr Gly Glu Lys Leu Asp Ala Ile Asp Gln Phe His
 275 280 285
 Pro Ala Arg Met Ala Asp Arg Ile Leu Gly Met Gly Asp Ile Val Ser
 290 295 300
 Leu Val Glu Arg Ala Gln Glu Gln Tyr Asp Glu Glu Glu Ala Lys Arg
 305 310 315 320
 Leu Gln Lys Lys Ile Ala Lys Asn Gln Phe Asp Phe Asn Asp Phe Leu
 325 330 335
 Ser Gln Met Ser Gln Ile Lys Lys Met Gly Asn Leu Lys Glu Leu Ala
 340 345 350
 Ser Met Ile Pro Gly Val Gly Lys Ala Ile Lys Asp Ile Asp Ile Asp
 355 360 365
 Asp Asn Ala Phe Lys Ser Ile Glu Ala Ile Ile Tyr Ser Met Thr Pro
 370 375 380
 Glu Glu Arg Ser Asn Pro Gly Ile Leu Asn Gly Ser Arg Arg Thr Arg
 385 390 395 400
 Ile Ala Lys Gly Ser Gly Thr Thr Ser Leu His Arg Gly Phe Gln Xaa
 405 410 415
 Arg Ser Ile Gly Ile Ser Xaa Xaa Asp His
 420 425

<210> 5974

<211> 216

<212> PRT

<213> B.fragilis

<400> 5974

Lys Arg Tyr Ile Ile Met Lys Lys Leu Gln Phe Leu Val Cys Phe Leu
 1 5 10 15
 Leu Leu Ser Val Ala Ser Tyr Ala Ala Glu Arg Thr Ile Gln Leu Pro
 20 25 30
 Lys Pro Asp Met Asn Arg Ala Gly Leu Leu Met Lys Ala Leu Ser Glu
 35 40 45

Arg His Ser Thr Arg Glu Tyr Ala Ser Lys Ala Leu Ser Asn Thr Asp
 50 55 60
 Leu Ser Asp Leu Leu Trp Ala Ala Asn Gly Ile Asn Arg Ser Ser Glu
 65 70 75 80
 Gly Lys Arg Thr Ala Pro Ser Ala Met Asn Arg Gln Asp Ile Asp Ile
 85 90 95
 Tyr Val Val Leu Pro Gln Gly Thr Tyr Leu Tyr Asp Ala Lys Gly His
 100 105 110
 Lys Leu Asn Leu Ile Ser Glu Gly Asp His Arg Ser Ala Val Ala Gly
 115 120 125
 Gly Gln Ala Phe Val Asn Asn Ala Pro Val Ser Leu Val Leu Val Ser
 130 135 140
 Asp Leu Ser Lys Leu Gly Asp Ala Lys Ser Asn His Val Gln Leu Met
 145 150 155 160
 Gly Ala Met Asp Ala Gly Ile Val Ser Gln Asn Ile Ser Leu Phe Cys
 165 170 175
 Ser Ala Ala Arg Leu Ala Thr Val Pro Arg Ala Ser Met Asp Leu Val
 180 185 190
 Arg Leu Lys Ala Ala Leu Lys Leu Lys Asp Thr Gln Met Pro Met Met
 195 200 205
 Asn His Pro Val Gly Tyr Phe Lys
 210 215

<210> 5975

<211> 199

<212> PRT

<213> B.fragilis

<400> 5975

Arg Asn Leu Ile Arg Thr Tyr Tyr Cys His Lys Lys Arg His Thr Lys
 1 5 10 15
 Ala Ile Leu Tyr Ala Arg Phe Leu Phe Asn Gln Lys Asn Ile Arg Ile
 20 25 30
 Leu Phe Ala Lys Ile Lys Arg Thr Leu Tyr Leu Cys Ile Arg Phe Lys
 35 40 45
 Met Val Met Asn Thr Phe Leu Glu Arg Arg Lys Lys Met Glu Ser Tyr
 50 55 60
 Asn Arg Leu Leu Glu His Asn Ile Lys Pro Ser Met Gln Arg Ile Ala
 65 70 75 80
 Ile Met Asn Tyr Leu Met Glu His Lys Thr His Pro Ser Ala Asp Glu
 85 90 95
 Ile Tyr Thr Glu Leu Ser Ser Ser Met Pro Thr Leu Ser Lys Thr Thr
 100 105 110
 Val Tyr Asn Thr Leu Arg Leu Phe Ser Glu Gln Gly Ala Ala Gln Met
 115 120 125
 Leu Thr Ile Asp Glu Arg Asn Thr Asn Phe Asp Ala Asp Thr Ser Gln
 130 135 140
 His Ala His Phe Leu Cys Lys Arg Cys Gly Arg Ile Tyr Asp Leu Lys
 145 150 155 160
 Cys Gln Val Glu Met Lys Gln Val Glu Gly Leu Gln Met Asp Gly His
 165 170 175
 Glu Val Ser Glu Val His Tyr Tyr Tyr Lys Gly Val Cys Lys Lys Cys
 180 185 190
 Leu Asn Asn Ile Arg Ile Asp
 195

<210> 5976

<211> 340

<212> PRT

<213> B.fragilis

<400> 5976

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Thr Lys Leu Met Lys Gln Ile Asn Ala Val Ile Thr Gly Val Gly Gly
1      5      10      15
Tyr Val Pro Asp Tyr Ile Leu Thr Asn Asp Glu Ile Ser Arg Ile Val
20      25      30
Asp Thr Thr Asp Glu Trp Ile Met Gly Arg Ile Gly Ile Lys Glu Arg
35      40      45
Arg Ile Leu Asn Glu Glu Gly Leu Gly Thr Ser Tyr Met Ala Arg Lys
50      55      60
Ala Val Lys Gln Leu Met Gln Arg Thr Gln Ser Asn Pro Asp Asp Ile
65      70      75      80
Asp Leu Val Ile Val Ala Thr Thr Thr Pro Asp Tyr Arg Leu Pro Ser
85      90      95
Thr Ala Ser Ile Leu Cys Glu Arg Val Gly Leu Lys Asn Ala Phe Ala
100     105     110
Phe Asp Met Gln Ala Val Cys Ser Gly Phe Leu Tyr Ala Leu Glu Thr
115     120     125
Gly Ala Asn Phe Ile Arg Ser Gly Lys Tyr Lys Lys Val Ile Ile Val
130     135     140
Gly Ala Asp Lys Met Ser Ser Val Ile Asp Tyr Thr Asp Arg Ala Thr
145     150     155     160
Cys Pro Ile Phe Ala Asp Gly Ala Ala Ala Phe Leu Leu Glu Pro Thr
165     170     175
Thr Asp His Leu Gly Val Ile Asp Ser Val Leu Arg Thr Asp Gly Lys
180     185     190
Gly Leu Pro Phe Leu His Met Lys Ala Gly Gly Ser Val Cys Ser Pro
195     200     205
Ser Tyr Phe Thr Val Asp Asn His Met His Tyr Leu His Gln Glu Gly
210     215     220
Arg Thr Val Phe Lys Tyr Ala Val Ala Asn Met Ser Asp Ala Cys Glu
225     230     235     240
Ser Ile Ile Glu Arg Asn Gln Leu Thr Lys Asp Glu Ile Asp Trp Val
245     250     255
Val Pro His Gln Ala Asn Gln Arg Ile Ile Ser Ala Val Ala Gln Arg
260     265     270
Leu Asp Val Pro Leu Glu Lys Val Met Ile Asn Ile Glu His Tyr Gly
275     280     285
Asn Thr Ser Ala Gly Thr Leu Pro Leu Cys Ile Trp Asp Phe Glu Asn
290     295     300
Lys Leu Lys Lys Gly Asp Asn Leu Ile Phe Thr Ala Phe Gly Ala Gly
305     310     315     320
Phe Ala Trp Gly Ala Val Tyr Val Lys Trp Gly Tyr Asp Gly Lys Thr
325     330     335
Asn Asn Ala Cys
340

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<210> 5977

<211> 287

<212> PRT

<213> B.fragilis

<400> 5977

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Asp Ile Val Ile Met Leu Arg Ile Ala Val Gln Ala Lys Gly Arg Leu
1      5      10      15
Phe Glu Glu Thr Met Ala Leu Leu Glu Glu Ser Asp Ile Lys Leu Ser
20      25      30
Thr Thr Lys Arg Thr Leu Leu Val Gln Ser Ser Asn Phe Pro Val Glu

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      35              40              45
Val Leu Phe Leu Arg Asp Asp Ile Pro Gln Ser Val Ala Thr Gly
  50              55              60
Val Ala Asp Leu Gly Ile Val Gly Glu Asn Glu Phe Val Glu Arg Gln
  65              70              75              80
Glu Asp Ala Glu Ile Ile Lys Arg Leu Gly Phe Ser Lys Cys Arg Leu
      85              90              95
Ser Leu Ala Met Pro Lys Asp Ile Glu Tyr Pro Gly Leu Ser Trp Phe
      100             105             110
Asn Gly Lys Lys Ile Ala Thr Ser Tyr Pro Gly Ile Leu Asp Ala Phe
      115             120             125
Met Lys Ser Asn Gly Val Lys Ala Glu Val His Val Ile Thr Gly Ser
      130             135             140
Val Glu Val Ala Pro Gly Ile Gly Leu Ala Asp Ala Ile Phe Asp Ile
      145             150             155             160
Val Ser Ser Gly Ser Thr Leu Val Ser Asn Arg Leu Lys Glu Val Glu
      165             170             175
Val Val Met Arg Ser Glu Ala Leu Leu Ile Gly Asn Lys Asn Met Ser
      180             185             190
Lys Glu Lys Lys Glu Ile Leu Asp Glu Leu Leu Phe Arg Met Asp Ala
      195             200             205
Val Lys Thr Ala Glu Asp Lys Lys Tyr Val Leu Met Asn Ala Pro Lys
      210             215             220
Asp Lys Leu Glu Asp Ile Ile Ala Val Leu Pro Gly Met Lys Ser Pro
      225             230             235             240
Thr Val Met Pro Leu Ala Gln Asp Gly Trp Cys Ser Val His Thr Val
      245             250             255
Leu Asp Glu Lys Arg Phe Trp Glu Ile Ile Gly Lys Leu Lys Ala Leu
      260             265             270
Gly Ala Glu Gly Ile Leu Val Leu Pro Ile Glu Lys Met Ile Ile
      275             280             285

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<210> 5978

<211> 153

<212> PRT

<213> B.fragilis

<400> 5978

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Glu Asn Lys Met Lys Leu Ala Pro Ile Asn Ile Lys Asn Lys Arg Ala
  1              5              10              15
Thr Phe Asp Tyr Glu Leu Ile Asp Thr Tyr Thr Ala Gly Ile Val Leu
      20              25              30
Thr Gly Thr Glu Ile Lys Ser Ile Arg Leu Gly Lys Ala Ser Leu Val
      35              40              45
Asp Thr Phe Cys Tyr Phe Ala Lys Gly Glu Leu Trp Val Lys Asn Met
      50              55              60
His Ile Ala Glu Tyr Phe Tyr Gly Ser Tyr Asn Asn His Ala Ala Arg
      65              70              75              80
Arg Asp Arg Lys Leu Leu Leu Ser Lys Lys Glu Leu Asn Lys Leu Glu
      85              90              95
Arg Gly Thr Lys Asp Ala Gly Phe Thr Ile Val Pro Val Arg Leu Phe
      100             105             110
Ile Asn Glu Arg Gly Leu Ala Lys Val Val Val Ala Leu Ala Lys Gly
      115             120             125
Lys Lys Gln Tyr Asp Lys Arg Glu Ala Leu Lys Glu Lys Asp Asp Arg
      130             135             140
Arg Asp Met Asp Arg Met Phe Lys Arg
      145             150

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<210> 5979
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 5979

Lys	Gln	Arg	Met	Lys	Lys	Val	Leu	Ser	Leu	Val	Ala	Leu	Ala	Met	Ile
1				5					10					15	
Ser	Thr	Ile	Met	Phe	Ala	Val	Asn	Asp	Gly	Val	Lys	Ala	Asp	Gln	Asn
			20					25					30		
Lys	Lys	Glu	Ala	Lys	Ser	Gly	Glu	Val	Ile	Val	Met	Asn	Lys	Glu	Met
		35					40					45			
Phe	Ile	Asn	Asp	Val	Phe	Asp	Tyr	Gln	Asn	Ser	Lys	Glu	Trp	Lys	Tyr
	50					55					60				
Lys	Gly	Asp	Lys	Pro	Ala	Ile	Ile	Asp	Leu	Tyr	Ala	Asp	Trp	Cys	Gly
65					70				75						80
Pro	Cys	Arg	Met	Thr	Ala	Pro	Ile	Met	Lys	Ser	Leu	Ala	Lys	Glu	Tyr
				85					90					95	
Asp	Gly	Lys	Ile	Val	Ile	Tyr	Lys	Val	Asn	Val	Asp	Lys	Glu	Lys	Glu
			100					105					110		
Leu	Ala	Ala	Leu	Phe	Asn	Ala	Thr	Ser	Ile	Pro	Leu	Phe	Val	Phe	Ile
			115				120						125		
Pro	Met	Glu	Gly	Glu	Pro	Gln	Leu	Phe	Arg	Gly	Ala	Ala	Asp	Lys	Ala
	130					135					140				
Thr	Tyr	Lys	Lys	Ala	Ile	Asp	Glu	Phe	Leu	Leu	Lys	Gln	Lys		
145					150						155				

<210> 5980
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5980

Phe	Thr	Pro	Ile	Met	Lys	Trp	Met	Ile	Leu	Ile	Phe	Leu	Asn	Phe	Leu
1				5					10					15	
Phe	Cys	Ala	Gln	Leu	Val	Gly	Gln	Val	Ser	Arg	Pro	Asp	Arg	Asn	Leu
			20					25					30		
Leu	Arg	Gly	Glu	Thr	Tyr	Val	Ile	Glu	Val	Pro	Lys	Gly	Trp	Lys	Arg
		35					40					45			
Pro	Ser	Ala	Val	His	Ser	Cys	Asn	Asp	Glu	Pro	Leu	Lys	Arg	Val	Asn
	50					55					60				
Gly	Lys	Tyr	Glu	Thr	Thr	Lys	Phe	Met	Arg	Val	Tyr	Ser	Lys	Arg	Lys
65					70				75						80
Asp	Arg	Cys	Gly	Ala	Val	Leu	Thr	Ile	Met	Glu	Ile	Gln	Lys	Cys	Ala
				85					90					95	
Ser	Phe	Gln	Glu	Ile	Phe	Lys	Glu	Asp	Ser	Ile	Trp	Ala	Ser	Thr	Asp
			100					105					110		
Thr	Thr	Gln	Val	Lys	Val	Ile	Tyr	Lys	Ser	Val	Asn	Ser	Lys	Asn	Gly
		115					120						125		
Val	Lys	Lys	Met	Ala	Phe	Thr	Ser	Tyr	Lys	Ala	Glu	Arg	His	Pro	Glu
	130					135					140				
Thr	Asn	Glu	Leu	Ser	Ala	Leu	Gln	Lys	Ala	Glu	Trp	Tyr	Leu	Gln	Gly
145					150					155					160
Arg	Glu	Asn	Val	Tyr	Tyr	Ile	Ser	Phe	Thr	Ser	Cys	Ser	Leu	Phe	Leu
				165					170					175	
Glu	Leu	Leu	Pro	Gln	Ile	Lys	Asp	Ile	Val	Ala	Ser	Leu	Lys	Glu	Leu
			180					185						190	

<210> 5981

<211> 485
 <212> PRT
 <213> B.fragilis

<400> 5981

Met	His	Trp	Ile	Met	Glu	Asn	Gly	Val	Met	Met	Gln	Tyr	Phe	Glu	Trp
1				5					10					15	
Asn	Leu	Pro	Asn	Asp	Gly	Asn	Leu	Trp	Lys	Gln	Leu	Lys	Glu	Asp	Ala
			20					25					30		
Ser	His	Leu	His	Glu	Ile	Gly	Val	Thr	Ala	Val	Trp	Ile	Pro	Pro	Ala
		35				40					45				
Tyr	Lys	Ala	Asp	Glu	Gln	Gln	Asp	Glu	Gly	Tyr	Ala	Thr	Tyr	Asp	Leu
	50					55					60				
Tyr	Asp	Leu	Gly	Glu	Phe	Asp	Gln	Lys	Gly	Thr	Val	Arg	Thr	Lys	Tyr
65					70					75					80
Gly	Thr	Lys	Glu	Glu	Leu	Lys	Glu	Met	Ile	Asp	Glu	Leu	His	Lys	Asn
				85				90						95	
His	Ile	Ser	Val	Tyr	Leu	Asp	Val	Val	Leu	Asn	His	Lys	Ala	Gly	Gly
			100					105						110	
Asp	Phe	Thr	Glu	Lys	Phe	Ile	Val	Val	Glu	Val	Asp	Pro	Asn	Asp	Arg
		115					120						125		
Thr	Gln	Ala	Leu	Gly	Lys	Pro	Phe	Glu	Ile	Gln	Gly	Trp	Thr	Gly	Tyr
	130						135					140			
Ser	Phe	His	Gly	Arg	Lys	Asp	Lys	Tyr	Ser	Asp	Phe	Lys	Trp	His	Trp
145					150					155					160
Tyr	His	Phe	Ser	Gly	Thr	Gly	Phe	Asp	Asp	Ala	Lys	Lys	Arg	Ser	Gly
				165					170					175	
Ile	Phe	Gln	Ile	Gln	Gly	Glu	Gly	Lys	Ala	Trp	Ser	Glu	Gly	Val	Asp
			180					185						190	
Asn	Glu	Asn	Gly	Asn	Tyr	Asp	Phe	Leu	Leu	Cys	Asn	Asp	Ile	Asp	Leu
		195					200					205			
Asp	His	Pro	Glu	Val	Val	Thr	Glu	Leu	Asn	Arg	Trp	Gly	Lys	Trp	Val
	210					215						220			
Ser	Lys	Glu	Leu	Asn	Leu	Asp	Gly	Met	Arg	Leu	Asp	Ala	Ile	Lys	His
225					230					235					240
Met	Lys	Asp	Lys	Phe	Ile	Ala	Gln	Phe	Leu	Asp	Ala	Val	Arg	Ser	Glu
				245					250					255	
Arg	Gly	Asp	Lys	Phe	Tyr	Ala	Val	Gly	Glu	Tyr	Trp	Asn	Gly	Asp	Leu
			260					265					270		
Asn	Thr	Leu	Asp	Ala	Tyr	Ile	Lys	Ser	Val	Gly	His	Lys	Val	Asn	Leu
		275					280						285		
Phe	Asp	Val	Pro	Leu	His	Tyr	Asn	Leu	Phe	Gln	Ala	Ser	Gln	Glu	Gly
	290					295					300				
Lys	Asn	Tyr	Asp	Leu	Gln	Asn	Ile	Leu	Lys	Asn	Thr	Leu	Val	Glu	His
305					310					315					320
Tyr	Cys	Asp	Leu	Ala	Val	Thr	Phe	Val	Asp	Asn	His	Asp	Ser	Gln	Ser
				325					330					335	
Gly	Ser	Ser	Leu	Glu	Ser	Gln	Ile	Glu	Asp	Trp	Phe	Lys	Pro	Leu	Ala
			340					345					350		
Tyr	Gly	Leu	Ile	Leu	Leu	Met	Lys	Asp	Gly	Tyr	Pro	Cys	Leu	Phe	Tyr
		355				360						365			
Gly	Asp	Tyr	Tyr	Gly	Val	Lys	Gly	Glu	Asn	Ser	Pro	His	Thr	Gln	Ile
	370					375					380				
Ile	Asn	Ile	Leu	Leu	Asp	Thr	Arg	Arg	Lys	Tyr	Ala	Tyr	Gly	Asp	Gln
385					390					395					400
Ile	Glu	Tyr	Phe	Asp	His	Pro	Ser	Ala	Ile	Gly	Phe	Ile	Arg	Thr	Gly
				405					410					415	
Asp	Glu	Glu	His	Val	Gly	Ser	Gly	Leu	Val	Phe	Leu	Met	Ser	Asn	Asp
			420					425					430		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Glu Ala Gly Ser Lys Lys Met Asp Leu Gly Glu Glu His Lys Gly Glu
 435 440 445
 Ile Trp His Glu Ile Thr Gly Asn Ile Gln Gln Glu Ile Thr Leu Asp
 450 455 460
 Glu Lys Gly Ser Gly Glu Phe Ser Val Asn Thr Arg Asn Ile Ala Val
 465 470 475 480
 Trp Ile Lys Lys Asn
 485

<210> 5982
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 5982
 Met His Asn Phe Cys Phe Phe Arg Tyr Ala Lys Ile Pro Phe Pro Asp
 1 5 10 15
 Tyr Arg Arg Met Asn Val Arg Leu Leu Tyr Asp Glu Gln Asn Arg Asp
 20 25 30
 Phe Ser Val Ile Ile Ile Lys Gln Ile Thr Ile Phe Ala Pro Cys Lys
 35 40 45
 Arg Gly Leu Tyr Ile Tyr Gln Lys Lys Gly Lys Ile Met Glu Lys Phe
 50 55 60
 Glu Asp Leu Ile Gln Ser Gln Ser Pro Val Leu Val Asp Phe Phe Ala
 65 70 75 80
 Glu Trp Cys Gly Pro Cys Lys Ala Met Lys Pro Ile Leu Glu Asp Leu
 85 90 95
 Lys Gln Gln Val Gly Glu Lys Ala Arg Ile Val Lys Ile Asp Val Asp
 100 105 110
 Thr His Glu Glu Leu Ala Val Lys Tyr Arg Ile Gln Ala Val Pro Thr
 115 120 125
 Phe Ile Leu Phe Lys Lys Gly Glu Ala Val Trp Arg His Ser Gly Met
 130 135 140
 Ile Gln Ala Ser Glu Leu Lys Gly Val Ile Glu Gln Tyr Thr
 145 150 155

<210> 5983
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 5983
 Ile Met Asn Val Arg Cys Phe Leu Trp Gly Ile Leu Phe Ile Thr Val
 1 5 10 15
 Ser Ser Cys Ile Glu Ser Asp Arg Ile Met His Tyr Ala Gln Phe Glu
 20 25 30
 His Thr Ile Asn Leu Lys Ser Asp Arg Ile Gln Val Pro Ser Val Leu
 35 40 45
 Leu Tyr Pro Arg Ser Leu Val Leu Cys Asp Ser Asn Leu Ile Val Phe
 50 55 60
 Asn Glu Lys Met Asp Thr Met Phe Gln Cys Phe His Leu Pro Asp Leu
 65 70 75 80
 Thr Phe Gln Tyr Gly Phe Gly Thr Gln Gly Gln Gly Pro Asn Asp Phe
 85 90 95
 Val Leu Pro Ser Ile Thr Pro Val Lys Tyr Gln Lys Asn Gly Phe Val
 100 105 110
 Met Leu Asp Gly Ile Asn Leu Lys His Ile Ser Val Lys Lys Asp Lys
 115 120 125
 Ala Ile Val Gln Thr Ser Thr Leu Asn Tyr Gly Phe Asn Cys Phe Asn

130		135		140
Asp Leu Ile Ser Ile Ser Asp Ser Ser Tyr Cys Cys Asn Gly Gly Phe				
145		150		155
Glu Asn Glu Lys Glu Phe Arg Phe Leu Tyr Pro Asp Gly Asn His Glu				160
	165		170	
Ser Trp Gly Glu Tyr Pro Glu Thr Glu Arg Phe Gly Ser Val Leu				175
	180		185	190
Asp Arg Asn Gln Ala Tyr Ile Lys Met Thr Val Ala Lys Pro Asp Lys				
	195		200	205
Ser Cys Phe Val Ser Phe Tyr Gln His Ile Arg Arg Phe Arg Ile Tyr				
	210		215	220
Gly Lys Asp Gly Glu Leu Lys Arg Asp Val Ile Leu Asp Ile Leu Pro				240
225		230		235
Gly Gln Glu Arg Pro Glu Val Asp Asp Tyr Leu Arg Phe Ile His Pro				255
	245		250	
Ile Ser Val Tyr Ala Thr Asp Ser Tyr Ile Tyr Thr Leu Asn Leu Asp				
	260		265	270
Met Thr Thr Glu Glu Ile Glu Asn Arg Lys Thr Thr Pro Asn Ile Gln				
	275		280	285
Val Phe Asp Trp Glu Gly Lys Pro Leu Thr Gln Tyr Lys Leu Asp Cys				
	290		295	300
Phe Ile Asn Thr Phe Val Val Asp Glu Val Ala Asn Lys Ile Tyr Gly				320
305		310		315
Ala Phe Val Glu Asp Glu Asp His Ile Tyr Val Phe Asn Leu Pro Arg				335
	325		330	

Leu

<210> 5984

<211> 349

<212> PRT

<213> B.fragilis

<400> 5984

Lys Gly Cys Val Ser Cys Asn Ile Cys Asp Thr Ser Phe Cys Asn Phe				
1	5		10	15
Ile Lys Val Met His Lys Ile Ile Leu Tyr Ile Ile Ser Val Leu Thr				
	20		25	30
Val Phe Thr Ser Cys Thr Thr Thr Asp Val Pro Asp Lys Val Ser Leu				
	35		40	45
Gln Pro Gln Val Met Asn Asp Ser Leu Leu Thr Thr Met Pro Gly Asp				
	50		55	60
Leu Leu Leu Ile Asp Asp Tyr Leu Val Trp Ser Asp Pro Phe Ser Asp				
65		70		75
Asn Lys Phe Leu His Val His Arg Ser Ser Asp Gly Lys Tyr Ile Gly				80
	85		90	95
Ser Met Gly Gln Lys Gly Glu Gly Pro Gln Glu Phe Val Ser Pro Leu				
	100		105	110
Ile Asn Arg Phe Ser Ile Asn Arg Cys Ile Ala Ala His Asp Ala Asn				
	115		120	125
Gly Lys Thr Arg Gly Tyr Leu Ser Ile Asp Ser Leu Ile Val Gly Lys				
	130		135	140
Glu Pro Phe Met Ser Leu Ser Asp Phe Asp Arg Asn Ile Arg Met Ala				160
145		150		155
Lys Leu Asp Glu Gln Leu Tyr Leu Thr Glu Thr Glu Asn Gly Glu Asn				175
	165		170	
Asp Tyr Phe Lys Val Ser Ser Asn Gly Lys Lys Ser Thr Phe Gly Val				
	180		185	190
Tyr Pro Ile Arg Glu Val Lys His His Met Gly Thr Tyr Lys Thr Tyr				

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      195              200              205
Asp Lys Asp Arg Gly Leu Leu Ala Phe Gly Pro Phe Asn Phe Ser Tyr
  210              215              220
Leu Ala Leu Tyr Lys Lys Glu Gly Asp Asn Phe Lys Leu Leu Trp Glu
  225              230              235              240
Arg Met Pro Glu Lys Glu Asn Tyr Ser Val Val Asp Gly Ala Ile Arg
      245              250              255
Phe Asp Arg Ser Val Met Gly Val Arg Asp Ile Cys Met Thr Lys Asp
      260              265              270
Tyr Ile Val Thr Leu Glu Arg Asp Arg Glu Val Asp Pro Leu Asp Glu
      275              280              285
Arg Thr Val Gly Arg Asn Ala Ser Lys Cys Pro Arg Thr Val Phe Val
      290              295              300
Tyr Asp Tyr Asp Gly Lys Leu Leu Lys Ile Val Asn Leu Gly Met Pro
  305              310              315              320
Val Met Arg Ile Ala Ala Asp Gly Arg Ser Asn Ala Leu Tyr Val Ile
      325              330              335
Gly Val Asn Pro Asp Phe Ala Leu Ala Lys Tyr Asp Leu
      340              345

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<210> 5985

<211> 598

<212> PRT

<213> B.fragilis

<400> 5985

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Val Phe Phe Val Phe Leu Arg Lys Asn Leu Met Lys Met Asn Thr His
  1              5              10              15
Ser Leu Phe Gly Tyr Leu Phe Ile Ala Leu Phe Ser Leu Leu Val Val
      20              25              30
Ser Cys Tyr Ser Thr Pro Asp Gly Val Met Ser Ser Leu Ser Gln Ala
      35              40              45
Glu Lys Ile Met Glu Ser Arg Pro Asp Ser Ala Met Ala Ile Leu Gln
      50              55              60
His Ile Pro Thr Pro Glu Thr Leu His Gly Lys Ala Gln Ala Asp Tyr
      65              70              75              80
Ser Leu Leu Met Thr Gln Ala Met Asp Lys Asn Tyr Ile Asn Phe Thr
      85              90              95
Ser Asp Ser Leu Ile Lys Phe Ala Val Gly Tyr Tyr Gly Gly His Thr
      100              105              110
Glu Asp Leu Val Ala Lys Gly Lys Ser Phe Tyr Tyr Tyr Gly Arg Val
      115              120              125
Met Glu Ser Leu Asp Lys Val Glu Asp Ala Met Thr Phe Tyr Leu Lys
      130              135              140
Ala Lys Asp Val Leu Gln Ser Ser Asp Gln Phe Lys Leu Leu Gly Leu
      145              150              155              160
Ile Ser Glu Gly Ile Gly Thr Leu Asn Arg Lys Gln Lys Leu Phe Asp
      165              170              175
Thr Ala Leu Asn Ser Tyr Lys Glu Ser Leu Thr Tyr Tyr Ser Leu Val
      180              185              190
Pro Asp Ser Leu Cys Met Thr Tyr Ala Asn Arg Asn Ile Gly Arg Val
      195              200              205
Phe Leu Tyr Lys Asn Arg Leu Asp Ser Ala Tyr Tyr Tyr Tyr Asp Lys
      210              215              220
Ala Ile Tyr Ile Ser Asn Ala Asn Lys Tyr Val Ala Val Gly Ser Leu
      225              230              235              240
Leu Leu Glu Leu Gly Val Ile His Arg Ser Glu Lys Asp Tyr Ile Gly
      245              250              255
Ala Glu Arg Tyr Phe Leu Thr Phe Leu Glu Lys Glu Lys Thr Pro Asn

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260 265 270
 Lys Leu Tyr Ser Gly Tyr Leu Ala Leu Gly Asn Leu Tyr Leu Tyr Met
 275 280 285
 Asn Arg Phe Glu Asp Ala Glu His Phe Leu Met Leu Cys Leu Asp Ser
 290 295 300
 Pro Asp Pro Val Val Lys Arg Asp Ala Cys Glu Cys Leu Tyr Asp Leu
 305 310 315 320
 Glu Lys Glu Ser Asn Lys Phe Lys Glu Ala Val Ile Tyr Lys Asp Ile
 325 330 335
 Ala Asp Ser Leu Arg Met Met Thr Gln Asp Ile Asp Thr Gln Asn Ala
 340 345 350
 Ile Ala Asp Leu Gln Gly Arg Tyr Asn Asn Glu Lys Trp Gln Arg Glu
 355 360 365
 Ser Leu Gln Ser Ser Ile Glu Lys Lys Asn Ile Leu Leu Ile Ser Ser
 370 375 380
 Phe Val Gly Phe Ile Ala Val Met Val Ile Ile Tyr Ile Tyr Tyr Lys
 385 390 395 400
 Tyr Arg Thr Asn Gln Lys Leu Val Lys Asp Ile Asn Glu Arg Ile Arg
 405 410 415
 Lys Asn Asp Val Asp Ile Lys Met Tyr Gln Arg Gln Ile Leu Asn Tyr
 420 425 430
 Gln Asp Leu Gln Lys Glu Thr Leu Gln Asp Tyr Arg Asn Gln Ile Gly
 435 440 445
 Glu Leu His Gly Lys Met Ser Val Leu Glu Asp Gln Asn Lys Ala Leu
 450 455 460
 Ser Leu Arg Leu Thr Glu Lys Lys His Asp Ile Pro Glu Ser Glu Ala
 465 470 475 480
 Asp Asp Leu Tyr Ala Ile Tyr Met Gln Ala Leu His Ile Leu Ile Met
 485 490 495
 Leu Arg Gly Lys Asn Ile Glu Asn Thr Ser Gly Gln Lys Leu Leu Leu
 500 505 510
 Asp Ala Asp Trp Asp Lys Leu Phe His Leu Ser Asn Ala Ile His Gly
 515 520 525
 Asp Phe Ile Thr Arg Ile Lys Asn Asp Phe Pro Thr Leu Thr Lys His
 530 535 540
 Asp Ile Glu Ile Cys Cys Leu Leu Arg Phe Gly Ile Glu His Glu Val
 545 550 555 560
 Leu Gly Ser Ile Phe Leu Thr Glu Thr Asp Ser Val Thr Lys Ala Lys
 565 570 575
 Arg Arg Met Lys Lys Arg Leu Asn Leu Ser Ala Ser Asp Asp Leu Asp
 580 585 590
 Val Phe Leu Leu Lys Tyr
 595

<210> 5986

<211> 103

<212> PRT

<213> B.fragilis

<400> 5986

Asn Asn Asn Val Met Val Lys His Ile Val Leu Phe Lys Leu Arg Asp
 1 5 10 15
 Asp Val Pro Val Glu Glu Lys Leu Val Val Met Asn Ser Phe Lys Glu
 20 25 30
 Ala Ile Glu Ala Leu Pro Ala Lys Ile Ser Val Ile Arg Lys Ile Glu
 35 40 45
 Val Gly Leu Asn Met Asn Pro Gly Glu Thr Trp Asn Ile Ala Leu Tyr
 50 55 60
 Ser Glu Phe Asp Asn Leu Asp Asp Val Lys Phe Tyr Ala Thr His Pro

65		70		75		80									
Glu	His	Val	Ala	Ala	Gly	Lys	Ile	Leu	Ala	Glu	Thr	Lys	Glu	Ser	Arg
			85					90						95	
Ala	Cys	Val	Asp	Tyr	Glu	Phe									
			100												

<210> 5987
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 5987
 Arg Asn Val Phe Gly Arg Gly Phe Tyr Ile Gly Gln Glu Phe Ile Ala
 1 5 10 15
 Tyr Gln Met Leu Lys Leu Arg Lys Asn Phe Ile Asp Asn Gln Lys Arg
 20 25 30
 Gln Gly Thr Pro Phe Glu Arg Lys Cys Thr Leu Ser Phe Tyr Tyr Ser
 35 40 45
 Ser Thr Ile Ser Ser Ser Leu Met Met Cys Glu Ala Pro Ala Tyr Leu
 50 55 60
 Ser Ile Ile Asn Arg Val
 65 70

<210> 5988
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 5988
 Val Ser Ala Phe Thr Tyr Cys Glu Leu Glu Phe Ile Ser Leu Gln Thr
 1 5 10 15
 Leu Lys Asn Arg Phe Met Lys Gln Leu Lys Leu Met Val Leu Thr Leu
 20 25 30
 Thr Leu Leu Met Gly Thr Met Phe Thr Ser Cys Met Asp Ser Gly Glu
 35 40 45
 Ser Gly Pro Gln Gln Trp Ala Gly Val Val Lys Val Asn Asp Arg Met
 50 55 60
 Gly Tyr Val Thr Phe Thr Asp Ala Ala Gly Thr Glu Leu Ile Pro Thr
 65 70 75 80
 Asn Thr Ile Pro Val Thr Leu Asn Ala Arg Met Ala Tyr Ile Tyr Cys
 85 90 95
 Gln Val Asp Glu Gly Gln Asp Leu Ser Thr Asn Pro Lys Ser Ile Lys
 100 105 110
 Ile Thr Leu Leu Ala Asp Pro Thr Gly Ile Asp Ala Thr Ala Ile Thr
 115 120 125
 Thr Pro Lys Val Glu Ser Ser Asp Val Thr Thr Asn Ala Pro Val Gly
 130 135 140
 Ser Leu Ser Phe Ala Ser Gly Tyr Ser Thr Val Ala Pro Phe Gln Phe
 145 150 155 160
 Ser Glu Asn Thr Ile Val Leu Pro Val Leu Tyr Arg Val Lys Asn Val
 165 170 175
 Thr Thr Thr Glu Asp Ile Lys Asn Glu Leu Ala Lys His Thr Phe Thr
 180 185 190
 Leu Val Cys Tyr Thr Asp Asp Ile Lys Ser Gly Asp Thr Ile Leu Lys
 195 200 205
 Leu Tyr Leu Arg Tyr Lys Val Glu Asp Glu Pro Ala Ala Ile Ala Glu
 210 215 220
 Arg Ala Thr Arg Thr Ser Ser Phe Lys Ala Tyr Glu Ile Ser Gln Ile
 225 230 235 240

Leu Arg Glu Tyr Thr Leu Lys Ser Gly Gln Thr Lys Pro Ala Lys Ile
 245 250 255
 Thr Ile Val Ala Gln Gln Asn Glu Tyr Asn Asn Lys Leu Glu Asp Thr
 260 265 270
 Ser Thr Ile Glu Lys Val Tyr Glu Ile Glu Tyr Lys Thr Ala Glu
 275 280 285

<210> 5989
 <211> 130
 <212> PRT
 <213> B.fragilis

<400> 5989
 Asn Met Lys Leu Arg Val Ile Leu Ser Leu Ile Val Val Leu Phe Ile
 1 5 10 15
 Gly Gln Ser Met Cys Ala Met Ser Thr Gln Ile Leu Arg Arg Pro Ile
 20 25 30
 Ile Leu Asp Gly Glu Ile Ile Glu Glu Glu Ala Ser Arg Ser Ile Asn
 35 40 45
 Pro Leu Ile Pro Ile Ser Ala Asp Ile Asp Gly Thr Thr Leu Phe Ile
 50 55 60
 Glu Phe Thr Lys Val Ile Gly Asn Val Asp Ile Thr Val Lys Asp Asp
 65 70 75 80
 Thr Lys Lys Glu Val Tyr Ser Ser Ser Val Asp Val Thr Ala Ala Asn
 85 90 95
 Gln Ala Thr Ser Phe Ser Ile Ala Asp Leu Ala Pro Gly Thr Tyr Leu
 100 105 110
 Leu Glu Phe Thr Asn Ser Asn Gly Gly Tyr Val Tyr Gly Gln Phe Ile
 115 120 125
 Val Glu
 130

<210> 5990
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 5990
 Met Met Ala Ser Met Leu Leu Lys Ala Leu Ser Ser Ile Ser Ile Ser
 1 5 10 15
 Leu Met Ala Leu Pro Thr Pro Gly Ile Ile Glu Ala Ser Ser Phe Arg
 20 25 30
 Leu Pro Ile Phe Leu Ile Trp Asp Ile Trp Leu Arg Lys Ser Leu Lys
 35 40 45
 Ser Asn Trp Phe Leu Ala Ile Phe Phe Trp Arg Arg Leu Ala Ser Ser
 50 55 60
 Ser Ser Tyr Cys Ser Cys Ala Arg Ser Thr Asn Glu Thr Met Ser Pro
 65 70 75 80
 Ile Pro Arg Ile Arg Ser Ala Ile Arg Ala Gly Trp Asn Trp Ser Met
 85 90 95
 Ala Ser Ser Phe Ser Pro Val Pro Thr Asn Leu Ile Gly Leu Phe Thr
 100 105 110
 Thr Glu Arg Ile Glu Arg Ala Ala Pro Pro Arg Val Ser Pro Ser Ser
 115 120 125
 Leu Val Ser Thr Thr Pro Ser Lys Ser Arg Arg Ser Leu Asn Ser Leu
 130 135 140
 Ala Val Leu Thr Ala Ser Cys Pro Val Ile Glu Ser Thr Thr Asn Arg
 145 150 155 160
 Ile Ser Leu Gly Trp Met Ala Ser Leu Met Ala Ala Ile Ser Phe Ile

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<210> 5991
<211> 78
<212> PRT
<213> B.fragilis
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<210> 5992
<211> 382
<212> PRT
<213> B.fragilis
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<400> 5992															
Tyr	Ser	Ser	Leu	Asn	Lys	Arg	Ile	Met	Ile	Lys	Arg	Ile	Lys	Ile	Leu
1				5					10					15	
Ala	Thr	Gly	Ala	Leu	Leu	Leu	Ala	Gly	Leu	Gly	Ala	Cys	Ser	Pro	Ser
			20					25					30		
Gly	Lys	Lys	Thr	Gly	Ala	Asp	Ser	Thr	Val	Asp	Thr	Leu	Arg	Thr	Ala
		35				40						45			
Glu	Thr	Val	Asn	Leu	Leu	Asn	Asn	Leu	Arg	Lys	Val	Pro	Thr	Gln	Gly
	50					55					60				
Ile	Met	Phe	Gly	His	His	Asp	Asp	Pro	Leu	Tyr	Gly	Val	Gly	Trp	Glu
65				70						75					80
Gly	Asp	Glu	Asp	Arg	Ser	Asp	Val	Lys	Ser	Val	Cys	Gly	Asp	Tyr	Pro
			85						90					95	
Ala	Val	Met	Ser	Phe	Asp	Leu	Gly	His	Ile	Glu	Leu	Glu	Arg	Glu	Lys
			100					105					110		
Ser	Leu	Asp	Asn	Val	Pro	Phe	Arg	Lys	Ile	Arg	Gln	Glu	Thr	Ile	Asn
		115					120					125			
Gln	Tyr	Lys	Arg	Gly	Gly	Val	Val	Ser	Phe	Ser	Trp	His	Leu	Asp	Asn
	130					135					140				
Pro	Leu	Thr	Gly	Lys	Asp	Ala	Trp	Asp	Val	Ser	Asp	Thr	Thr	Val	Val
145				150						155				160	
Ala	Ser	Ile	Leu	Pro	Gly	Gly	Val	His	His	Ala	Lys	Phe	Ile	Ser	Trp
				165				170					175		
Leu	Asp	Ala	Val	Ala	Ala	Phe	Met	Asn	Thr	Leu	Glu	Thr	Glu	Glu	Gly
		180						185					190		
Thr	Lys	Ile	Pro	Val	Ile	Phe	Arg	Pro	Trp	His	Glu	His	Thr	Gly	Ser
	195						200					205			

Trp Phe Trp Trp Gly Gln Asn Leu Cys Thr Ala Asp Gln Tyr Lys Ala
 210 215 220
 Leu Trp Arg Met Thr His Asp Arg Met His Ala Arg Gly Val Lys Asn
 225 230 235 240
 Leu Leu Tyr Ala Tyr Ser Pro Gly Ser Glu Pro Lys Asp Ser Thr Ala
 245 250 255
 Tyr Leu Glu Arg Tyr Pro Gly Asp Asp Ile Ile Asp Leu Val Gly Phe
 260 265 270
 Asp Thr Tyr Gln Phe Asp Arg Thr Gln Tyr Met Glu Gln Leu Asp Lys
 275 280 285
 Ser Leu Ala Ile Leu Thr Glu Val Gly Lys Ala His Asp Lys Pro Ile
 290 295 300
 Ala Ile Thr Glu Thr Gly Phe Glu Ala Ile Pro Asp Ser Val Trp Trp
 305 310 315 320
 Thr Gln Thr Leu Tyr Pro Val Ile Ser Lys Tyr Pro Ile Ser Tyr Val
 325 330 335
 Leu Val Trp Arg Asn Ala Arg Glu Arg Val Asn His Tyr Tyr Ala Pro
 340 345 350
 Tyr Pro Gly Gln Val Ser Ala Asp Asp Phe Val Lys Phe Tyr Arg Glu
 355 360 365
 Pro Lys Thr Leu Phe Val Ser Asp Val Lys Asn Leu Tyr Lys
 370 375 380

<210> 5993

<211> 519

<212> PRT

<213> B.fragilis

<400> 5993

Ser Gln Arg Pro Leu Ala Thr Ile Val Asp Arg Pro Asp His Leu Ser
 1 5 10 15
 Asp Ser Pro Val Cys Arg Arg Arg Met Ser Val Gln Tyr Val Cys Thr
 20 25 30
 His Pro Cys Gly Arg Arg Ala Lys Thr Ala Pro Leu Ala Asp Phe Tyr
 35 40 45
 Leu Pro Ala Asp Leu Arg Asn Pro Phe Pro Arg Asn Ser Ile Phe Tyr
 50 55 60
 Arg Arg Phe Leu Asn Lys Gln Val Met Thr Lys Lys Asn Leu Leu Lys
 65 70 75 80
 Gly Ile Cys Leu Leu Trp Leu Leu Leu Ala Val Thr Pro Val Leu Gln
 85 90 95
 Ala Gln Asp Arg Ala Gln Gln Ala Ser Glu Leu Leu Asp Arg Leu Ile
 100 105 110
 Ala Gly Gln Gly Asp Ser Val Tyr Val His Leu Asp Asp Asn Ile Arg
 115 120 125
 Lys Met Leu Ser Val Glu Met Leu Asn Gly Leu Phe Lys Gln Leu Glu
 130 135 140
 Gln Gln Ala Gly Lys Tyr Gln Ser His Gly Glu Trp Asn Thr Glu Pro
 145 150 155 160
 Ile Asn Gly Met Thr Ile Tyr Tyr Cys Asp Val Lys Phe Glu Arg Leu
 165 170 175
 Pro Leu Arg Phe Leu Thr Ala Phe Asn Pro Asp Gly Lys Val Asn Thr
 180 185 190
 Ile Arg Phe Val Pro Val Pro Ala Glu Lys Thr Thr Pro Pro Thr Thr
 195 200 205
 Ser Val Gln Asp Lys Ile Lys Glu Thr Asp Ile Gln Val Cys Thr Gly
 210 215 220
 Asn Phe Lys Leu Pro Gly Thr Leu Thr Leu Pro Lys Asn Gly Lys Asp
 225 230 235 240

Leu Pro Val Val Ile Leu Val His Gly Ser Gly Ala Ser Asp Arg Asp
 245 250 255
 Glu Thr Val Gly Ala Asn Lys Pro Phe Arg Asp Leu Ala Tyr Gly Leu
 260 265 270
 Ala Glu Arg Gly Ile Ala Val Ile Arg Tyr Asp Lys Arg Thr Lys Val
 275 280 285
 Tyr Gly Ala Asp Ser Ala Pro Ala Gly Lys Glu Ile Thr Phe Asp Glu
 290 295 300
 Glu Ser Val Asp Asp Ala Leu Ser Ala Ile Lys Leu Ala Arg Ser Ile
 305 310 315 320
 Pro Thr Ile Asn Pro Glu Arg Ile Tyr Ile Leu Gly His Ser Leu Gly
 325 330 335
 Gly Thr Leu Ala Pro Arg Ile Ala Gln Arg Ser Asp Lys Val Pro Ala
 340 345 350
 Gly Ile Ile Leu Leu Ala Gly Ala Ala Arg Pro Leu Glu Asp Leu Phe
 355 360 365
 Ile Ser Gln Val Lys Phe Leu Ala Ser Ala Leu Pro Ser Ala Lys Asp
 370 375 380
 Ile Glu Lys Glu Ile Ala Glu Leu Gln Lys Gln Val Asp Asn Val Lys
 385 390 395 400
 Arg Leu Gly Thr Asp Thr Phe Asp Ile Thr Thr Pro Leu Pro Met Asn
 405 410 415
 Leu Ser Gln Ala Tyr Trp Met Leu Ala Asn Gln Tyr Lys Pro Leu Glu
 420 425 430
 Val Val Arg Lys Leu Thr Leu Pro Ile Leu Val Leu Gln Gly Glu Arg
 435 440 445
 Asp Tyr Gln Val Thr Met Gln Asp Phe Glu Leu Trp Gln Ser Ala Leu
 450 455 460
 Ala Lys His Pro Asn Ala Ile Phe Lys Ser Tyr Pro Arg Leu Asn His
 465 470 475 480
 Leu Phe Gln Glu Gly Glu Gly Lys Ser Thr Pro Leu Glu Tyr Ser Arg
 485 490 495
 Pro Ser Ser Ile Pro Ser Tyr Val Thr Asp Asp Ile Ala Ala Phe Ile
 500 505 510
 Asn Arg Pro Lys Pro Gly Asn
 515

<210> 5994

<211> 522

<212> PRT

<213> B.fragilis

<400> 5994

Tyr Ile Ile Thr Met Asn Lys Lys Ile Ile Ile Pro Leu Ala Leu Ala
 1 5 10 15
 Pro Leu Ala Ala Pro Ala Leu Gln Ala Gln His Gln Gln Pro Asn Gly
 20 25 30
 Arg Thr Asp Thr Arg Pro Asn Ile Ile Leu Phe Met Val Asp Asp Met
 35 40 45
 Gly Trp Gln Asp Thr Ser Leu Pro Phe Trp Thr Gln Lys Thr His Tyr
 50 55 60
 Asn Glu Val Tyr Glu Thr Pro Asn Met Glu Arg Leu Ala Lys Gln Gly
 65 70 75 80
 Met Met Phe Thr Gln Ala Tyr Ala Ser Ser Ile Ser Ser Pro Thr Arg
 85 90 95
 Cys Ser Leu Ile Thr Gly Thr Asn Ala Ala Arg His Arg Val Thr Asn
 100 105 110
 Trp Thr Tyr Pro Lys Gly Gln Gln Thr Asp Arg Pro Ser Asp Val Phe
 115 120 125

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Asn Val Ala Asp Trp Asn Val Asn Gly Val Cys Gln Val Pro Asn Ile
 130          135          140
Asp His Thr Phe Gln Ala Thr Ser Leu Ala Glu Ile Leu Lys Asp Asn
 145          150          155          160
Gly Tyr His Thr Ile His Cys Gly Lys Ala His Phe Gly Ala Val Asn
          165          170          175
Thr Pro Gly Glu Ser Pro Tyr His Met Gly Phe Glu Val Asn Ile Ala
          180          185          190
Gly His Ala Gly Gly Gly Leu Ala Ser Tyr Leu Gly Glu Asn Asn Tyr
          195          200          205
Gly Asn Arg Thr Asp Gly Lys Pro Asn Pro Trp Phe Ala Val Pro Gly
 210          215          220
Leu Glu Lys Tyr Trp Gly Thr Asp Thr Phe Val Ser Glu Ala Leu Thr
 225          230          235          240
Leu Glu Ala Ile Lys Ala Leu Asp His Ala Lys Glu Tyr Asn Gln Pro
          245          250          255
Phe Phe Leu Tyr Met Ala His Tyr Ala Ile His Val Pro Ile Asp Lys
          260          265          270
Asp Lys Arg Phe Tyr Gln Lys Tyr Ile Asn Lys Gly Leu Thr Pro Lys
          275          280          285
Glu Ala Ala Tyr Ala Ala Leu Ile Glu Gly Met Asp Lys Ser Leu Gly
 290          295          300
Asp Leu Met Asp Trp Leu Asp Lys Asn Gly Glu Ala Asp Asn Thr Ile
 305          310          315          320
Val Ile Phe Met Ser Asp Asn Gly Gly Leu Ser Ser Glu Pro Glu Trp
          325          330          335
Arg Asp Gly Lys Leu His Thr Gln Asn Ser Pro Leu Asn Ser Gly Lys
          340          345          350
Gly Ser Ala Tyr Glu Gly Gly Val Arg Glu Pro Met Ile Val Arg Trp
          355          360          365
Pro Gly Val Val Lys Pro Asp Thr Lys Cys Asp Lys Tyr Leu Ile Ile
 370          375          380
Glu Asp Phe Tyr Pro Thr Ile Leu Glu Met Ala Gln Ile Lys His Tyr
 385          390          395          400
Lys Thr Val Gln Pro Ile Asp Gly Ile Ser Phe Met Pro Leu Leu Thr
          405          410          415
His Thr Gly Asp Pro Ser Lys Gly Arg Ser Leu His Trp Asn Phe Pro
          420          425          430
Asn His Trp Gly Asn Asp Gly Pro Gly Ile Gly Pro Thr Cys Thr Val
 435          440          445
Arg Lys Gly Asp Trp Lys Leu Ile Tyr Tyr Tyr Asp Ser Gly Lys Lys
 450          455          460
Glu Leu Phe Asn Ile Pro Glu Asp Ile Gly Glu Lys Asn Asp Leu Ala
 465          470          475          480
Ala Leu His Pro Asp Ile Val Lys Ser Leu Ser Lys Glu Leu Gly Asp
          485          490          495
Tyr Leu Arg Lys Val Gly Gly Gln Arg Pro Ser Phe Lys Ala Thr Gly
          500          505          510
Lys Pro Cys Pro Trp Pro Asp Glu Ile Lys
          515          520

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<210> 5995

<211> 106

<212> PRT

<213> B.fragilis

<400> 5995

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Lys Arg Ile Thr Asn Gly Cys Ser Cys Gly Lys Leu His Gly Tyr Pro
1          5          10          15

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Phe Leu Ile Pro Gln Tyr Ala Ile Glu Pro Gln Phe Ala Ile Thr Met
 20 25 30
 Lys Ile Ile Ile Ala Gly Ala Gly Ala Val Gly Thr His Leu Ala Lys
 35 40 45
 Leu Leu Ser Arg Glu Lys Gln Asp Ile Ile Leu Met Asp Asp Asp Glu
 50 55 60
 Glu Lys Leu Ser Thr Phe Ser Ser Asn Phe Asp Leu Met Thr Val Thr
 65 70 75 80
 Ala Ser Pro Ser Ser Ile Ser Gly Leu Lys Glu Val Gly Ile Lys Glu
 85 90 95
 Ala Asp Leu Phe Ile Ser Gly His Ser Arg
 100 105

<210> 5996

<211> 469

<212> PRT

<213> B.fragilis

<400> 5996

Asn Lys Lys Thr Lys Asn Arg Met Thr Ala Met Ile Thr Leu Lys Glu
 1 5 10 15
 Lys Ile Gly Tyr Gly Leu Gly Asp Met Ala Ser Ser Met Phe Trp Lys
 20 25 30
 Leu Phe Gly Ser Tyr Leu Met Ile Phe Tyr Thr Asp Val Phe Gly Leu
 35 40 45
 Pro Ala Ala Val Val Gly Thr Met Phe Leu Ile Thr Arg Val Trp Asp
 50 55 60
 Ser Ala Phe Asp Pro Ile Val Gly Val Ile Ala Asp Arg Thr Gln Thr
 65 70 75 80
 Arg Trp Gly Lys Phe Arg Pro Tyr Leu Leu Tyr Leu Ala Val Pro Phe
 85 90 95
 Ala Leu Ile Gly Ile Phe Thr Phe Thr Thr Pro Glu Leu Asn Asp Thr
 100 105 110
 Gly Lys Leu Val Tyr Ala Tyr Ile Thr Tyr Ser Leu Met Met Met Val
 115 120 125
 Tyr Ser Ala Ile Asn Val Pro Tyr Ala Ser Leu Leu Gly Val Ile Ser
 130 135 140
 Pro Asp Pro Lys Glu Arg Asn Thr Leu Ser Thr Tyr Arg Met Thr Phe
 145 150 155 160
 Ala Tyr Ile Gly Ser Phe Ile Ala Leu Leu Phe Met Pro Met Val
 165 170 175
 Asn Leu Phe Gly Gly Ala Glu Asp Glu Gln Arg Gly Trp Met Leu Ser
 180 185 190
 Val Val Val Ile Ala Val Met Cys Ala Ala Leu Phe Tyr Leu Cys Phe
 195 200 205
 Ala Leu Thr Arg Glu Arg Val Lys Pro Ile Arg Glu Val Gln Asn Ser
 210 215 220
 Leu Lys Asp Asp Leu Lys Asp Leu Leu His Asn Arg Pro Trp Trp Ile
 225 230 235 240
 Leu Leu Gly Ala Gly Val Ala Ala Leu Val Phe Asn Ser Ile Arg Asp
 245 250 255
 Gly Ala Thr Val Tyr Tyr Phe Lys Tyr Phe Val Val Glu Glu Asp Tyr
 260 265 270
 Ser Thr Val Ser Phe Phe Gly Val Ser Phe Val Leu Ser Gly Leu Tyr
 275 280 285
 Leu Ala Val Gly Gln Ala Ala Asn Ile Val Gly Val Ile Leu Ala Ala
 290 295 300
 Pro Val Ser Asn Arg Ile Gly Lys Lys Asn Thr Tyr Met Gly Ala Met
 305 310 315 320

Ser Leu Ala Thr Leu Leu Ser Val Ile Phe Tyr Trp Phe Gly Lys Gly
 325 330 335
 Asp Ile Thr Leu Ile Phe Val Phe Gln Val Leu Ile Ser Ile Cys Ala
 340 345 350
 Gly Ser Ile Phe Pro Leu Leu Trp Ser Met Tyr Ala Asp Cys Ala Asp
 355 360 365
 Tyr Ser Glu Leu Lys Thr Gly Asn Arg Ala Thr Gly Leu Ile Phe Ser
 370 375 380
 Ser Ser Ser Met Ser Gln Lys Phe Gly Trp Ala Ile Gly Ser Ala Leu
 385 390 395 400
 Thr Gly Trp Leu Leu Ala Tyr Phe Gly Phe Arg Ala Asn Glu Val Gln
 405 410 415
 Ser Val Glu Ala Ile His Gly Ile Lys Met Phe Leu Ser Trp Leu Pro
 420 425 430
 Ala Val Gly Thr Val Leu Ser Val Val Phe Ile Ser Met Tyr Pro Leu
 435 440 445
 Ser Glu Lys Lys Met Arg Glu Val Thr Ser Glu Leu Glu Lys Arg Arg
 450 455 460
 Lys Ala Ile Gln Ser
 465

<210> 5997

<211> 664

<212> PRT

<213> B.fragilis

<400> 5997

Lys Ala Arg Thr Met Lys Lys Asn Leu Leu Tyr Ile Phe Ser Leu Ala
 1 5 10 15
 Ser Val Leu Cys Ser Cys Asn Asp Phe Leu Asp Lys Glu Pro Leu Asp
 20 25 30
 Ala Val Pro Thr Asp Lys Tyr Leu Leu Ala Glu Ser Asp Leu Ala Ala
 35 40 45
 Tyr Ser Ala Asn Leu Tyr Asp Gln Leu Pro Ser His Thr Pro Gly Gln
 50 55 60
 Tyr Ser Met Gly Val Phe Ala Thr Asp Asn Asn Ser Asp Asn Gln Ala
 65 70 75 80
 Ala Ser Asn Pro Asn Gly Ser Phe Val Lys Gly Glu Thr Arg Val Ala
 85 90 95
 Gln Ser Gly Gly Ala Trp Asp Phe Gly Lys Ile Arg Asn Val Asn Tyr
 100 105 110
 Phe Ile Asn Lys Val Arg Pro Arg Leu Glu Ala Gly Glu Leu Ser Gly
 115 120 125
 Val Glu Ala Asn Asn Met His Tyr Leu Gly Glu Met Tyr Phe Phe Arg
 130 135 140
 Ala Tyr Ile Tyr Phe Thr Lys Leu Val Ala Leu Gly Asp Phe Pro Ile
 145 150 155 160
 Leu Lys His Trp Ile Ser Glu Asp Tyr Glu Thr Val Arg Glu Ala Ser
 165 170 175
 Lys Arg Arg Pro Arg Asn Glu Val Ala Arg Phe Ile Ile Gln Asp Leu
 180 185 190
 Asp Ser Ala Tyr Tyr Tyr Met Lys Ala Thr Pro Pro Met Ser Asn Arg
 195 200 205
 Leu Thr Lys Asp Cys Ala Ala Leu Met Lys Ser Arg Val Ala Leu Phe
 210 215 220
 Glu Gly Thr Trp Glu Lys Tyr His Lys Gly Thr Ala Arg Val Pro Gly
 225 230 235 240
 Gly Pro Gly Trp Pro Gly Ala Asn Lys Asp Tyr Leu Lys Asp Phe Thr
 245 250 255

Ile Asn Ile Asp Ser Glu Ile Lys Tyr Phe Leu Thr Glu Ala Lys Thr
 260 265 270
 Ala Ala Gln Ile Val Ala Asp Lys Tyr Thr Leu Phe Asn Asp Tyr Pro
 275 280 285
 Ser Leu Phe Asn Ser Gln Ser Leu Ala Asn Ala Ser Glu Val Leu Leu
 290 295 300
 Trp Arg Ala Tyr Asp Ala Ser Leu Thr Pro Ala Val Asn His Phe Val
 305 310 315 320
 Val Gly Tyr Ile Gln Arg Asn Gly Gly Gly Asn Thr Gly Trp Thr Arg
 325 330 335
 Ser Met Met Gln Ser Tyr Leu Met Glu Asn Gly Leu Pro Ile Tyr Ala
 340 345 350
 Asn Asn Ser Gly Tyr Gln Gly Asp Lys Thr Tyr Glu Ala Val Ala Thr
 355 360 365
 Asn Arg Asp Pro Arg Leu Ile Tyr Asn Thr Leu Leu Pro Gly Asp Leu
 370 375 380
 Leu Ser Glu Gly Gly Ser Asn Ile Glu Tyr Leu Val Lys Gly Tyr Gly
 385 390 395 400
 Tyr Tyr Tyr Arg Ala Pro Ile Val Leu Gly Gln Asp Glu Asn Lys Cys
 405 410 415
 Pro Thr Gly Tyr Ser Val Lys Lys Gly Leu Ala Thr Asp Ala Ala Gln
 420 425 430
 Gly Pro Thr Leu Pro Ser Thr Thr Ala Cys Val Ile Phe Arg Ala Ala
 435 440 445
 Glu Ala Tyr Leu Asn Tyr Met Glu Ala Asp Tyr Glu Leu Asn Asn Ser
 450 455 460
 Leu Asp Ala Asn Ser Ser Lys Tyr Trp Lys Ala Leu Arg Asn Arg Ala
 465 470 475 480
 Gly Met Asp Thr Asp Phe Gln Lys Thr Ile Asp Ala Thr Asp Leu Ser
 485 490 495
 Lys Glu Ile Asp Phe Ala Arg Tyr Ser Gly Ser Glu Phe Val Ser Thr
 500 505 510
 Thr Leu Tyr Asn Ile Arg Arg Glu Arg Arg Ile Glu Phe Ala Ala Glu
 515 520 525
 Gly Leu Arg Leu Asn Asp Leu Lys Arg Trp Arg Ala Leu Asp Met Met
 530 535 540
 Gln Gly Tyr His Val Glu Gly Phe Asp Leu Trp Ser Glu Asn Tyr Gln
 545 550 555 560
 Arg Tyr Lys Thr Pro Ser Pro Ile Pro Val Ala Asp Val Thr Leu Ser
 565 570 575
 Val Ile Asn Leu Ile Glu Ser Gly Asn Asn Asn Ala Asn Val Ser Ala
 580 585 590
 Lys Ser Glu Ser Arg Tyr Leu Arg Pro Tyr Arg Ile Asn Thr Asn Asn
 595 600 605
 Ile Ala Tyr Asn Gly Tyr Asn Trp Asn Gln Asn Lys Tyr Leu Asn Pro
 610 615 620
 Ile Ala Phe Asp His Phe Arg Leu Thr Thr Ala Glu Glu Gly Ser Thr
 625 630 635 640
 Asp Tyr Thr Thr Ser Thr Ile Tyr Gln Asn Pro Gly Trp Lys Ile Glu
 645 650 655
 Thr Ser Ser Leu Pro Glu Gly Asp
 660

<210> 5998

<211> 216

<212> PRT

<213> B.fragilis

<400> 5998

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Met Ile Lys Ala Met Asn Asn Leu Asn Glu Leu Tyr Glu Ala Ile Leu
1      5      10      15
Ala Gly Lys Leu Glu Gln Ala Val Ser Val Thr Arg Glu Ala Val Ala
20      25      30
Gly Gly Ala Ala Pro Gln Glu Ile Asn Glu Tyr Met Ile Lys Ala
35      40      45
Met Glu Ala Ile Gly Ala Arg Phe Glu Ser Gly Gln Val Phe Val Pro
50      55      60
Asn Leu Leu Met Ser Ala Arg Ala Met Arg Gly Ala Leu Asp Ile Leu
65      70      75      80
Lys Pro Leu Met Gln Gly Gln Val Asn Ser Tyr Ile Gly Arg Ile Val
85      90      95
Ile Gly Thr Val Lys Gly Asp Leu His Asp Ile Gly Lys Asn Leu Val
100     105     110
Ala Ser Met Phe Glu Gly Cys Gly Phe Glu Val Ile Asn Leu Gly Val
115     120     125
Asp Val Ser Ser Asp Lys Phe Ile Ser Ala Ala Leu Glu Asn Lys Ala
130     135     140
Asp Ile Ile Cys Met Ser Ala Leu Leu Thr Thr Thr Met Asn Tyr Met
145     150     155     160
Lys Glu Val Ile Asp Ala Leu Glu Thr Ser Gly Leu Arg Gly Lys Val
165     170     175
Lys Val Met Val Gly Gly Ala Pro Val Ser Asp Ala Phe Ala Lys Ser
180     185     190
Ile Gly Ala Asp Ala Tyr Thr Ser Asn Ala Asn Ala Ala Val Ile Met
195     200     205
Ala Lys Lys Leu Ile Asn Ala Cys
210     215

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<210> 5999

<211> 637

<212> PRT

<213> B.fragilis

<400> 5999

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Ile Met Glu Tyr Thr Ile Leu Ile Leu Leu Leu Pro Phe Leu Ser Phe
1      5      10      15
Leu Ala Leu Gly Ile Gly Gly Lys Trp Met Ser His Arg Thr Ala Gly
20      25      30
Thr Ile Gly Thr Leu Val Leu Ala Ala Val Thr Val Leu Ser Tyr Val
35      40      45
Thr Ala Val His Tyr Phe Ser Ala Pro Arg Leu Ala Asp Gly Thr Phe
50      55      60
Ala Thr Leu Ile Pro Tyr Asn Phe Glu Trp Leu Pro Phe Thr Glu Thr
65      70      75      80
Leu Thr Phe Asn Leu Gly Ile Leu Leu Asp Pro Ile Ser Val Met Met
85      90      95
Leu Ile Val Ile Ser Thr Val Ser Leu Met Val His Ile Tyr Ser Phe
100     105     110
Gly Tyr Met Lys Gly Glu Arg Gly Phe Gln Arg Tyr Tyr Ala Phe Leu
115     120     125
Ser Leu Phe Thr Met Ser Met Leu Gly Leu Val Val Ala Thr Asn Ile
130     135     140
Phe Gln Met Tyr Leu Phe Trp Glu Leu Val Gly Val Ser Ser Tyr Leu
145     150     155     160
Leu Ile Gly Phe Tyr Thr Arg Pro Ala Ala Ile Ala Ala Ser Lys
165     170     175
Lys Ala Phe Ile Val Thr Arg Phe Ala Asp Leu Gly Phe Leu Ile Gly
180     185     190

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Ile Leu Ile Tyr Gly Tyr Tyr Gly Gly Thr Phe Gly Phe Thr Pro Asp
 195 200 205
 Thr Val Ser Met Leu Ser Gly Gly Ala Gly Met Leu Pro Leu Ala Leu
 210 215 220
 Gly Leu Met Phe Val Gly Gly Ala Gly Lys Ser Ala Met Phe Pro Leu
 225 230 235 240
 His Ile Trp Leu Pro Asp Ala Met Glu Gly Pro Thr Pro Val Ser Ala
 245 250 255
 Leu Ile His Ala Ala Thr Met Val Val Ala Gly Val Tyr Leu Val Ala
 260 265 270
 Arg Met Phe Pro Leu Phe Ile Glu Tyr Ala Pro Asp Val Leu His Leu
 275 280 285
 Ile Gly Trp Val Gly Ala Phe Thr Ala Phe Tyr Ala Ala Ser Val Ala
 290 295 300
 Cys Val Gln Ser Asp Ile Lys Arg Val Leu Ala Phe Ser Thr Ile Ser
 305 310 315 320
 Gln Ile Gly Phe Met Ile Val Ala Leu Gly Val Cys Thr Ser Ser Asp
 325 330 335
 Pro His His Gly Gly Leu Gly Tyr Met Ala Gly Met Phe His Leu Phe
 340 345 350
 Thr His Ala Met Phe Lys Ala Leu Phe Leu Gly Ala Gly Ser Ile
 355 360 365
 Ile His Ala Val His Ser Asn Glu Met Ser Ala Met Gly Gly Leu Arg
 370 375 380
 Lys Tyr Met Pro Ile Thr His Ile Thr Phe Leu Ile Ala Cys Leu Ala
 385 390 395 400
 Ile Ala Gly Ile Pro Pro Phe Ser Gly Phe Phe Ser Lys Asp Glu Ile
 405 410 415
 Leu Ala Ala Cys Phe Gln Tyr Ser Pro Thr Met Gly Trp Val Met Thr
 420 425 430
 Val Ile Ala Ala Met Thr Ala Phe Tyr Met Phe Arg Leu Tyr Tyr Gly
 435 440 445
 Ile Phe Trp Gly Gly Thr Ala Pro Gly Gln Lys Ser Thr Ser Asp Gly
 450 455 460
 Thr Ser His Val His Thr Pro His Glu Ser Pro Leu Thr Met Thr Val
 465 470 475 480
 Pro Leu Ile Phe Leu Ala Ala Val Thr Cys Val Ala Gly Phe Ile Pro
 485 490 495
 Phe Gly His Phe Ile Ser Ser Asn Gly Glu Ser Tyr Thr Ile His Leu
 500 505 510
 Glu Thr Ser Val Ala Val Thr Ser Val Val Ile Ala Val Ala Ser Ile
 515 520 525
 Val Leu Ala Thr Cys Met Tyr Leu Arg Gln Gln Gln Pro Leu Ala Asp
 530 535 540
 Lys Leu Ala Lys Arg Phe Ala Gly Leu His Arg Ala Ala Tyr His Arg
 545 550 555 560
 Phe Tyr Ile Asp Glu Val Tyr Gln Phe Ile Thr His Arg Ile Ile Phe
 565 570 575
 Arg Cys Ile Ser Thr Pro Ile Ala Trp Phe Asp Arg His Val Val Asp
 580 585 590
 Gly Phe Phe Asn Phe Ile Ala Trp Gly Thr His Ala Thr Ser Asp Glu
 595 600 605
 Ile Arg Gly Leu Gln Ser Gly Arg Val Gln Gln Tyr Ala Tyr Val Phe
 610 615 620
 Leu Leu Gly Ala Leu Ile Leu Ile Leu Ile Leu
 625 630 635

<210> 6000

<211> 439

<212> PRT

<213> B.fragilis

<400> 6000

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Ile Lys Tyr Leu Met Ile Met Lys Ile Leu Ser Thr Ile Leu Leu Thr
1      5      10      15
Leu Leu Ile Val Phe Gly Ala Cys Thr Ser Pro Gln Val Ser Pro Asp
20      25      30
Pro Phe Val Arg Val Ser Asn Gly Arg Leu Thr Val Asn Gly Asn Pro
35      40      45
Tyr Tyr Tyr Ile Gly Thr Asn Phe Trp Tyr Gly Ala Ile Leu Gly Ser
50      55      60
Gln Gly Gln Gly Gly Asn Arg Glu Arg Leu Leu Arg Glu Leu Asp Tyr
65      70      75      80
Leu Lys Ala Leu Gly Ile Asn Asn Leu Arg Val Leu Val Gly Ala Asp
85      90      95
Gly Lys Asp Gly Ile Pro Thr Lys Ala Glu Pro Ala Leu Gln Val Glu
100     105     110
Ala Gly Val Tyr Asn Asp Thr Ile Phe Asp Gly Leu Asp Phe Phe Leu
115     120     125
Ser Glu Val Asp Lys Arg Asp Met Tyr Ala Val Leu Phe Leu Asn Asn
130     135     140
Ser Trp Glu Trp Ser Gly Gly Tyr Ser Gln Tyr Leu Tyr Trp Ala Gly
145     150     155     160
His Gly Glu Val Pro Met Pro Asn Val Ala Gly Trp Asp Ala Phe Ser
165     170     175
Asn Tyr Val Ala Gln Tyr Ala Lys Ser Glu Lys Ala His His Leu Phe
180     185     190
Arg Asp His Ile Thr His Val Val Asn Arg Val Asn Arg Tyr Thr Gly
195     200     205
Lys Lys Tyr Ser Glu Asp Pro Ala Ile Met Ser Trp Gln Ile Gly Asn
210     215     220
Glu Pro Arg Ser Phe Gly Glu Asp Asn Lys Lys Ser Phe Ala Ala Trp
225     230     235     240
Ile Ala Asp Cys Ala Ala Leu Ile Lys Ser Met Asp Ser Asn His Leu
245     250     255
Val Ser Ile Gly Ser Glu Gly Met Ala Gly Cys Glu Gly Asp Leu Ser
260     265     270
Leu Trp Thr Ser Ile His Ala Asp Ala Asn Val Asp Tyr Thr Thr Ile
275     280     285
His Ile Trp Pro Asn Asn Trp Gly Trp Ile Asp Lys Lys Asp Ile Pro
290     295     300
Gly Thr Ile Gly Gln Ala Ile Glu Asn Thr Cys Ser Tyr Ile Asp Met
305     310     315     320
His Val Gln Glu Ala Phe Lys Ile Asn Lys Pro Leu Val Leu Glu Glu
325     330     335
Phe Gly Leu Pro Arg Asp Ser Val Lys Phe Thr Ser Asn Thr Ser Thr
340     345     350
Val Gln Arg Asp Arg Tyr Tyr Arg Ala Val Phe Asp Ile Val Glu Lys
355     360     365
His Ala Ala Glu Lys Gly Val Phe Gln Gly Cys Asn Phe Trp Ala Trp
370     375     380
Gly Gly Phe Ala Glu Pro Gln His Leu Phe Trp Gln Arg Gly Asp Asp
385     390     395     400
Tyr Met Gly Asp Pro Gly Gln Glu Glu Gln Gly Leu Asn Ser Val Tyr
405     410     415
Ala Thr Asp Ser Thr Ile Asn Met Ile Lys Glu Ala Val Ser Asp Ile
420     425     430
Asn Gln Ile Ile Gln Lys Gln

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435

<210> 6001
 <211> 396
 <212> PRT
 <213> B.fragilis

<400> 6001

Phe	Arg	His	His	Met	Asp	Glu	Ile	Leu	Lys	Gln	Glu	Met	Gln	Lys	Glu
1				5					10					15	
Leu	Thr	Thr	Arg	Ile	Leu	Pro	Tyr	Trp	Met	Glu	Arg	Met	Val	Asp	Gln
			20					25					30		
Glu	Asn	Gly	Gly	Phe	Tyr	Gly	Arg	Ile	Thr	Gly	Gln	Glu	Glu	Leu	Ile
		35					40					45			
Pro	Arg	Ala	Asp	Lys	Gly	Ala	Ile	Leu	Asn	Ala	Arg	Ile	Leu	Trp	Thr
	50					55					60				
Tyr	Ser	Ala	Ala	Tyr	Arg	Leu	Leu	Gly	Arg	Glu	Glu	Tyr	Lys	Glu	Met
65					70					75					80
Ala	Asn	Arg	Ala	Lys	Arg	Tyr	Leu	Ile	Asp	His	Phe	Tyr	Asp	Ser	Glu
				85					90					95	
Phe	Gly	Gly	Val	Tyr	Trp	Ser	Leu	Asn	Tyr	Arg	Gly	Glu	Pro	Leu	Asp
			100					105						110	
Thr	Lys	Lys	Gln	Ile	Tyr	Ala	Ile	Gly	Phe	Ala	Ile	Tyr	Gly	Leu	Ser
		115					120					125			
Glu	Phe	His	Arg	Ala	Thr	Gly	Asp	Pro	Glu	Ala	Leu	Met	Tyr	Ala	Val
	130					135					140				
Arg	Leu	Phe	Asn	Asp	Ile	Glu	Ser	His	Ser	Phe	Asp	Gly	Leu	Lys	Asn
145				150						155					160
Gly	Tyr	Cys	Glu	Ala	Leu	Thr	Arg	Glu	Trp	Asn	Glu	Ile	Ala	Asp	Met
			165					170						175	
Arg	Leu	Ser	Glu	Lys	Asp	Ala	Asn	Glu	Arg	Lys	Thr	Met	Asn	Thr	His
			180					185						190	
Leu	His	Ile	Leu	Glu	Pro	Tyr	Thr	Asn	Leu	Tyr	Arg	Val	Trp	Lys	Asp
		195					200					205			
Ala	Arg	Leu	Glu	Arg	Gln	Leu	Tyr	Asn	Leu	Ile	Gly	Leu	Phe	Thr	Glu
	210					215					220				
Lys	Ile	Leu	Asp	Lys	Asp	Thr	Ser	His	Leu	Gln	Leu	Phe	Phe	Asp	Asn
225					230					235					240
Asp	Trp	Gln	Ser	Lys	Tyr	Pro	Val	Val	Ser	Tyr	Gly	His	Asp	Ile	Glu
			245					250						255	
Ala	Ser	Trp	Leu	Leu	His	Glu	Ala	Ala	Arg	Val	Leu	Gly	Asp	Ala	Gly
			260				265						270		
Leu	Ile	Ala	Glu	Ile	Glu	Pro	Val	Val	Lys	Lys	Ile	Ala	Ala	Ala	Ala
		275				280						285			
Ser	Glu	Gly	Leu	Thr	Ser	Asp	Gly	Gly	Met	Ile	Tyr	Glu	Lys	Asn	Leu
	290					295					300				
Thr	Thr	Gly	His	Ile	Asp	Gly	Asp	Tyr	His	Trp	Trp	Val	Gln	Ala	Glu
305					310					315					320
Thr	Val	Val	Gly	Tyr	Tyr	Asn	Leu	Phe	Arg	Tyr	Phe	Gly	Asp	Arg	Gly
			325					330						335	
Ala	Leu	Gln	His	Ser	Ile	Asp	Cys	Trp	Glu	Phe	Ile	Lys	Arg	His	Leu
		340					345						350		
Thr	Asp	Asp	Val	His	Gly	Glu	Trp	Phe	Trp	Ser	Leu	Arg	Ala	Asp	Gly
	355						360					365			
Ser	Leu	Asn	Arg	Asp	Asp	Asp	Lys	Ala	Gly	Phe	Trp	Lys	Cys	Pro	Tyr
	370					375					380				
His	Asn	Gly	Arg	Met	Cys	Ile	Glu	Leu	Leu	Gly	Glu				
385					390						395				

<210> 6002
 <211> 602
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (380)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6002
 Ile Val Phe Gln Thr Phe Cys Thr Phe Gly His Asn Leu Pro Asn Met
 1 5 10 15
 Lys Asn Lys His Val Lys Arg Ile Asn Leu Leu Leu Ser Ile Leu Leu
 20 25 30
 Gly Ala Gly Val Phe Ile Phe Phe Gly Val Tyr Tyr Ser Tyr His Leu
 35 40 45
 His Tyr Gln Glu Gln Phe Gln Met Phe Leu Phe Thr Ser Asp Tyr Phe
 50 55 60
 Val Glu Gln Val Ser His Pro Gly Gly Met Ala Asp Tyr Leu Gly Gly
 65 70 75 80
 Phe Leu Thr Gln Phe Tyr Tyr Tyr Ser Trp Ala Gly Ala Ala Ile Leu
 85 90 95
 Thr Gly Ala Ile Gly Gly Ile His Arg Leu Met Val Trp Ile Ala Asn
 100 105 110
 Arg Leu Gly Gly His Pro Ala Trp Tyr Pro Leu Thr Leu Leu Pro Ser
 115 120 125
 Leu Cys Phe Phe Ile Leu Phe Cys Asp Glu Asn Phe Leu Leu Ser Gly
 130 135 140
 Ala Ile Ser Val Gly Met Val Leu Gly Ala Leu Ile Gly Tyr Thr Phe
 145 150 155 160
 Ile Glu Asn Arg Gln Ile Arg Leu Ile Tyr Trp Gly Val Gly Ile Pro
 165 170 175
 Leu Leu Tyr Leu Leu Ala Gly Gly Cys Ala Trp Leu Phe Ile Pro Leu
 180 185 190
 Ile Trp Ile Thr Glu Phe Cys Arg Phe Ala Gly Arg Arg Leu Pro Trp
 195 200 205
 Trp Ile Leu Val Gly Gly Thr Leu Gly Ile Ala Gly Val Thr Tyr Trp
 210 215 220
 Ile Ser Leu Ala Val Phe Pro Tyr Pro Ala Asp Arg Leu Leu Trp Ala
 225 230 235 240
 Ile Gly Ser Tyr Arg Phe Pro Leu Val Phe Pro Gln Met Gln Val Ile
 245 250 255
 Ala Trp Leu Ala Val Ile Leu Val Pro Leu Leu Val Ala Arg Leu Pro
 260 265 270
 Glu Lys Met Thr Trp Arg Tyr Tyr Ser Gly Ala Trp Val Leu Gln Phe
 275 280 285
 Ile Leu Met Leu Phe Val Leu Asn Leu Tyr Gly Lys Tyr Gly Ile Gly
 290 295 300
 Leu Asn Lys Glu Glu Val Met Gly Tyr Asp Tyr His Val Arg Met Gln
 305 310 315 320
 Glu Trp Asp Glu Val Ile Ala Met Ala Glu Lys Lys Ala Pro Asp Thr
 325 330 335
 Pro Met Ser Val Ser Cys Leu Asn Leu Ala Leu Ala Met Lys Gly Gln
 340 345 350
 Leu Arg Glu Arg Met Phe Ser Phe Tyr Gln Arg Gly Lys Glu Gly Leu
 355 360 365
 Leu Met Ser Phe Val Asn Asp Phe Thr Ile Leu Xaa Val Ala Gly Glu
 370 375 380

Pro Tyr Tyr Tyr Leu Gly Leu Val Asn Val Ala Gln Gln Phe Val Phe
 385 390 395 400
 Glu Ala Met Glu Ala Val Pro Asp Tyr Arg Lys Ser Val Arg Cys Phe
 405 410 415
 Lys Arg Leu Ala Glu Thr Asn Leu Ile Asn Gly Arg Tyr Glu Val Ala
 420 425 430
 Arg Lys Tyr Leu Arg Ile Leu Gln His Thr Leu Phe Tyr Lys Asp Trp
 435 440 445
 Ala Thr Glu Thr Leu Ala Cys Leu Asn Asp Glu Asp Arg Val Asn Ala
 450 455 460
 His Pro Glu Tyr Gly Arg Leu Arg Arg Leu Thr Pro Arg Thr Asp Phe
 465 470 475 480
 Phe Phe Asn Pro Asp Leu Pro Glu Met Thr Leu Glu Phe Leu Leu His
 485 490 495
 Ala Asn Pro Arg Asn Arg Met Ala Tyr Glu Tyr Leu Met Ala Cys Thr
 500 505 510
 Leu Leu Lys Lys Asp Val Gly Arg Phe Val His Tyr Tyr Pro Leu Gly
 515 520 525
 Ala Asp Leu Gly Tyr Ser Ser Val Pro Lys Gly Tyr Gln Glu Ala Leu
 530 535 540
 Leu Phe Tyr Trp Leu Met Ser Lys His Thr Ala Thr Asp Thr Ile Pro
 545 550 555 560
 Trp Lys Ile Asp Pro Gln Thr Glu Asn Arg Leu Arg Glu Tyr Ala Gln
 565 570 575
 Ile Phe Thr Ser Ala Arg Ser Ala Asp Ala Leu Ser Ala Arg Phe Gly
 580 585 590
 Asp Thr Tyr Trp Phe Tyr Ala Asp Phe Arg
 595 600

<210> 6003

<211> 258

<212> PRT

<213> B.fragilis

<400> 6003

Ile Tyr Leu Gln Glu Lys Phe His Val Ala Tyr Asn Arg Gly Asn Val
 1 5 10 15
 Met Thr Phe Cys Arg His Tyr Tyr Asn Pro Val Thr Gly Gly Asn Phe
 20 25 30
 Tyr Asp Thr Thr Gln Val Val Arg His Ile Leu Pro Gly Gly Ser Tyr
 35 40 45
 His Ala Thr Phe Lys Ala Asp Leu Lys Ile Ile Ala Asp Phe Ala His
 50 55 60
 Asn Ala Lys Gly Asp Asp Ala Glu Leu Ile Pro Ile Ile Phe Arg Pro
 65 70 75 80
 Trp His Glu Phe Asp Gly Asn Trp Phe Trp Trp Ala Lys Asn His Cys
 85 90 95
 Ser Val Glu Glu Phe Lys Lys Leu Tyr Arg Phe Thr Val Thr Tyr Leu
 100 105 110
 Arg Asp Ser Leu Glu Val His Asn Phe Leu Tyr Ala Phe Ser Pro Asp
 115 120 125
 Cys Gly Phe Thr Thr Glu Ala Glu Tyr Leu Lys Arg Tyr Pro Gly Asp
 130 135 140
 Lys Tyr Val Asp Val Val Gly Met Asp Asn Tyr Trp Asp Phe Arg Pro
 145 150 155 160
 Tyr Gly Gly Asp Thr Ser Leu Val Val Leu Lys Ala Arg Ile Leu Thr
 165 170 175
 Gln Tyr Ala Gln Lys His Gly Asn Leu Ser Ala Ile Thr Glu Ser Gly
 180 185 190

Thr Gln Thr Arg Asp Ser Leu Trp Tyr Thr Gln Leu Leu Ser Ile Leu
 195 200 205
 Arg Ser Glu Gly Val Ala Leu Asn Tyr Val Cys Thr Trp Ser Gly Phe
 210 215 220
 Ser Pro Tyr Lys Gly His Pro Ala Ala Ala Asp Phe Cys Arg Phe Lys
 225 230 235 240
 Arg Asp Thr Leu Val Leu Phe Ala Asp Glu Ile Pro Asn Phe Tyr Thr
 245 250 255
 Trp His

<210> 6004

<211> 398

<212> PRT

<213> B.fragilis

<400> 6004

Ser Thr Gly Gln Ser Cys Trp Pro Gly Ala Leu Pro Val Phe Gln Thr
 1 5 10 15
 Met Asp Arg Tyr Arg Leu Lys Ile Ile Ala Leu Thr Ala Leu Val Cys
 20 25 30
 Leu Thr Gly Ser Ser Cys Thr Asp Glu Asn Asn Gly Gln Gly Asn
 35 40 45
 Asn Ile Ile Tyr Gly Glu Asn Ile Ile Gly Asn Gly Glu Gln Thr Phe
 50 55 60
 Glu Ile Lys Asp His Gln Tyr Leu Lys Arg Gly Thr Tyr Leu Met Lys
 65 70 75 80
 Gly Trp Cys Tyr Val Thr Tyr Gly Ser Thr Leu Thr Ile Glu Ala Gly
 85 90 95
 Thr Val Ile Lys Gly Asp Lys Glu Thr Arg Ala Ala Leu Ile Val Glu
 100 105 110
 Pro Gly Gly Lys Leu Ile Ala Arg Gly Thr Val Asp Ala Pro Ile Val
 115 120 125
 Phe Thr Ser Glu Met Pro Ala Gly Lys Arg Lys Pro Gly Asp Trp Gly
 130 135 140
 Gly Leu Ile Leu Cys Gly Tyr Ala Arg Asn Asn Glu Asp Ile Met Gln
 145 150 155 160
 Ile Glu Gly Gly Pro Arg Thr Met His Gly Gly Pro Asn Asn Ala Asp
 165 170 175
 Asn Ser Gly Val Leu Ser Tyr Val Arg Val Glu Phe Ala Gly Tyr Pro
 180 185 190
 Phe Lys Lys Asn Gln Glu Ile Asn Gly Ile Thr Phe Gly Ser Val Gly
 195 200 205
 Asn Gly Thr Gln Ile Asp His Leu Gln Val Ser Tyr Ala Asn Asp Asp
 210 215 220
 Ala Phe Glu Trp Phe Gly Gly Thr Val His Ala Glu Tyr Leu Val Ala
 225 230 235 240
 Tyr His Cys Trp Asp Asp Asp Phe Asp Ile Asp Asn Gly Tyr Ser Gly
 245 250 255
 Thr Cys Arg His Leu Leu Gly Ile Arg His Pro Arg Ile Ala Asp Ile
 260 265 270
 Thr Gly Ser His Ala Phe Glu Cys Ser Asn Asn Gly Thr Asn Thr Pro
 275 280 285
 Ala Thr Pro Thr Thr Ala Ala Thr Phe Glu Asp Val Thr Ile Tyr Gly
 290 295 300
 Pro Ala Ser Gly Asp Ala Ser Phe Val Asn His Pro Asp Phe Ile Asn
 305 310 315 320
 Gly Gly Gly Leu Arg Pro Glu Asn Glu Ser Met Leu Gly Leu Phe Gly
 325 330 335

195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335

Ala Ala Leu Tyr Met Gly Asn Asn Thr Ser Val Thr Phe Arg Asn Cys
 340 345 350
 Arg Ile Ser Gly Tyr Pro Ser Asp Met Glu Gly Thr Pro Ala Ser Ala
 355 360 365
 Asp Asn Val Val Phe Ser Glu Arg Glu Glu Thr Gly Tyr Pro Glu Trp
 370 375 380
 Thr Gln Gly Trp Cys Asn Phe Asn Pro Gln Glu Thr Glu Tyr
 385 390 395

<210> 6005

<211> 377

<212> PRT

<213> B.fragilis

<400> 6005

Lys Met Ser Lys Asn Met Glu Tyr Arg Lys His Arg Ile Glu Tyr Leu
 1 5 10 15
 Arg Thr Thr Val Glu Tyr Ser Leu Phe Gly Gly Glu Gly Gly Thr Arg
 20 25 30
 Glu Ala His Leu Met Phe His Val Asp Pro Glu Ala Gly Ser Tyr Glu
 35 40 45
 Glu Gln Leu Thr Ala Ile Arg Lys Ala Tyr His Arg Ile Leu Ser Arg
 50 55 60
 Lys Val Lys Ile Arg Gly Met Val Pro Val Phe Cys Arg Tyr Phe Leu
 65 70 75 80
 Ser Asp Ala Ala Asn Gln Trp Glu Ala Leu Gln Ala Val Leu Gln Lys
 85 90 95
 Glu Pro Ser Cys Ala Val Ser Val Val Gln Gln Pro Pro Leu Asp Gly
 100 105 110
 Ser Lys Ile Ala Leu Trp Val Tyr Leu Thr Ser Glu Pro Asn Ala Ala
 115 120 125
 Tyr Lys His Tyr Trp Thr Ala Gly Ala Gly Val Ser Cys Gly Lys Ser
 130 135 140
 Glu Arg Gln Met Lys Thr Leu Leu Lys Ser Tyr Glu Ala Asp Leu Val
 145 150 155 160
 Gly Lys Gly Cys Thr Leu Ala Ser Asp Cys Ile Arg Thr Trp Ile Phe
 165 170 175
 Val Gln Asn Val Asp Val Asn Tyr Ala Gly Ile Val Lys Ala Arg Arg
 180 185 190
 Glu Asn Phe Leu Gly Gln Gly Leu Thr Glu Ser Thr His Tyr Val Ala
 195 200 205
 Ser Thr Gly Ile Glu Gly Arg His Ala Asp Pro Lys Ile His Val Leu
 210 215 220
 Phe Asp Ala Tyr Ala Val Lys Gly Leu Gln Pro Gly Gln Val Thr Tyr
 225 230 235 240
 Leu His Ala Leu Ser His Leu Ser Pro Thr Ala Leu Tyr Gly Val Thr
 245 250 255
 Phe Glu Arg Gly Thr Ser Val Glu Tyr Gly Asp Arg Arg His Leu Phe
 260 265 270
 Ile Ser Gly Thr Ala Ser Ile Asp His Arg Gly Glu Val Val His Val
 275 280 285
 Gly Asp Val Arg Glu Gln Thr Arg Arg Met Trp Glu Asn Val Glu Lys
 290 295 300
 Leu Leu Glu Glu Gly Lys Ala Gly Phe Glu Asp Val Ala Gln Met Ile
 305 310 315 320
 Val Tyr Leu Arg Asp Ala Ser Asp Tyr Pro Val Val Arg Ala Leu Phe
 325 330 335
 Ala Lys Arg Phe Pro Asp Thr Pro Ile Gln Phe Val Val Ala Ala Val
 340 345 350

Ile Leu Lys Asn Leu Ile Glu Arg Asn Leu Arg Leu Met Lys
 385 390 395

<210> 6007
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 6007
 Gly Ile Lys Asn His Ser Asn Arg Leu Leu Met Lys Arg Ile Gly Ile
 1 5 10 15
 Tyr Ile Val Ile Val Val Cys Ile Leu Ser Cys Ile Ser Ser Arg Arg
 20 25 30
 Asn Leu Leu Thr Glu Thr Arg Leu Met Leu Val Asp Thr Arg Ala Thr
 35 40 45
 Glu His Thr Ala Ala Leu Phe Tyr Asn Leu Arg Gln Leu Thr Gly Lys
 50 55 60
 Arg Val Val Tyr Gly Gln His Asn Tyr Glu Met Asp Gly Phe Asp Ser
 65 70 75 80
 Asp Ser Thr Arg Trp Glu Asp Glu Ala Asn Arg Cys Asp Ala Tyr Asp
 85 90 95
 Val Thr Gly Ala Tyr Pro Ala Leu Ala Ser Phe Glu Phe Leu His Phe
 100 105 110
 Thr Asn Pro Arg Ser Trp Gly Asn Lys Arg Ile Glu Phe Thr Tyr Arg
 115 120 125
 Lys Asn Ser Met Leu His Ile Ile Gly Glu Met Leu
 130 135 140

<210> 6008
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 6008
 Lys Met Lys Asn Glu Glu Tyr Thr Tyr Leu Gly Gly Leu Met Gln Gly
 1 5 10 15
 Ile Gly Ser Leu Leu Thr Gly Met Lys Thr Thr Ile Lys Val Tyr Phe
 20 25 30
 Arg Lys Lys Val Thr Glu Gln Tyr Pro Glu Asn Arg Ala Glu Leu Lys
 35 40 45
 Met Phe Asp Arg Phe Arg Gly Thr Leu Asn Met Pro His Asn Glu Asn
 50 55 60
 Asn Glu His Arg Cys Val Ala Cys Gly Leu Cys Gln Met Ala Cys Pro
 65 70 75 80
 Asn Asp Thr Ile Lys Val Thr Ser Glu Thr Ile Glu Thr Glu Glu Gly
 85 90 95
 Lys Lys Lys Lys Ile Leu Ala Lys Tyr Glu Tyr Asp Leu Gly Ser Cys
 100 105 110
 Ile Phe Cys Gln Leu Cys Val Asn Ala Cys Pro His Asp Ala Ile Thr
 115 120 125
 Phe Asp Gln Val Phe Glu His Ala Val Phe Asp Arg Thr Lys Leu Val
 130 135 140
 Leu Gln Leu Asn Arg Glu Gly Ser Lys Val Ile Glu Lys Lys Lys Glu
 145 150 155 160

<210> 6009
 <211> 1075
 <212> PRT
 <213> B.fragilis

<400> 6009

Asn Lys Arg Lys Met Lys Arg Met Ala Tyr His Leu Leu Ala Ile Leu
 1 5 10 15
 Ile Trp Gly Met Ala Ala Ser Ala Val Lys Ala Gln Ile Leu Leu Thr
 20 25 30
 Ala Ser Ala Thr Pro Ile Glu Glu Tyr Ala Ala Val Glu Leu Gln Arg
 35 40 45
 Tyr Tyr Tyr Gln Leu Ser Gly Arg Leu Leu Ser Ile Asp His Glu Glu
 50 55 60
 Val Pro Asp Arg Lys Thr Glu Phe Val Leu Thr Arg Leu Asp His Pro
 65 70 75 80
 Leu Val Lys Ser Trp Arg Asp Lys Gly Val Leu Pro Leu Lys Ser Met
 85 90 95
 Pro Gly Glu Gln Gly Tyr Val Ile Arg Thr Val Lys Glu Lys Gly Arg
 100 105 110
 Glu Leu Val Val Ile Ala Gly Val Asp Ala Asn Gly Leu Leu Tyr Gly
 115 120 125
 Val Tyr Gly Leu Leu Glu Asp His Leu Gly Met Arg Phe Tyr Met Asn
 130 135 140
 Gly Asp Val Tyr Pro Asp Lys Lys Glu Val Gln Thr Arg Ile Pro Leu
 145 150 155 160
 Ile Gln Asp Glu Arg Thr Pro Thr Val Ala Ile Arg Gly Phe Leu Pro
 165 170 175
 Trp Thr Asn Phe Pro Gln Ser Ala Thr Ile Tyr Ser Trp Asp Asp Trp
 180 185 190
 Arg Tyr Ile Ile Asp Gln Ala Ala Arg Met Arg Met Asn Phe Ile Met
 195 200 205
 Ile His Asn Tyr Asn Gly Phe Cys Gly His Asn Glu Leu Phe His Asn
 210 215 220
 Phe Glu Tyr Lys Gly His Leu Ser Arg Gly Trp Met Pro Thr Ile Lys
 225 230 235 240
 Thr Gly His Gly Trp Gly Cys Pro Gly Trp Asn Ile Asn Glu Tyr Leu
 245 250 255
 Phe Gly Ala Ser Glu Val Tyr Asp Asp Tyr Asp Phe Gly Ala Asp Tyr
 260 265 270
 Gly Leu His Asn Glu Thr Leu Thr Asn Gly Gln Ile Lys Glu Lys Gly
 275 280 285
 Ala Thr Ile Phe Arg Lys Val Ile Ala Tyr Ala His Leu Arg Gly Val
 290 295 300
 Lys Ile Gly Leu Gly Leu Asp Ile Asp Val Val Leu Pro Glu Tyr Gln
 305 310 315 320
 Ser Glu Pro Asp Asn Lys Asp Leu Ile Lys Val Gln Val Ala Glu Ile
 325 330 335
 Ala Arg Glu Tyr Pro Glu Leu Asp Tyr Leu Leu Cys Phe Gln Ser Glu
 340 345 350
 Gly Gln Lys Asn Glu Ala Phe Tyr Ala Arg Trp Arg Arg Val Phe Asp
 355 360 365
 Gly Phe Tyr Glu Glu Met Lys Arg Lys Ser Pro Ser Thr His Ile Ala
 370 375 380
 Val Ser Gly Trp Gly Leu Thr Ala Glu Ser Val Asn Ser Leu Pro Glu
 385 390 395 400
 Asp Val Ile Cys Ala Pro Ile Ser Tyr Tyr Ser Ala Ala Phe Glu Pro
 405 410 415
 Gly Ser Val Tyr Gly Asn Arg Glu Tyr Trp Gly Cys Pro Trp Leu Glu
 420 425 430
 Arg Asp Phe Asn Ser Ser Glu Tyr Tyr Tyr Pro Tyr Asn Val Asp Leu
 435 440 445
 Ser Glu Thr Ile Arg Ala Phe Gly Asp Ala Ser Ala Asn Met Asn Gly

450		455		460
Phe Tyr Ala Leu Thr Trp Arg Leu Ala Asp Ala Ile Ser Pro Lys Met				
465		470		475
Trp Tyr Ile Ser Lys Ala Pro Trp Tyr Asn His Glu Val Leu Asp Ser				480
	485		490	495
Ser Glu Lys Val Tyr Arg Asp Phe Ala Leu Ala Asn Tyr Gly Glu Asn				
	500		505	510
Ala Val Asp Ala Ile Thr Asp Ile Ile Asp Gln Asn Glu Pro Phe Ala				
	515		520	525
Thr Asp Phe Gly Glu Cys Gln Glu Thr Pro Gly Phe Asn Gln Met Val				
	530		535	540
His Thr Tyr Pro Leu Met Asn Leu Tyr Ser Met Thr Phe Gly Gly Lys				
545		550		555
Asn Gly Lys Asp Val Glu Ile Lys Ala Thr Val Tyr Ala Glu Lys Lys				560
	565		570	575
Gly Thr Lys Asn Ala Pro Cys Asp Glu Gly Gly Glu Cys Val Gly Tyr				
	580		585	590
Ile Met Ala Asp Asp Trp Leu Gln Tyr Pro Ala Val Asp Phe Ser Asn				
	595		600	605
Ser Pro Glu Arg Met Ser Ile Arg Ile Ala Ser Ala Ser Ser Gly Gly				
	610		615	620
Val Ala Thr Val Tyr Leu Asp Arg Leu Gly Gly Pro Val Ile Ala Arg				
625		630		635
Phe Glu Val Lys Asn Thr Glu Gly Trp Gln Ser Trp Lys Ser Leu Thr				
	645		650	655
Val Pro Val Lys Gly Leu Lys Gly Val His Thr Leu Tyr Val Arg Phe				
	660		665	670
Gln Pro Phe Asn Val Ile Ala Lys Ala Gly Lys Leu Ala Asp Lys Gln				
	675		680	685
Leu Lys Thr Ile Asp Ser Cys Met Ala Val Thr Ser Asp Val Leu Gln				
	690		695	700
Gln Leu Arg Leu Ser Arg Leu Arg Ala Arg Ile Gln Gly Ala Ala Cys				
705		710		715
His Ile Ala Leu Asn Thr Asp Phe Glu Asn Tyr Gln Trp Asn Asp Leu				
	725		730	735
Pro Gly Lys Met Asp Glu Trp Ala Arg Ser Phe Leu Tyr Arg Ile Glu				
	740		745	750
Asp Ile Ser Ser Tyr Gly Asn Ile Met Ser Thr Gln Asn Arg Phe Val				
	755		760	765
Lys Gln Asn Tyr Val Glu Lys Ile Asn Gln Leu Arg Lys Gln Gln Arg				
	770		775	780
Val Gln Ala Pro Ser His Ile Ile Ala Lys Gly Thr Leu Glu Gly Ala				
785		790		795
Gln Ile Ser Trp Arg Asn Glu Glu Pro Ala Val Ser Ser Phe Val Val				
	805		810	815
Cys Arg Asn Gly Glu Glu Ile Asp Thr Leu Ala Ser Asp Val Asn Cys				
	820		825	830
Tyr Gln Asp Lys Phe His Gly Ala Ala Ser Tyr Thr Val Tyr Ala Val				
	835		840	845
Asp Ile Glu Gly His Lys Ser Pro Leu Gly Ile Pro Ala Asp Cys Leu				
	850		855	860
Ala Gly Ser Ala Asp Arg Glu Ala Pro Val Ile Val Ile Asn Ser Pro				
865		870		875
Leu Thr Ser Ile Met Glu Gly Thr Pro Leu His Ile Arg Phe Ser Val				
	885		890	895
Val Glu Asn Arg Leu Pro Glu Phe Val Ser Gly Ile Phe His Tyr Arg				
	900		905	910
Arg Thr Gly Glu Lys Val Trp Lys Lys Ile Pro Phe Lys His Arg Thr				
	915		920	925

Arg Gly Val Phe Thr Leu Thr Leu Pro Ala Ser Glu Ile Thr Arg Gln
 930 935 940
 Gly Ile Glu Tyr Tyr Ile Ser Val Ser Asp Ser Asp Asn Val Phe Cys
 945 950 955 960
 Tyr Pro Gly Ser Ala Pro Ala Arg Asn His Thr Val Val Val Thr Glu
 965 970 975
 Val Pro Gly Asp Asp Lys Pro Glu Val Pro Met Ile Lys Pro Ile Cys
 980 985 990
 Gly Lys Arg Met Phe Trp Ser Arg Val Pro Asn Val Glu Met Tyr Arg
 995 1000 1005
 Ile Tyr Arg Ser Arg Thr Pro Asp Phe Lys Ile Gly Ala Asp Thr Phe
 1010 1015 1020
 Val Thr Phe Val Ala Gly Asn Thr Gln Ser Phe Ala Asp Asn Gly Phe
 1025 1030 1035 1040
 Asp Phe Asp Gly Thr Ser Leu Lys Gly Thr Tyr Tyr Tyr Cys Val Thr
 1045 1050 1055
 Ser Val Ser Phe Trp Asp His Glu Ser Glu Ala Ser Lys Ile Ile Gln
 1060 1065 1070
 Ile Asp Tyr
 1075

<210> 6010
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 6010
 Asn Ser Met Asn Met Lys Thr Asn Tyr Leu Lys Leu Asn Ser Trp Ala
 1 5 10 15
 Val Ala Ala Leu Met Gly Met Cys Ser Leu Ala Ala Cys Ser Asp Asp
 20 25 30
 Asn Ser Gly Glu Gly Gly Gly Asn Gly Asp Ser Glu Glu Val Ile Ala
 35 40 45
 Asn Asn Gly Thr Leu Lys Gly Ser Val Asp Gly Ser Lys Thr Val Ile
 50 55 60
 Leu Thr Lys Gly Tyr Asn Phe Ser Leu Asp Gly Glu Tyr Ile Val Lys
 65 70 75 80
 Ala Gly Ser Thr Leu Lys Ile Gly Glu Gly Val Thr Ile Ser Ala Lys
 85 90 95
 Ser Asp Asp Ala Thr Ile Asp Tyr Ile Leu Val Glu Gln Gly Ala Lys
 100 105 110
 Ile Glu Ala Val Gly Thr Ala Ser Ala Pro Ile Val Met Thr Ala Asp
 115 120 125
 Thr Lys Glu Pro Gly Ala Trp Gly Gly Ile His Ile Cys Gly Lys Ala
 130 135 140
 Pro Ile Asn Ile Gly Ser Thr Gly Lys Ser Glu Val Gly Asp Ala Ala
 145 150 155 160
 Tyr Gly Gly Ser Asp Pro Ala Asp Asn Ser Gly Ile Leu Lys Tyr Ile
 165 170 175
 Arg Leu Glu Tyr Ala Gly Tyr Lys Phe Thr Thr Glu Lys Glu Cys Asn
 180 185 190
 Gly Phe Thr Phe Tyr Gly Val Gly Asn Gly Thr Thr Leu Glu Tyr Leu
 195 200 205
 Glu Ala Tyr Lys Gly Thr Asp Asp Gly Phe Glu Trp Phe Gly Gly Thr
 210 215 220
 Val Asn Ala Lys Tyr Leu Val Ser Val Ser Asn Ser Asp Asp Ser Phe
 225 230 235 240
 Asp Trp Thr Glu Gly Trp Ser Gly Lys Gly Gln Phe Phe Val Ala Tyr
 245 250 255

Gln Glu Asp Pro Ala Thr Leu Gly Tyr Thr Cys Asp Cys Leu Ile Glu
 260 265 270
 Ala Asp Asn Tyr Asp Lys Asn Met Asp Ala Ala Pro Ile Ser Cys Pro
 275 280 285
 Thr Leu Ala Asn Leu Thr Leu Ile Gly Ala Asn Asn Asp Glu Gly Lys
 290 295 300
 Arg Gly Ile Arg Leu Arg Ala Gly Thr Gln Ala Lys Ile Tyr Asn Ala
 305 310 315 320
 Leu Val Thr Gly Lys Ala Asn Asn Leu Thr Thr Glu Thr Glu Gln Thr
 325 330 335
 Glu Lys Phe Leu Ile Asp Gly Pro Ser Val Leu Asn Tyr Ile Ala Ile
 340 345 350
 Ala Arg Asp Ile Lys Ala Ser Gly Asp Gly Gly Tyr Ser Ser Ala Leu
 355 360 365
 Phe Thr Ala Glu Gly Asn His Asn Ala Ile Asn Gln Thr Leu Ser Phe
 370 375 380
 Ser Asn Ile Phe Ile Gly Thr Gln Asp Gly Gly Ala Asp Leu Ser Ala
 385 390 395 400
 Asp Ser Phe Phe Glu Lys Ala Ala Tyr Lys Gly Ala Val Lys Ala Asp
 405 410 415
 Asn Glu Trp Thr Lys Gly Trp Thr Lys Leu
 420 425

<210> 6011

<211> 405

<212> PRT

<213> B.fragilis

<400> 6011

Ile Ile Met Asn Arg Ile Asn Thr Thr Leu Leu Leu Leu Phe Cys Ser
 1 5 10 15
 Val Tyr Cys Leu Ala Gln Gln Ala Thr Ile Pro Val Pro Lys Pro Phe
 20 25 30
 Gln Leu Lys Trp His Gln Ala Glu Met Gly Ala Val Phe His Tyr Asp
 35 40 45
 Leu His Val Phe Asp Gly Val Arg Tyr Gly Gln Gly Asn Asn Arg Ile
 50 55 60
 Asn Pro Ile Glu Asp Tyr Asn Ile Phe Asn Pro Thr Glu Leu Asn Thr
 65 70 75 80
 Asp Gln Trp Val Leu Ala Ala Lys Ala Ala Gly Cys Lys Phe Ala Val
 85 90 95
 Leu Thr Ala Thr His Glu Thr Gly Phe Gly Leu Trp Gln Ser Asp Val
 100 105 110
 Asn Pro Tyr Cys Leu Lys Ala Val Lys Trp Arg Asp Gly Lys Gly Asp
 115 120 125
 Ile Val Arg Asp Phe Val Asn Ser Cys Arg Lys Tyr Gly Leu Gln Pro
 130 135 140
 Gly Ile Tyr Ile Gly Ile Arg Trp Asn Ser Leu Leu Gly Ile His Asn
 145 150 155 160
 Phe Lys Ala Glu Gly Glu Gly Glu Phe Ala His Asn Arg Gln Ala Trp
 165 170 175
 Tyr Lys Arg Leu Cys Glu Lys Met Val Thr Glu Leu Cys Thr Arg Tyr
 180 185 190
 Gly Asp Leu Tyr Met Ile Trp Phe Asp Gly Gly Ala Asp Asp Pro Arg
 195 200 205
 Gly Asp Gly Pro Asp Val Glu Pro Ile Val Asn Lys Tyr Gln Pro Asn
 210 215 220
 Cys Leu Phe Tyr His Asn Ile Asp Arg Ala Asp Phe Arg Trp Gly Gly
 225 230 235 240

Ser Glu Thr Gly Thr Val Gly Tyr Pro Cys Trp Ser Thr Phe Pro Ala
 245 250 255
 Pro Cys Ser His His Lys Arg Ile Glu Ser Asn Val Asp Gln Ile Glu
 260 265 270
 Leu Leu Lys His Gly Asp Lys Asp Gly Lys Tyr Trp Val Pro Ala Met
 275 280 285
 Ala Asp Thr Pro Leu Arg Gly Ala Asn Gly Arg His Glu Trp Phe Trp
 290 295 300
 Glu Pro Asp Asp Glu Asn Asn Ile Tyr Pro Leu Asn Glu Leu Met Asp
 305 310 315 320
 Lys Tyr Glu Lys Ser Val Gly Arg Asn Ala Thr Leu Ile Leu Gly Leu
 325 330 335
 Thr Pro Asp Pro Asn Gly Leu Ile Pro Thr Gly Asp Glu Gln Arg Leu
 340 345 350
 Lys Glu Phe Gly Thr Glu Ile Asn Arg Arg Phe Ser Ser Pro Leu Ala
 355 360 365
 Gln Ile Ser Gly Gln Glu Lys Lys Cys Asp Leu Glu Thr Gly Gln Lys
 370 375 380
 Ala Thr Gly Glu Leu Leu Arg His Ser Arg Arg His Thr Glu Arg Arg
 385 390 395 400
 Thr Tyr Pro Pro Ile
 405

<210> 6012

<211> 901

<212> PRT

<213> B.fragilis

<400> 6012

Lys Asp Met Lys Gln Gln Ile Gly Arg Leu Leu Ser Thr Leu Leu Leu
 1 5 10 15
 Ala Thr Phe Ser Leu Gly Ile Thr Ala Gly Val Ile Gln Gly Thr Ile
 20 25 30
 Ile Asp Lys Gln Thr Lys Glu Pro Leu Thr Gly Ala Thr Val Gln Ile
 35 40 45
 Ala Gly Thr Thr Thr Gly Thr Val Ala Asp Val Asp Gly Asn Tyr Thr
 50 55 60
 Leu Thr Leu Ser Asn Gly Thr Tyr Thr Ile Glu Val Lys Tyr Ile Gly
 65 70 75 80
 Tyr Lys Thr Leu Arg Met Asn Glu Val Lys Val Lys Ala Asn Ala Thr
 85 90 95
 Leu Asn Phe Glu Leu Glu Val Asp Ala Gln Thr Leu Asp Ala Val Thr
 100 105 110
 Val Val Ala Arg Lys Asn Leu Glu Gly Glu Lys Ala Leu Leu Gln Glu
 115 120 125
 Arg Gln Lys Ala Thr Leu Ala Ile Glu Asn Met Gly Ala Lys Glu Met
 130 135 140
 Thr Leu Lys Gly Ile Ser Asn Val Gln Asp Gly Val Lys Lys Ile Thr
 145 150 155 160
 Gly Ile Ser Ile Ala Ser Ala Gly Gln Leu Ile Val Arg Gly Leu Gly
 165 170 175
 Asp Arg Tyr Ser Thr Thr Thr Leu Asn Gly Leu Pro Ile Ala Ser Pro
 180 185 190
 Asn Pro Asp Asn Lys Leu Ile Pro Leu Asp Leu Phe Pro Ala Ser Thr
 195 200 205
 Val Lys Asn Ile Thr Val Ser Lys Val Tyr Ala Ala Gly Ala Phe Ala
 210 215 220
 Asp Tyr Ser Gly Ala His Ile Asp Ile Ser Thr Lys Glu Asn Thr Gly
 225 230 235 240

Ser Asp Phe Phe Ser Ile Gly Phe Asn Val Gly Gly Arg Phe Asn Thr
 245 250 255
 Val Gly Lys Asp Phe Tyr Tyr Ser Asp Arg Lys Gly Gly Leu Phe Ser
 260 265 270
 Thr Gly Asn Leu Arg Asn Lys Asp Arg Ile Leu Ala Met Gly Lys Ser
 275 280 285
 Glu Phe Arg Asp Tyr Ala Arg Asn Asn Asp Pro Phe Gly Thr Asn Phe
 290 295 300
 Ala Ile Ser Lys His Arg Ser Leu Pro Glu Phe Gly Gly Asn Leu Gly
 305 310 315 320
 Gly Gly Lys Ser Trp Thr Leu Pro Asn Gly Asn Arg Leu Ser Val Leu
 325 330 335
 Ala Ser Val Gly Val Ser Asn Glu Asn Gln Ile Leu Lys Asp Ala Tyr
 340 345 350
 Val Thr Thr Met Thr Ala Gln Gly Thr His Leu Asp Lys Phe Asn Tyr
 355 360 365
 Asp Ser Tyr Ser Ser Ala Leu Lys Ile Ala Gly Leu Gly Asn Ile Gly
 370 375 380
 Tyr Ser Phe Arg Gln Ala Asp His Ile Asn Phe Thr Val Phe Tyr Ala
 385 390 395 400
 Arg Asn Ala Ile Asn Asp Tyr Met Ser Arg Glu Gly Ile Asp Ala Glu
 405 410 415
 Lys Asn Asn Ile Thr Ser Ser Asn Ser Val Phe His Ala Tyr Ser Leu
 420 425 430
 Leu Asn Asn Gln Leu Leu Gly His His Glu Leu Thr Ser Gln Trp Asp
 435 440 445
 Val Asn Trp Ser Ala Ser Tyr Gly Leu Thr Asn Ser Asp Glu Pro Asp
 450 455 460
 Arg Arg Gln Val Val Phe Phe Arg Asn Glu Gly Ser Asp Lys Leu Asn
 465 470 475 480
 Leu Phe Lys Leu Asn Gln Thr Thr Asn Arg Tyr Phe Gly Glu Leu Gln
 485 490 495
 Glu Lys Glu Ile Val Gly Asp Leu Arg Thr Ser Tyr Lys Trp Gly Asp
 500 505 510
 Ala Asn Leu Ile Arg Val Gly Gly Thr Tyr Lys Ser Lys Lys Arg Asp
 515 520 525
 Phe Glu Ser Val Asn Phe Tyr Tyr Asp Ile Asn Ala Leu Asn Ala Asp
 530 535 540
 Val Thr Asn Ile Tyr Asp Thr Asn Gly Tyr Leu Asn Gln Glu Asn Ile
 545 550 555 560
 Ala Asn Gly Thr Ile Lys Ala Asn Ile Asp Ala Gln Pro Arg Tyr Asn
 565 570 575
 Tyr Tyr Ala Gly Met Asp Val Trp Ala Gly Phe Ala Glu Ile Glu Tyr
 580 585 590
 Tyr Pro Met Glu Ser Leu Leu Val Asn Val Gly Leu Arg Tyr Glu Gln
 595 600 605
 Ala Lys Gln Trp Val Arg Tyr Trp Thr Asp Gly Gly Gln Glu Lys Lys
 610 615 620
 Thr Asn Leu Asp Lys Gly Asp Phe Phe Pro Ala Leu Asn Leu Lys Tyr
 625 630 635 640
 Ser Leu Asn Glu Thr Asn Ser Leu Arg Leu Ser Val Ser Arg Thr Val
 645 650 655
 Thr Arg Pro Ser Phe Ile Glu Met Ala Pro Phe Leu Tyr Gln Glu Ser
 660 665 670
 Tyr Gly Ser Ala Tyr Ile Arg Gly Asn Asn Glu Leu Lys Asn Ala Tyr
 675 680 685
 Asn Tyr Asn Ile Asp Leu Arg Tyr Asp Phe Phe Pro Lys Arg Asn Asn
 690 695 700
 Gly Asp Met Phe Ser Val Thr Gly Tyr Phe Lys Lys Leu Lys Ser Pro

705		710		715		720									
Ile	Glu	Gln	Thr	Gln	Glu	Ser	Ser	Gly	Gly	Thr	Val	Ile	Arg	Ser	Phe
		725							730					735	
Arg	Asn	Ala	Glu	Asp	Gly	Ile	Ala	Thr	Gly	Val	Glu	Ile	Glu	Phe	Arg
		740						745					750		
Lys	Glu	Leu	Phe	Lys	Asn	Phe	Arg	Ile	Gly	Ala	Asn	Gly	Ser	Tyr	Met
	755					760						765			
Tyr	Thr	Asn	Val	Val	Leu	Pro	Glu	Gly	Gly	Val	Tyr	Thr	Asp	Ser	Glu
	770					775						780			
Arg	Ala	Leu	Gln	Gly	Ala	Ser	Pro	Phe	Leu	Ile	Asn	Ala	Asp	Leu	Ser
785					790					795				800	
Tyr	Thr	Pro	Gln	Leu	Arg	Gly	Glu	Ser	Asp	Leu	Thr	Leu	Ala	Leu	Val
			805						810					815	
Tyr	Asn	Val	Gln	Gly	Pro	Arg	Ile	Glu	Thr	Val	Gly	Ile	Tyr	Gly	Thr
			820					825					830		
Gly	Asn	Ile	Lys	Gln	Gln	Thr	Leu	His	Thr	Met	Asp	Phe	Ile	Ala	Ser
		835					840					845			
Tyr	Ala	Ile	Asn	Lys	His	Leu	Ser	Leu	Arg	Leu	Gln	Met	Lys	Asp	Leu
	850					855					860				
Leu	Asn	Ser	Thr	Ile	Arg	Phe	Lys	Gln	Glu	Leu	Pro	Ala	Thr	Gly	Gln
865					870					875					880
Lys	Val	Glu	Val	Glu	Ser	Phe	Arg	Pro	Gly	Thr	His	Ala	Glu	Ile	Gly
			885						890					895	
Val	Ser	Tyr	Arg	Phe											
			900												

<210> 6013

<211> 239

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (232), (236), (239)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6013

Asp	Lys	Met	Lys	Asn	Asn	Arg	Leu	Ile	Ile	Thr	Leu	Ile	Ala	Leu	Phe
1			5					10					15		
Leu	Leu	Gly	Phe	Gly	Leu	Lys	Ala	Gln	Thr	Ala	Ser	Thr	Glu	Glu	Thr
		20					25					30			
Ala	Ala	Gln	Lys	Glu	Lys	Arg	Met	Glu	Trp	Phe	Ala	Gln	Ala	Lys	Leu
		35				40						45			
Gly	Ile	Phe	Ile	His	Trp	Gly	Ile	Tyr	Ala	Val	Asn	Gly	Val	Ser	Glu
	50				55			60							
Ser	Trp	Ser	Phe	Phe	Asn	Asn	Tyr	Leu	Pro	Tyr	Glu	Glu	Tyr	Met	Ala
65					70			75						80	
Gln	Glu	Lys	Gly	Phe	Thr	Ala	Ser	Ala	Tyr	Asn	Pro	Gln	Glu	Trp	Val
			85					90						95	
Lys	Leu	Ile	Lys	Glu	Ser	Gly	Ala	Arg	Tyr	Thr	Val	Ile	Thr	Thr	Lys
			100				105					110			
His	His	Asp	Gly	Val	Ala	Leu	Trp	Asp	Thr	Lys	Ala	Gly	Asp	Leu	Ser
		115					120					125			
Thr	Val	Lys	Ser	Thr	Pro	Ala	Gly	Arg	Asp	Leu	Ile	Ala	Pro	Phe	Val
	130					135					140				
Lys	Glu	Val	Arg	Lys	Gln	Gly	Leu	Lys	Leu	Gly	Phe	Tyr	Tyr	Ser	Leu
145				150				155							160
Leu	Asp	Trp	Ser	His	Pro	Asp	Tyr	Pro	Asn	Lys	Thr	Arg	Thr	Glu	Val
			165					170						175	

Arg Tyr Lys Asn Asp Pro Asp Arg Trp Ala Lys Phe Val Lys Phe Asn
 180 185 190
 Phe Gly Gln Leu Ser Glu Leu Asn Lys Thr Trp Lys Pro Asp Leu Tyr
 195 200 205
 Trp Phe Asp Gly Asp Trp Glu Gln Thr Ala Glu Ala Trp Asp Ser Lys
 210 215 220
 Ser Ser Pro Arg Gly Trp Lys Xaa Ala Arg His Xaa Glu Leu Xaa
 225 230 235

<210> 6014

<211> 279

<212> PRT

<213> B.fragilis

<400> 6014

Tyr Met Phe Asp Phe Ser Ile Ile Thr Ser Trp Ile His Gln Thr Leu
 1 5 10 15
 Thr Ser Val Met Pro Glu Gly Leu Ala Val Phe Ile Glu Cys Val Val
 20 25 30
 Ile Gly Val Cys Ile Val Ala Leu Tyr Ala Ile Leu Ala Ile Leu Leu
 35 40 45
 Ile Tyr Met Glu Arg Lys Val Cys Gly Phe Phe Gln Cys Arg Leu Gly
 50 55 60
 Pro Asn Arg Val Gly Lys Trp Gly Ser Ile Gln Val Leu Cys Asp Val
 65 70 75 80
 Leu Lys Met Leu Thr Lys Glu Ile Ile Glu Leu Lys His Ser Asp Lys
 85 90 95
 Phe Leu Tyr Asn Leu Ala Pro Phe Met Val Ile Ile Ala Ser Phe Leu
 100 105 110
 Thr Phe Ser Cys Leu Pro Ile Ser Lys Gly Leu Glu Val Leu Asp Phe
 115 120 125
 Asn Val Gly Val Phe Phe Leu Leu Ala Ala Ser Ser Ile Gly Val Val
 130 135 140
 Gly Ile Leu Leu Ala Gly Trp Gly Ser Asn Asn Lys Phe Ser Leu Ile
 145 150 155 160
 Gly Ala Met Arg Ser Gly Ala Gln Ile Ile Ser Tyr Glu Leu Ser Val
 165 170 175
 Gly Leu Ser Ile Leu Thr Met Val Val Leu Met Gly Thr Met Gln Val
 180 185 190
 Ser Glu Ile Val Glu Ser Gln Ala Asn Gly Trp Phe Ile Phe Lys Gly
 195 200 205
 His Ile Pro Ala Leu Ile Ala Phe Val Ile Tyr Leu Ile Ala Gly Asn
 210 215 220
 Ala Glu Cys Asn Arg Gly Pro Phe Asp Leu Pro Glu Ala Glu Ser Glu
 225 230 235 240
 Leu Thr Ala Gly Tyr His Thr Glu Tyr Ser Gly Met His Phe Gly Phe
 245 250 255
 Phe Tyr Leu Ala Glu Tyr Leu Asn Met Phe Ile Val Ala Ala Val Ala
 260 265 270
 Ala Thr Ile Phe Leu Gly Gly
 275

<210> 6015

<211> 836

<212> PRT

<213> B.fragilis

<400> 6015

Pro Arg Ile Asp Asn Tyr Glu Tyr Leu Leu Pro Lys Asn Lys Glu Phe

1		5		10		15									
Phe	Gln	Lys	Leu	Gly	Val	Asp	Ser	Leu	Ile	Tyr	Pro	Glu	Met	Leu	Ala
		20						25					30		
Ala	Lys	Glu	Ile	Val	Ser	Ser	Met	Arg	Met	Ser	Trp	Val	Arg	Gln	Trp
		35					40					45			
Trp	Glu	Phe	Cys	Gly	Gly	Ser	Leu	Ile	Leu	Ile	Gly	Thr	Lys	Met	Arg
	50					55					60				
Glu	Lys	Ala	Glu	Ile	Leu	Asn	Val	Thr	Leu	Ala	Glu	Leu	Gly	Ala	Pro
65				70					75					80	
Asp	Ile	Pro	Tyr	His	Val	Val	Ala	Ile	Lys	Arg	Gly	Thr	Glu	Thr	Ile
			85						90				95		
Ile	Pro	Arg	Gly	Asp	Asp	Thr	Ile	Lys	Leu	His	Asp	Ile	Val	Tyr	Phe
		100						105				110			
Thr	Thr	Thr	Arg	Lys	Tyr	Ile	Pro	Tyr	Ile	Arg	Lys	Ile	Ala	Gly	Lys
		115					120					125			
Glu	Glu	Tyr	Ala	Asp	Val	Arg	Asn	Val	Met	Ile	Met	Gly	Gly	Ser	Arg
	130					135					140				
Ile	Ala	Val	Arg	Thr	Ala	Gln	Tyr	Val	Pro	Asp	Tyr	Met	Gln	Val	Lys
145				150					155					160	
Ile	Val	Asp	Asn	Asp	Ile	Asn	Arg	Cys	Asn	Arg	Leu	Thr	Glu	Leu	Leu
		165						170					175		
Asp	Asp	Lys	Thr	Met	Ile	Ile	Asn	Gly	Asp	Gly	Arg	Asp	Met	Asp	Leu
		180						185					190		
Leu	Ile	Glu	Gly	Leu	Lys	Asn	Thr	Glu	Ala	Phe	Val	Ala	Leu	Thr	
	195					200					205				
Gly	Asn	Ser	Glu	Thr	Asn	Ile	Leu	Ala	Cys	Leu	Ala	Ala	Lys	Arg	Met
	210				215						220				
Gly	Val	Ser	Lys	Thr	Val	Ala	Glu	Val	Glu	Asn	Ile	Asp	Tyr	Ile	Gly
225				230					235					240	
Met	Ala	Glu	Ser	Leu	Asp	Ile	Gly	Thr	Val	Ile	Asn	Lys	Lys	Met	Ile
		245						250					255		
Ala	Ala	Ser	His	Ile	Tyr	Gln	Met	Met	Leu	Asp	Ala	Asp	Val	Ser	Asn
		260						265					270		
Val	Lys	Cys	Leu	Thr	Phe	Ala	Asn	Ala	Asp	Val	Ala	Glu	Phe	Thr	Val
	275						280					285			
Pro	Glu	Asn	Ala	Lys	Ile	Thr	Lys	Asn	Lys	Val	Lys	Asp	Leu	Gly	Leu
	290					295					300				
Pro	Lys	Gly	Thr	Thr	Ile	Gly	Gly	Leu	Ile	Arg	Asn	Gly	Glu	Gly	Ile
305				310					315					320	
Leu	Val	Thr	Gly	Asp	Thr	Leu	Ile	Gln	Ala	Gly	Asp	His	Val	Val	Leu
		325						330					335		
Phe	Cys	Leu	Ser	Met	Met	Ile	Lys	Lys	Ile	Glu	Lys	Ser	Leu	Ile	Asp
		340						345					350		
Gly	Met	Ile	Asn	Ser	Lys	Met	Ile	Tyr	Arg	Ile	Thr	Gly	Phe	Leu	Leu
	355					360						365			
Leu	Ile	Glu	Thr	Gly	Leu	Leu	Leu	Cys	Cys	Ala	Gly	Val	Ser	Leu	Ile
	370					375					380				
Tyr	Arg	Glu	Asp	Asp	Leu	Ser	Ser	Phe	Leu	Leu	Ser	Ala	Gly	Leu	Thr
385				390					395					400	
Thr	Leu	Val	Ala	Ile	Leu	Leu	Leu	Ala	Leu	Gly	Lys	Gly	Ala	Glu	Lys
		405						410					415		
Gln	Leu	Asn	Arg	Arg	Asp	Gly	Tyr	Val	Ile	Val	Ser	Val	Ala	Trp	Val
		420						425					430		
Val	Phe	Ser	Leu	Phe	Gly	Met	Leu	Pro	Phe	Tyr	Leu	Ser	His	Tyr	Ile
	435						440					445			
Pro	Ser	Ile	Thr	Asn	Ala	Phe	Phe	Glu	Thr	Met	Ser	Gly	Phe	Ser	Ser
	450					455					460				
Thr	Gly	Ala	Thr	Ile	Leu	Asp	Asp	Ile	Glu	Ala	Leu	Pro	His	Gly	Leu
465				470					475					480	

Leu Phe Trp Arg Ser Met Thr Gln Trp Ile Gly Gly Leu Gly Ile Val
 485 490 495
 Phe Phe Thr Ile Ala Val Leu Pro Ile Phe Gly Val Ser Gly Val Gln
 500 505 510
 Leu Phe Ala Ala Glu Ala Ser Gly Pro Thr Tyr Asp Lys Val His Pro
 515 520 525
 Arg Ile Gly Val Thr Ala Lys Trp Ile Trp Thr Ile Tyr Ala Gly Leu
 530 535 540
 Thr Ala Ile Glu Val Ile Leu Leu Leu Phe Gly Gly Met Gly Leu Phe
 545 550 555 560
 Asp Ser Ile Cys His Ser Phe Ala Thr Thr Gly Thr Gly Gly Tyr Ser
 565 570 575
 Thr Lys Gln Asp Ser Ile Ala Tyr Tyr Asn Ser Pro Tyr Ile Glu Tyr
 580 585 590
 Val Ile Gly Val Phe Met Phe Leu Ser Gly Ile Asn Phe Thr Leu Leu
 595 600 605
 Leu Leu Leu Phe Thr Gly Lys Leu Lys Lys Val Ser Gln Asn Ala Glu
 610 615 620
 Leu Lys Trp Tyr Val Met Ser Val Ile Leu Phe Thr Ala Phe Ile Ala
 625 630 635 640
 Ala Val Leu Tyr Arg Thr Thr Pro Met Gly Ala Glu Glu Ser Phe Arg
 645 650 655
 Lys Ala Phe Phe Gln Val Ala Ser Leu His Thr Ser Thr Gly Phe Val
 660 665 670
 Thr Ala Asp Tyr Met Gln Trp Val Pro Val Leu Trp Gly Thr Leu Thr
 675 680 685
 Val Ile Met Leu Ile Gly Ala Cys Ala Gly Ser Thr Thr Gly Gly Met
 690 695 700
 Lys Cys Ile Arg Met Val Ile Leu Ala Lys Val Ser Arg Asn Glu Phe
 705 710 715 720
 Lys His Ile Val His Pro Asn Ala Val Leu Pro Val Arg Val Asn Lys
 725 730 735
 Gln Val Ile Ser Pro Ala Ile Leu Ser Thr Val Leu Ala Phe Ser Phe
 740 745 750
 Ile Tyr Ala Val Ile Ile Ile Val Ser Val Leu Leu Met Leu Ala Met
 755 760 765
 Gly Val Gly Phe Thr Glu Ser Ile Gly Thr Val Ile Ser Ser Ile Gly
 770 775 780
 Asn Met Gly Pro Gly Leu Gly Ser Cys Gly Pro Ala Tyr Ser Trp Asp
 785 790 795 800
 Gly Leu Pro Asp Leu Ala Lys Trp Leu Leu Ser Phe Leu Met Leu Leu
 805 810 815
 Gly Arg Leu Glu Leu Phe Thr Val Leu Leu Leu Phe Ser Ser Asp Phe
 820 825 830
 Trp Lys Arg Asn
 835

<210> 6016

<211> 625

<212> PRT

<213> B.fragilis

<400> 6016

Cys Arg Val Glu Leu Val Lys Glu Gly Ser Phe Tyr Gly Thr Ile Pro
 1 5 10 15
 Leu Phe Asn Ser Ala Cys Asn Ile Asn Leu Thr Lys Met Ile Met Arg
 20 25 30
 Lys Ile Gln Tyr Leu Phe Ile Ala Leu Phe Ile Cys Leu Glu Ile Gln
 35 40 45

Ala Gln Asp Lys Phe Asn Ile Arg Gly Val Leu Pro Trp His Asn Phe
 50 55 60
 Leu Ser Gly Pro Thr Ser Trp Asn Leu Ser Asp Tyr Arg Ile Tyr Leu
 65 70 75 80
 Asp Glu Cys Arg Lys Asn Gly Ile Asn Phe Ile Gly Phe His Asn Tyr
 85 90 95
 Thr Gly Gly Gly Glu Arg Tyr Ala Thr Tyr Val Glu Pro Met Ile Lys
 100 105 110
 Ile Glu Tyr Lys Asn Ile Leu Pro Gln Ala Cys Phe Asp Asn Ser Met
 115 120 125
 Thr Ala Arg Trp Gly Tyr Leu Pro Met Ala Val Lys Asp Phe Ala Phe
 130 135 140
 Asp Thr Gly Lys Ile Phe Gln Leu Pro Val Gly Ala Glu Ala Phe Gly
 145 150 155 160
 Asn Asn Gly Ser Ile Thr Ser His Ser Ser Arg Glu His Tyr Glu Lys
 165 170 175
 Ala Gln Ser Leu Met Arg Asp Val Leu Lys Met Ala His Glu Arg Gly
 180 185 190
 Ile Arg Met Ala Met Gly Phe Glu Phe Gly Val Ile Pro Ser Glu Tyr
 195 200 205
 Phe Ser Leu Asn Val Ala Gly Asp Cys Phe Tyr Trp Ala Gly Glu Ser
 210 215 220
 Asn Met Ile Pro Asn Pro Lys Ser Gln Ile Ala Ala Glu Ile His Tyr
 225 230 235 240
 Ala Ala Ile Asp Asp Ile Leu Asn Thr Tyr Pro Asp Ile Asp Tyr Ile
 245 250 255
 Trp Met Trp Leu Asn Glu His Ser Phe Met Gly Val Asp Val Gln Lys
 260 265 270
 Ala Leu Arg Asp Lys Pro Phe Ala Arg Ala Tyr Gln Glu Asn Gln Ala
 275 280 285
 Leu Phe Lys Glu Ala Ala Asp Ser Ser Ala Arg Phe Val Gly Val Trp
 290 295 300
 Ala Leu Glu Tyr Met Lys Leu Thr Tyr Lys His Leu Lys Ser Lys Gly
 305 310 315 320
 Ser Arg Ala Lys Leu Ile Leu Gly Gly Trp Gly Gly Gly His Gln Leu
 325 330 335
 Pro Ser Leu Leu Lys Gly Leu Asp Arg Ala Leu Pro Gln Asp Ile Ile
 340 345 350
 Phe Ser Cys Leu Asn Pro Asp Leu Gly Lys Ser Pro Gln Pro Asp Phe
 355 360 365
 Leu Glu Glu Ile Ala Arg Asn Arg Ser Val Trp Ala Val Pro Trp Leu
 370 375 380
 Glu Gly Asp His Gln Leu Trp His Phe Gln Pro Arg Val Asn Met Met
 385 390 395 400
 Arg Glu Gln Val Lys Leu Ala Ala Glu Gln Asn Leu Asp Gly Val Ile
 405 410 415
 Ala Ile His Trp Arg Thr Glu Glu Pro Arg Phe Asn Phe Arg Thr Phe
 420 425 430
 Ala Arg Phe Ala Ser Asp Lys Gly Ala Asp Glu Ser Val Asp Gln Leu
 435 440 445
 Tyr Asp Arg Tyr Leu Thr Glu Glu Phe Gly Glu Glu Ala Ala Lys Glu
 450 455 460
 Met Thr Pro Leu Leu Ala Arg Met Asp Arg Glu Gln Ile Gln Trp Asn
 465 470 475 480
 Val Pro Ser Pro Glu Phe Tyr Ala Tyr Thr Pro Glu Trp Gly Leu Leu
 485 490 495
 Asp Glu Asn Asn Val Arg Ile Arg Gln Glu Leu Val Ser Ser Gly Glu
 500 505 510
 Ser Leu Leu Lys Lys Leu Arg Gly Glu Lys Arg Glu Asn Leu Lys Arg

515 520 525
 Phe Ile Ala Met Phe Arg Phe Glu Leu Leu Leu Gly Glu Val Asp Arg
 530 535 540
 Ala Met Met Pro Ala Phe Ile Leu Lys Lys Lys Glu Val Gln Gly Glu
 545 550 555 560
 Lys Ile Asn Gly Ser Gln Glu Tyr Met Asp Ala Tyr Arg Leu Leu Val
 565 570 575
 Ser Ala Pro Val Lys Glu Met Phe Asp Thr Tyr Met Glu Arg Val His
 580 585 590
 Ser Arg Gly Glu Leu Gly Val Leu Ser Ser Leu Asn Gln Arg Val Trp
 595 600 605
 Arg Glu Tyr Asn Asp Leu Lys Ile Tyr Leu Glu Asn Lys Ile Lys Glu
 610 615 620
 Lys
 625

<210> 6017

<211> 219

<212> PRT

<213> B.fragilis

<400> 6017

Arg Tyr Lys Asp Met Lys Lys Leu Ile Ile Phe Asp Leu Asp Gly Thr
 1 5 10 15
 Leu Leu Asn Thr Ile Ala Asp Leu Ala His Ser Thr Asn His Ala Leu
 20 25 30
 Gln Thr Leu Gly Tyr Pro Thr His Glu Val Ala Ser Tyr Asn Phe Met
 35 40 45
 Val Gly Asn Gly Ile Asn Lys Leu Phe Glu Arg Ala Leu Pro Glu Gly
 50 55 60
 Glu Lys Thr Glu Glu Asn Val Leu Arg Val Arg Lys Glu Phe Leu Leu
 65 70 75 80
 His Tyr Asp Arg His Asn Ala Asp Glu Ser Arg Pro Tyr Pro Gly Ile
 85 90 95
 Pro Glu Leu Leu Glu Thr Leu Gln His Lys Gly Tyr Lys Leu Ala Val
 100 105 110
 Ala Ser Asn Lys Tyr Gln Ala Ala Thr Glu Lys Leu Ile Ala His Tyr
 115 120 125
 Phe Pro Gly Ile Arg Phe Val Ala Val Phe Gly Gln Arg Glu Gly Val
 130 135 140
 Lys Val Lys Pro Asp Pro Ala Val Val His Asp Ile Leu Gln Ile Ala
 145 150 155 160
 Asp Val Ser Lys Asp Glu Val Leu Tyr Val Gly Asp Ser Gly Val Asp
 165 170 175
 Met Gln Thr Ala Ile Asn Ser Gly Val Thr Ser Cys Gly Val Thr Trp
 180 185 190
 Gly Phe Arg Pro Arg Thr Glu Leu Glu Ser Phe Cys Pro Asp Tyr Ile
 195 200 205
 Val Asp Lys Ala Glu Thr Ile Leu Ser Ile Val
 210 215

<210> 6018

<211> 498

<212> PRT

<213> B.fragilis

<400> 6018

Ser Thr Lys Asp Met Asn Phe Leu Ser Leu Phe Val Leu Ile Pro Leu
 1 5 10 15

Leu	Met	Leu	Gly	Leu	Tyr	Leu	Ala	Lys	Ser	Ile	Lys	Ala	Ile	Arg	
		20					25				30				
Gly	Val	Met	Val	Ala	Gly	Ser	Thr	Ala	Leu	Leu	Ile	Leu	Ser	Val	Val
		35					40				45				
Leu	Thr	Phe	Leu	Tyr	Leu	Gly	Glu	Arg	Gln	Ala	Gly	Ala	Thr	Ala	Glu
	50					55					60				
Met	Leu	Phe	Arg	Ala	Asp	Thr	Val	Trp	Tyr	Ala	Pro	Leu	His	Ile	Ala
65					70					75					80
Tyr	Ser	Val	Gly	Val	Asp	Gly	Ile	Ser	Val	Ala	Met	Leu	Leu	Leu	Ser
				85					90					95	
Ala	Val	Ile	Val	Phe	Thr	Gly	Thr	Phe	Ala	Ser	Trp	Lys	Leu	Arg	Pro
			100					105					110		
Leu	Thr	Lys	Glu	Tyr	Phe	Leu	Trp	Phe	Thr	Leu	Leu	Ser	Met	Gly	Val
		115					120					125			
Phe	Gly	Phe	Phe	Ile	Ser	Ile	Asp	Leu	Phe	Thr	Met	Phe	Met	Phe	Tyr
	130					135					140				
Glu	Ile	Ala	Leu	Ile	Pro	Met	Tyr	Leu	Leu	Ile	Gly	Val	Trp	Gly	Ser
145					150					155					160
Gly	Arg	Lys	Glu	Tyr	Ala	Ala	Met	Lys	Leu	Thr	Leu	Met	Leu	Met	Gly
				165					170					175	
Gly	Ser	Ala	Phe	Leu	Leu	Ile	Gly	Ile	Leu	Gly	Ile	Phe	Phe	Gly	Ala
			180					185					190		
Gly	Gly	Thr	Thr	Met	Asn	Ile	Leu	Glu	Ile	Ala	Gln	Leu	His	Asn	Ile
		195					200					205			
Pro	Phe	Ala	Gln	Gln	Cys	Ile	Trp	Phe	Pro	Leu	Thr	Phe	Leu	Gly	Phe
	210					215					220				
Gly	Val	Leu	Gly	Ala	Leu	Phe	Pro	Phe	His	Thr	Trp	Ser	Pro	Asp	Gly
225					230					235					240
His	Ala	Ser	Ala	Pro	Thr	Ala	Val	Ser	Met	Leu	His	Ala	Gly	Val	Leu
				245					250					255	
Met	Lys	Leu	Gly	Gly	Tyr	Gly	Cys	Phe	Arg	Ile	Ala	Met	Tyr	Leu	Met
			260					265				270			
Pro	Glu	Ala	Ala	Asn	Glu	Leu	Gly	Trp	Ile	Phe	Leu	Ile	Leu	Thr	Gly
		275					280					285			
Ile	Ser	Val	Val	Tyr	Gly	Ala	Phe	Ser	Ala	Cys	Val	Gln	Thr	Asp	Leu
	290					295					300				
Lys	Tyr	Ile	Asn	Ala	Tyr	Ser	Ser	Val	Ser	His	Cys	Gly	Leu	Val	Leu
305					310					315					320
Phe	Ala	Ile	Leu	Met	Met	Asn	Gln	Thr	Ala	Ala	Thr	Gly	Ala	Val	Leu
				325					330					335	
Gln	Met	Leu	Ser	His	Gly	Leu	Met	Thr	Ala	Leu	Phe	Phe	Ala	Leu	Ile
			340					345					350		
Gly	Met	Ile	Tyr	Gly	Arg	Thr	His	Thr	Arg	Asp	Val	Arg	Glu	Leu	Asn
		355					360					365			
Gly	Leu	Met	Lys	Val											

Ile Pro

<210> 6019

<211> 531

<212> PRT

<213> B.fragilis

<400> 6019

Asn	Met	Glu	Glu	Ile	Lys	Tyr	Ile	Glu	Pro	Ala	Ala	Leu	His	Asp	Glu	1	5	10	15
Met	Leu	Arg	Leu	Arg	Asn	Glu	Lys	Gln	Met	Asp	Phe	Leu	Glu	Ser	Leu	20	25	30	
Thr	Gly	Met	Asp	Trp	Gly	Val	Ala	Asp	Glu	Gly	Asp	Ala	Pro	Asn	Val	35	40	45	
Thr	Arg	Gly	Leu	Gly	Val	Val	Tyr	His	Leu	Glu	Ser	Thr	Val	Thr	Gly	50	55	60	
Glu	Arg	Ile	Ala	Ile	Lys	Thr	Ser	Thr	Asn	Asn	Arg	Glu	Thr	Pro	Glu	65	70	75	80
Ile	Pro	Ser	Val	Ser	Asp	Ile	Trp	Lys	Ala	Ala	Asp	Phe	Asn	Glu	Arg	85	90	95	
Glu	Val	Phe	Asp	Tyr	Tyr	Gly	Ile	Val	Phe	Ile	Gly	His	Pro	Asp	Met	100	105	110	
Arg	Arg	Leu	Tyr	Leu	Arg	Asn	Asp	Trp	Val	Gly	His	Pro	Met	Arg	Lys	115	120	125	
Asp	Asn	Asn	Pro	Glu	Lys	Asp	Asn	Pro	Leu	Arg	Met	Asp	Asn	Glu	Glu	130	135	140	
Thr	Tyr	Asp	Thr	Thr	Arg	Glu	Ile	Glu	Leu	Asn	Pro	Asp	Gly	Thr	Tyr	145	150	155	160
Gln	Thr	Gln	Glu	Asn	Val	Ile	Phe	Asp	Asp	Arg	Glu	Tyr	Val	Val	Asn	165	170	175	
Ile	Gly	Pro	Gln	His	Pro	Ala	Thr	His	Gly	Val	Met	Arg	Phe	Arg	Val	180	185	190	
Ser	Leu	Glu	Gly	Glu	Thr	Ile	Lys	Lys	Leu	Asp	Ala	Asn	Cys	Gly	Tyr	195	200	205	
Ile	His	Arg	Gly	Ile	Glu	Lys	Met	Asn	Glu	Ser	Leu	Thr	Tyr	Pro	Gln	210	215	220	
Thr	Leu	Ala	Leu	Thr	Asp	Arg	Leu	Asp	Tyr	Leu	Gly	Ala	His	Gln	Asn	225	230	235	240
Arg	His	Ala	Leu	Cys	Met	Cys	Ile	Glu	Lys	Ala	Met	Gly	Ile	Glu	Val	245	250	255	
Ser	Glu	Arg	Val	Lys	Tyr	Ile	Arg	Thr	Ile	Met	Asp	Glu	Leu	Gln	Arg	260	265	270	
Ile	Asp	Ser	His	Leu	Leu	Phe	Tyr	Ser	Cys	Leu	Ala	Met	Asp	Leu	Gly	275	280	285	
Ala	Leu	Thr	Ala	Phe	Phe	Tyr	Gly	Phe	Arg	Asp	Arg	Glu	Met	Ile	Leu	290	295	300	
Asp	Met	Phe	Glu	Glu	Thr	Cys	Gly	Gly	Arg	Leu	Ile	Met	Asn	Tyr	Asn	305	310	315	320
Thr	Ile	Gly	Gly	Val	Gln	Ala	Asp	Leu	His	Pro	Asn	Phe	Ile	Pro	Arg	325	330	335	
Val	Lys	Lys	Phe	Ile	Pro	Tyr	Leu	Arg	Gly	Ile	Ile	His	Glu	Tyr	His	340	345	350	
Asp	Val	Phe	Thr	Gly	Asn	Val	Ile	Ala	Arg	Gln	Arg	Leu	Lys	Gly	Val	355	360	365	
Gly	Val	Leu	Ser	Arg	Glu	Asp	Ala	Ile	Ser	Phe	Gly	Cys	Thr	Gly	Gly	370	375	380	
Thr	Gly	Arg	Ala	Ser	Gly	Trp	Ala	Cys	Asp	Val	Arg	Lys	Arg	Met	Pro				

385 390 395 400
 Tyr Gly Val Tyr Asp Lys Val Asp Phe Lys Glu Ile Val Tyr Thr Glu
 405 410 415
 Gly Asp Ser Phe Ala Arg Tyr Met Val Arg Met Asp Glu Ile Met Glu
 420 425 430
 Ser Leu Asn Ile Ile Glu Gln Leu Ile Asp Asn Ile Pro Glu Gly Pro
 435 440 445
 Ile Gln Glu Lys Met Lys Pro Ile Ile Arg Val Pro Glu Gly Ser Tyr
 450 455 460
 Tyr Thr Ala Val Glu Gly Ser Arg Gly Glu Phe Gly Val Phe Leu Glu
 465 470 475 480
 Ser His Gly Asp Lys Thr Pro Tyr Arg Leu His Tyr Arg Ser Thr Gly
 485 490 495
 Leu Pro Leu Val Ser Ala Val Asp Thr Ile Cys Arg Gly Ala Lys Ile
 500 505 510
 Ala Asp Leu Ile Ala Ile Gly Gly Thr Leu Asp Tyr Val Val Pro Asp
 515 520 525
 Ile Asp Arg
 530

<210> 6020

<211> 536

<212> PRT

<213> B.fragilis

<400> 6020

Ala Leu Leu Asp Pro Leu Asp Glu Lys Ala Tyr Asp Phe Val Ser Pro
 1 5 10 15
 Glu Gln Leu Gly Asp Ser Glu Ser Ala Ala Ser Gln Leu Val Thr Gly
 20 25 30
 Ala Tyr Asn Thr Val Ile Thr Ser Phe Ile Ala Pro Gly Ser Tyr Leu
 35 40 45
 Tyr Leu Thr Asn Met Asp Cys Asp Tyr Ala Ser Gly Ala Ser Trp Ala
 50 55 60
 Phe Gly Asn Val Gly Ala Gly Asn Pro Gln Gly Phe Trp Gly Ile Asp
 65 70 75 80
 His Met Trp Gln Gly Ser Tyr Thr Leu Ile His Arg Ala Asn Leu Gly
 85 90 95
 Ile Ser Lys Ile Ser Ala Met Ser Asn Leu Ser Gln Glu Ser Lys Gln
 100 105 110
 Asp Ala Leu Ala Gln Leu Cys Phe Leu Lys Ala Trp Ala Tyr Phe Asn
 115 120 125
 Leu Val Arg Asn Tyr Gly Pro Val Pro Ile Phe Arg Lys Ser Ile Ser
 130 135 140
 Glu Gly Glu Ala Met Ser Gln Pro Arg Ala Ser Val Ser Asp Val Tyr
 145 150 155 160
 Ala His Ile Ile Glu Leu Leu Glu Gln Ala Glu Gly Met Tyr Ser Lys
 165 170 175
 Asp Asp Ala Gly Phe Val Val Gly His Ala Ser Asn Gly Ala Ala Lys
 180 185 190
 Ala Leu Leu Ala Lys Val Tyr Val Thr Met Ala Ser Gly Ala Met Ser
 195 200 205
 Gly Val Pro Ile Val Val Lys Gly Gly Asn Pro Asn Ile Phe Glu Pro
 210 215 220
 Gln Pro Ile Thr His Ile Ala Lys Thr Val Ala Gly Tyr Glu Ser Phe
 225 230 235 240
 Asp Pro Ala Lys Tyr Tyr Ala Leu Ala Arg Asp Lys Ala Trp Glu Val
 245 250 255
 Ile Asn Glu Tyr Thr Leu Phe Asp Asn Tyr Met Asp Val Trp Ala Ile

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<210> 6021
<211> 336
<212> PRT
<213> B.fragilis
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Asn	Val	Met	Glu	Leu	Ser	Leu	Tyr	Ile	Lys	Asp	Lys	Leu	Val	Ser	Gly
1				5					10					15	
Lys	Arg	Val	Ala	Ile	Pro	Ile	Met	Thr	His	Pro	Gly	Ile	Glu	Leu	Leu
			20					25					30		
Glu	Lys	Arg	Val	Leu	Asp	Ala	Val	Thr	Asn	Gly	Glu	Ile	His	Tyr	His
			35				40					45			
Ala	Ile	Arg	Ala	Leu	Asn	Glu	Cys	Phe	Pro	Gln	Ser	Ala	Ala	Cys	Thr
			50			55					60				
Thr	Ile	Met	Asp	Leu	Thr	Val	Glu	Ala	Glu	Ala	Phe	Gly	Ala	Arg	Leu
65					70					75					80
Ser	Met	Ser	Pro	Asn	Glu	Val	Pro	Ser	Val	Cys	Gly	Arg	Leu	Leu	Thr
				85					90					95	
Gly	Tyr	Ala	Asp	Val	Glu	Ala	Leu	Gln	Ile	Pro	Ser	Val	Glu	Ser	Gly
			100					105					110		
Arg	Met	Pro	Gln	Tyr	Leu	Leu	Ala	Asp	Arg	Leu	Ala	Ala	Glu	Gly	Ile
			115				120					125			
Asp	Lys	Pro	Val	Leu	Ala	Gly	Cys	Ile	Gly	Pro	Tyr	Ser	Leu	Ala	Gly

130 135 140
 Arg Leu Tyr Asp Met Thr Glu Ile Met Met Ala Ile Tyr Thr Glu Pro
 145 150 155 160
 Asp Thr Val Leu Leu Leu Glu Lys Cys Thr Glu Phe Ile Leu Arg
 165 170 175
 Tyr Cys Leu Ala Ile Lys Glu Thr Gly Val Ala Gly Val Ile Met Ala
 180 185 190
 Glu Pro Ala Ala Gly Leu Leu Ser Asn Glu Asp Cys Gln Arg Tyr Ser
 195 200 205
 Ser Val Tyr Val Lys Arg Ile Ile Asp Ala Val Gln Asp Asp Ser Phe
 210 215 220
 Ala Val Ile Leu His Asn Cys Gly Asn Thr Gly His Cys Thr Ala Ala
 225 230 235 240
 Met Leu Ala Thr Gly Ala Lys Gly Tyr His Phe Gly Asn Lys Ala Asp
 245 250 255
 Met Ile Thr Ala Leu Arg Glu Cys Pro Ser Asp Val Trp Val Met Gly
 260 265 270
 Asn Leu Asp Pro Val Gly Val Phe Arg Val Leu Thr Pro Glu Asp Val
 275 280 285
 Phe Ala Arg Thr Glu Glu Leu Leu Thr Cys Thr Gly Glu Tyr Ala Asn
 290 295 300
 Phe Ile Ile Ser Thr Gly Cys Asp Thr Pro Pro Glu Val Pro Phe Asp
 305 310 315 320
 Asn Ile Gln Ala Phe Tyr Leu Ala Val Glu Lys Tyr Asn Lys Gly Arg
 325 330 335

<210> 6022

<211> 485

<212> PRT

<213> B.fragilis

<400> 6022

Lys Lys Met Asp Tyr Ser Gln Phe Leu Tyr Met Lys Glu Glu Leu Ser
 1 5 10 15
 Leu Ile Ala Val Ile Leu Ile Leu Phe Val Val Asp Leu Phe Thr Cys
 20 25 30
 Pro Asp Gln Lys Gly Ala Ala Pro Lys Val Asn Val Arg Ser Leu Thr
 35 40 45
 Leu Pro Ala Val Ile Leu Met Thr Leu His Thr Val Ile Asn Leu Phe
 50 55 60
 Pro Gly Thr Pro Ala Glu Ala Phe Gly Gly Met Tyr Gln Tyr Thr Pro
 65 70 75 80
 Met Gln Thr Ile Ile Lys Ala Val Leu Asn Val Gly Thr Ile Ile Val
 85 90 95
 Leu Leu Met Ala His Glu Trp Leu Arg Arg Glu Asp Thr Arg Ile Lys
 100 105 110
 Gln Gly Glu Phe Tyr Val Leu Thr Leu Ser Thr Leu Leu Gly Met Tyr
 115 120 125
 Phe Met Ile Ser Ala Gly His Phe Leu Met Phe Phe Ile Gly Leu Glu
 130 135 140
 Met Ala Ser Ile Pro Met Ala Ala Leu Val Ala Phe Asp Lys Tyr Arg
 145 150 155 160
 His His Ser Ala Glu Ala Gly Ala Lys Tyr Ile Leu Thr Ala Leu Phe
 165 170 175
 Ser Ser Ala Leu Leu Phe Gly Leu Ser Met Ile Tyr Gly Thr Ser
 180 185 190
 Gly Thr Leu Tyr Phe Asn Asp Leu Pro Gly His Ile Thr Gly Asn Met
 195 200 205
 Leu Gln Ile Met Ala Phe Val Phe Phe Phe Ala Gly Met Gly Phe Lys

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      210                      215                      220
Ile Ser Leu Val Pro Phe His Leu Trp Thr Ala Asp Val Tyr Glu Gly
225                      230                      235                      240
Ala Pro Thr Ala Val Thr Ser Tyr Leu Ser Val Ile Ser Lys Gly Ser
      245                      250                      255
Ala Ala Phe Val Leu Met Thr Ile Leu Met Lys Val Phe Ala Pro Met
      260                      265                      270
Val Ala Gln Trp Gln Glu Val Leu Phe Trp Val Thr Ile Ala Ser Ile
      275                      280                      285
Thr Ile Ala Asn Leu Phe Ala Ile Arg Gln Gln Asn Leu Lys Arg Phe
      290                      295                      300
Met Ala Phe Ser Ala Ile Ser Gln Ala Gly Tyr Ile Met Leu Gly Val
305                      310                      315                      320
Ile Gly Gly Ser Glu Met Gly Met Thr Ala Leu Val Tyr Tyr Val Leu
      325                      330                      335
Val Tyr Leu Ala Ala Asn Leu Gly Val Phe Ala Val Ile Ser Ile Val
      340                      345                      350
Glu Gln Arg Ser Asn Lys Val Glu Ile Asp Asp Tyr Asn Gly Leu Tyr
      355                      360                      365
Lys Thr Asn Pro Lys Leu Ala Phe Ile Met Thr Leu Ala Leu Phe Ser
      370                      375                      380
Leu Ala Gly Ile Pro Pro Phe Ala Gly Phe Phe Ser Lys Phe Phe Ile
385                      390                      395                      400
Phe Met Ala Ala Phe Asn Ser Gly Phe His Leu Leu Val Phe Ile Ala
      405                      410                      415
Leu Ile Asn Thr Val Val Ser Leu Tyr Tyr Tyr Leu Leu Ile Val Lys
      420                      425                      430
Ala Met Tyr Ile Asn Pro Asn Glu Glu Pro Ile Pro Thr Phe Arg Ser
      435                      440                      445
Asp Asn Tyr Thr Lys Val Ser Leu Ala Leu Cys Thr Leu Gly Ile Ile
      450                      455                      460
Ala Leu Gly Ile Ala Ser Cys Ile Tyr Gln Gly Ile Asp Lys Phe Ser
465                      470                      475                      480
Phe Gly Met Gly Met
      485

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<210> 6023

<211> 126

<212> PRT

<213> B.fragilis

<400> 6023

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Thr Tyr Tyr Trp Ile Met Asn Phe Thr Leu Leu Val Val Val Leu Leu
1          5          10          15
Thr Ala Ile Ala Phe Val Gly Val Val Ile Ala Leu Ser Asn Ala Ile
      20          25          30
Ser Pro Arg Ser Tyr Asn Ala Gln Lys Phe Glu Ala Tyr Glu Cys Gly
      35          40          45
Ile Pro Thr Arg Gly Lys Ser Trp Met Gln Phe Arg Val Gly Tyr Tyr
      50          55          60
Leu Phe Ala Ile Leu Phe Leu Met Phe Asp Val Glu Thr Val Phe Leu
65          70          75          80
Phe Pro Trp Ala Val Ile Ala Arg Asp Leu Gly Pro Gln Gly Leu Ile
      85          90          95
Ser Ile Leu Phe Phe Leu Ala Glu Leu Gly Leu Gly Pro Cys Leu Cys
      100          105          110
Leu Glu Glu Arg Ser Thr Val Met Glu Ile Met Lys Lys Pro
      115          120          125

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Ala Ser Asp Val Val Val Tyr His Pro Arg Ser His Arg Ile Leu Thr
 290 295 300
 Thr Pro Leu Leu Ser Thr Ala Ser Phe Glu Thr Phe Pro Ala Phe Ser
 305 310 315 320
 Pro Asp Gly Arg Thr Leu Tyr Phe Cys Ser Ala Glu Gln Lys Glu Met
 325 330 335
 Pro Val Arg Tyr Lys Asp Val Lys Tyr Ser Leu Cys Ser Ile Ala Phe
 340 345 350
 His Pro Glu Asp Gly Thr Phe Gly Asp Arg Ile Asp Thr Leu Ile Ser
 355 360 365
 Ala Arg Thr Leu Asp Lys Ser Ile Ser Phe Pro Lys Pro Ser Phe Asp
 370 375 380
 Gly Lys Tyr Leu Met Phe Thr Leu Ser Asp Tyr Gly Asn Phe Ser Ile
 385 390 395 400
 Trp His Lys Glu Ala Asp Leu Trp Leu Leu Asp Leu Lys Thr Gly Thr
 405 410 415
 Tyr Arg Asn Leu Glu Glu Val Asn Ser Asp Asp Thr Glu Ser Tyr His
 420 425 430
 Asn Trp Ser Ser Asn Ser His Trp Phe Val Phe Ser Ser Arg Arg Gly
 435 440 445
 Asp Gly Leu Tyr Thr Arg Leu Tyr Ile Ser Ser Val Asp Gly Gln Gly
 450 455 460
 Arg Ile Gly Lys Pro Phe Leu Leu Pro Gln Gln Asp Pro Tyr Thr Phe
 465 470 475 480
 Tyr Asp Gln Leu Ile Tyr Ser Tyr Asn Val Pro Glu Phe Val Ser Val
 485 490 495
 Pro Val Gln Trp Asp Lys Arg Glu Met Ala Lys Gly Leu Met Ser Lys
 500 505 510
 Glu Arg Val Lys Val Lys
 515

<210> 6026

<211> 251

<212> PRT

<213> B.fragilis

<400> 6026

Cys Gln Cys Ser Arg Asn Asn Gly Gln Glu Val Asp Lys Arg Leu Leu
 1 5 10 15
 Asn Met Pro Leu Met Asn Ser His Ile Val Glu Glu Cys Leu Pro Phe
 20 25 30
 Thr Ser Leu Arg Leu Asp Pro Glu Asp Ile Asn Leu Ser Met Gly Ala
 35 40 45
 Gly Tyr Val Pro Asp Ala Glu Ile Gln Ala Ile Ser Asp Ala Leu Glu
 50 55 60
 Thr Glu Ile Ala Gly Ile Cys Thr Pro Arg Phe Leu Tyr Ala Leu Phe
 65 70 75 80
 Asp Ala Glu Pro Ala Gly Thr Cys Glu Val Gly Val Asn Gly Ile Ser
 85 90 95
 Leu Lys Thr Gly Ser Val Ile Thr Pro Tyr Leu Lys Asp Ala Ala Gly
 100 105 110
 Tyr Val Leu Phe Val Ala Thr Ala Gly Tyr Glu Phe Glu Ala Phe Gln
 115 120 125
 His Arg Ile Gly Ser Gln Gly Asp Ile Leu Arg Glu Phe Leu Leu Asp
 130 135 140
 Ala Tyr Gly Ser Ala Ile Ala Glu Ala Val Val Arg Glu Val Cys Arg
 145 150 155 160
 Lys Val Glu Ser Arg Met Phe Pro Leu Gly Tyr Gly Val Ser His Pro
 165 170 175

Tyr Ser Pro Gly Tyr Cys Gly Trp His Val Thr Gln Gln Gln Leu Leu
 180 185 190
 Phe Ser Cys Leu Pro Glu Phe Pro Cys Gly Val Arg Leu Ser Asp Ser
 195 200 205
 Ser Leu Met Ser Pro Ile Lys Ser Val Ser Gly Ile Ile Ala Tyr Gly
 210 215 220
 Pro Cys Ile Val Lys Arg Lys Tyr Gly Cys Glu Leu Cys Gly Lys Ala
 225 230 235 240
 Asp Cys Tyr Lys Asn Arg Asn Lys Leu Asn Arg
 245 250

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<211> 114

<212> PRT

<213> B.fragilis

<400> 6027

Gln Gln Lys Gly Lys Asn Leu Asn Leu Lys Thr Glu Lys Glu Thr Leu
 1 5 10 15
 Met Gly Ser Lys Lys Thr Asp Leu Met Arg Ile Ser Tyr Phe Val Ala
 20 25 30
 Ile Val Ile Leu Val Cys Leu Ile Gly Asn Leu Lys Asp Leu Trp Leu
 35 40 45
 Gln Ser Trp Thr Asp Leu Ile Ile Tyr Leu Ile Val Leu Phe Ala Ala
 50 55 60
 Ala Glu Cys Leu Phe Ser Thr Phe Ala Arg Ile Arg Ala Val Gly Glu
 65 70 75 80
 Gln Lys Gln Pro Arg Trp Leu Thr Ser Ile Ser Leu Leu Ile Tyr Gly
 85 90 95
 Ile Leu Phe Leu Gly Thr Leu Phe Phe Ile Gly Asp Phe Leu Ile Asn
 100 105 110
 Lys Leu

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<211> 172

<212> PRT

<213> B.fragilis

<400> 6028

Lys Asn Met Gly Leu Thr Leu Glu Thr Val Val Phe Tyr Phe Leu Ala
 1 5 10 15
 Val Phe Ile Ile Ala Met Ser Ile Leu Thr Val Thr Thr Gln Arg Ile
 20 25 30
 Val Arg Ser Ala Thr Tyr Leu Leu Phe Val Leu Phe Gly Thr Ala Gly
 35 40 45
 Ile Tyr Phe Leu Leu Gly Tyr Thr Phe Leu Gly Ser Val Gln Ile Met
 50 55 60
 Val Tyr Ala Gly Gly Ile Val Val Leu Tyr Val Phe Ser Ile Leu Leu
 65 70 75 80
 Thr Ser Gly Glu Gly Asp Arg Ala Ala His Leu Lys Arg Ser Lys Phe
 85 90 95
 Leu Ala Gly Leu Val Thr Thr Ile Ile Gly Ala Ile Leu Val Leu Phe
 100 105 110
 Ile Thr Leu Thr His Lys Phe Val Pro Thr Ser Asp Pro Glu Pro Val
 115 120 125
 Glu Ile Ser Ile Lys Thr Ile Gly His Ala Leu Leu Ser Ser Gly Lys
 130 135 140
 Tyr Gly Tyr Val Leu Pro Phe Glu Ala Val Ser Ile Leu Leu Leu Ala

145 150 155 160
 Cys Ile Val Gly Gly Leu Leu Ile Ala Arg Lys Arg
 165 170

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 <212> PRT
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<400> 6029
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 Met Ala Gln Leu Gly Trp Trp Glu Ala Asp Phe Thr Ala Gly His Tyr
 20 25 30
 Val Cys Ser Glu Tyr Leu Cys Asp Leu Leu Gly Leu Glu Gly Asn Thr
 35 40 45
 Ile Ser Phe Thr Asp Phe Arg Lys Arg Val Arg Glu Asp Tyr Gln Glu
 50 55 60
 Gln Ile Val Arg Glu Phe Asn Ala Ser Ile His Arg Glu Phe Tyr Glu
 65 70 75 80
 Gln Thr Phe Pro Ile His Ser Lys Glu Gly Ile Val Trp Leu His Thr
 85 90 95
 Arg Leu Gly Glu Arg Glu Glu Ile Pro Gly Arg Gly Val Val Ser Phe
 100 105 110
 Gly Ile Met Gln Arg Val Glu Ala Pro Asn Asp Thr Ser Glu Arg Val
 115 120 125
 Leu Glu Arg Val Asn Asp Leu Leu Tyr Arg Gln Asn Ser Ile Ser His
 130 135 140
 Ser Leu Leu Arg Phe Leu Lys Asp Asp Ser Val Asp Leu Cys Ile Met
 145 150 155 160
 Glu Ile Leu Lys Asp Ile Leu Asp Leu Phe His Gly Gly Arg Val Tyr
 165 170 175
 Ile Phe Glu Tyr Asp Glu Tyr Tyr Arg Tyr Gln Asp Cys Thr Tyr Glu
 180 185 190
 Val Val Ala Glu Gly Val Leu Pro Glu Ile Asp Ser Leu Gln Arg Ile
 195 200 205
 Pro Thr Asp Ser Leu Pro Trp Trp Arg Gln Gln Thr Leu Ser Gly Lys
 210 215 220
 Pro Val Ile Leu Asp Ser Leu Asp Gln Leu Pro Lys His Ala Lys Ala
 225 230 235 240
 Glu Tyr Ala Ile Leu Ser Arg Gln Asn Ile Lys Ser Leu Met Ile Thr
 245 250 255
 Pro Leu Ile Ala Gly Glu His Val Trp Gly Tyr Met Gly Ile Asp Leu
 260 265 270
 Val Lys Asn Tyr Arg Asn Trp Asn Asn Glu Asp Phe Gln Trp Leu Ser
 275 280 285
 Ser Leu Ala Asn Ile Ile Ser Ile Cys Ile Glu Leu Arg Lys Ala Lys
 290 295 300
 Asp Glu Ala Val Arg Glu Arg Ser Phe Leu Arg Asn Leu Phe Arg Phe
 305 310 315 320
 Met Pro Met Gly Tyr Ile Arg Met Thr Met Val Arg Asp Ala Ala Gly
 325 330 335
 Leu Pro Cys Asp Tyr Arg Ile Ala Asp Ala Asn Asp Leu Ser Ser Glu
 340 345 350
 Leu Ile Gly Met Pro Leu Ser Asp Tyr Val Gly Cys Leu Ala Ser Glu
 355 360 365
 Leu His Ala Asp Phe Lys Ala Lys Val Asp Tyr Leu Leu Asp Val Met
 370 375 380
 Glu Gly Ser Val His Lys Glu Thr Asp Val Tyr Phe His Arg Thr Gln

385					390					395				400
Arg	Ser	Ser	His	Cys	Ile	Val	Tyr	Ser	Pro	Glu	Lys	Asp	Glu	Val
				405					410				415	
Ala	Leu	Phe	Leu	Asp	Ser	Thr	Glu	Thr	Ile	Arg	Ala	His	Arg	Ala
			420					425					430	Leu
Asp	Arg	Ser	Glu	Lys	Leu	Phe	Lys	Asn	Ile	Phe	Ala	Asn	Ile	Pro
		435					440					445		Ala
Gly	Val	Glu	Ile	Tyr	Asp	Lys	Asp	Gly	Asn	Leu	Leu	Asp	Leu	Asn
	450					455					460			
Trp	Asp	Met	Glu	Thr	Phe	Gly	Val	Lys	Asp	Lys	Ala	Asp	Val	Met
465					470					475				480
Val	Asn	Phe	Phe	Glu	Asn	Pro	Asn	Val	Pro	Leu	Glu	Ile	Arg	Glu
				485					490					495
Val	Arg	Asn	Glu	Asp	Leu	Val	Asp	Phe	Arg	Leu	Asn	Tyr	Ser	Phe
		500						505					510	Asn
Lys	Ala	Ser	Asp	Tyr	Tyr	His	Ser	Asp	Lys	Ser	Asn	Ile	Ile	Glu
	515						520					525		Leu
Tyr	Thr	Lys	Val	Ser	Lys	Leu	Phe	Asp	Ser	Gln	Gly	Asn	Phe	Asn
	530					535					540			Gly
Tyr	Val	Leu	Ile	Asn	Ile	Asp	Asn	Thr	Glu	Arg	Ile	Asp	Ala	Ile
545					550					555				560
Arg	Ile	Arg	Asp	Phe	Glu	Asn	Phe	Phe	Leu	Leu	Ile	Ser	Asp	Tyr
				565					570					575
Lys	Val	Gly	Tyr	Ala	Lys	Leu	Asn	Leu	Leu	Ser	Lys	Arg	Gly	Tyr
		580						585					590	Ala
Ile	Lys	Gln	Trp	Phe	Lys	Asn	Met	Gly	Glu	Thr	Glu	Asp	Ile	Pro
		595					600					605		Leu
Ser	Ser	Val	Val	Gly	Val	Tyr	Asp	Lys	Met	His	Pro	Glu	Asp	Arg
	610					615					620			Gln
Lys	Val	Phe	Asp	Phe	Tyr	Glu	Lys	Val	Leu	Ala	Gly	Glu	Glu	Lys
625					630					635				640
Phe	Arg	Ser	Glu	Met	Arg	Ile	Leu	Lys	Pro	Gly	Ala	Thr	Asn	Glu
				645					650					655
Asn	Trp	Val	Arg	Met	Asn	Val	Val	Val	Thr	Lys	Phe	Glu	Pro	Glu
		660						665					670	His
Gly	Glu	Val	Glu	Ile	Ile	Gly	Ile	Asn	Tyr	Asp	Ile	Thr	Glu	Leu
	675					680						685		Lys
Glu	Thr	Glu	Ala	Met	Leu	Ile	Glu	Ala	Lys	Glu	Lys	Ala	Glu	Asn
	690					695				700				Met
Asp	Arg	Leu	Lys	Ser	Ala	Phe	Leu	Ala	Asn	Met	Ser	His	Glu	Ile
705					710					715				720
Thr	Pro	Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Gly	Leu	Leu	Val	Asp
			725						730					735
Glu	Asp	Met	Glu	Glu	Arg	Cys	Glu	Tyr	Ile	Lys	Ile	Val	Gln	Glu
		740						745					750	Asn
Asn	Asp	Leu	Leu	Leu	Gln	Leu	Ile	Ser	Asp	Ile	Leu	Asp	Leu	Ser
		755					760					765		Lys
Ile	Glu	Ala	Gly	Thr	Phe	Glu	Phe	Thr	Tyr	Gly	Glu	Thr	Asp	Val
	770					775					780			Asn
Met	Leu	Cys	Glu	Asp	Ile	Val	Arg	Ser	Ser	Gln	Ile	Lys	Val	Pro
785					790					795				Gln
Gly	Val	Glu	Leu	Val	Phe	Asp	Pro	His	Pro	Ser	Asp	Cys	Thr	Val
			805						810					Ile
Ser	Asp	Arg	Asn	Arg	Leu	His	Gln	Val	Ile	Ser	Asn	Phe	Val	Asn
		820						825					830	Asn
Ala	Leu	Lys	Phe	Thr	Ser	Ser	Gly	Ser	Ile	His	Val	Gly	Tyr	Glu
	835						840					845		Lys
Lys	Glu	Gly	Gly	Val	Glu	Phe	Tyr	Val	Ser	Asp	Thr	Gly	Ile	Gly
	850					855					860			Ile

Ser Lys Glu Gln Leu Thr His Ile Phe Glu Arg Phe Val Lys Leu Asn
 865 870 875 880
 Ser Phe Ile His Gly Thr Gly Leu Gly Leu Ser Ile Cys Lys Ser Ile
 885 890 895
 Val Glu Gln Leu Gly Gly Val Ile Gly Val Asp Ser Glu Glu Gly Lys
 900 905 910
 Gly Ser Arg Phe Trp Phe Thr Ile Pro Tyr Ile Asn Ser Glu Gln Ser
 915 920 925
 Ile Val Asn Asp
 930

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<400> 6030
 Ile Lys Ser Ile Pro Tyr Glu Asp Phe Ile Asp Asn Glu Ser Leu Glu
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 Lys Met Val Lys Glu Leu Asn Glu Gly Gly Ala Asn Val Leu Val Gly
 20 25 30
 Val Leu Asp Asp Leu Ile Asn Trp Gly Arg Arg Asn Ser Leu Gly Pro
 35 40 45
 Leu Thr Phe Ala Thr Ser Cys Gly Ile Glu Phe Met Ala Leu Gly
 50 55 60
 Ala Ala Arg Tyr Asp Arg Ala Arg Phe Gly Phe Glu Val Ala Arg Ala
 65 70 75 80
 Ser Pro Arg Gln Ala Asp Met Ile Met Val Cys Gly Thr Ile Thr Asn
 85 90 95
 Lys Met Ala Pro Val Leu Lys Arg Leu Tyr Asp Gln Met Ala Asp Pro
 100 105 110
 Lys Tyr Val Ile Ala Val Gly Gly Cys Ala Val Ser Gly Gly Pro Val
 115 120 125
 Ser Gln Ile Leu Ser Cys Gly Glu Arg Ser Arg Gln Asp Ser Pro Gly
 130 135 140
 Arg Cys Ile Tyr Ser Arg Met Pro Ser Pro Pro Gly Ser Ile Leu Leu
 145 150 155 160
 Arg Tyr Asp Ala Thr Ala Thr Glu Ser Glu Asp Arg Glu Ile Leu Arg
 165 170 175
 Arg Ser Lys Pro Glu Arg Glu Lys Thr
 180 185

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 <212> PRT
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<400> 6031
 Thr Leu Cys Ile Thr Leu Asn Lys Lys Arg Met Lys Lys Ile Ser Ile
 1 5 10 15
 Leu Phe Met Leu Leu Leu Gly Ile Thr Thr Leu Tyr Ala Gln Gln Leu
 20 25 30
 Asn Ile Thr Gly Thr Val Ile Asp Lys Lys Leu Asn Glu Pro Ile Ile
 35 40 45
 Gly Ala Thr Val Gln Val Lys Gly Thr Asn Asn Gly Ser Ile Thr Asp
 50 55 60
 Met Glu Gly Lys Phe Ser Leu Lys Asn Val Ser Lys Gly Gly Ile Leu
 65 70 75 80
 Thr Val Ser Tyr Ile Gly Tyr Thr Thr Gln Ser Ile Pro Leu Asn Gly

				85				90					95		
Thr	Gln	Thr	Ser	Phe	Arg	Ile	Glu	Leu	Ser	Glu	Asp	Ser	Lys	Thr	Leu
			100					105					110		
Asp	Glu	Val	Val	Val	Val	Gly	Phe	Gly	Thr	Gln	Lys	Lys	Val	Asn	Leu
		115					120					125			
Thr	Gly	Ala	Val	Thr	Ser	Val	Asp	Thr	Lys	Ala	Leu	Ala	Ser	Arg	Pro
	130					135					140				
Val	Ser	Gln	Val	Gly	Gln	Ala	Leu	Gln	Gly	Val	Val	Pro	Gly	Leu	Asn
145					150					155					160
Leu	Ser	Thr	Pro	Asp	Leu	Gly	Gly	Gln	Leu	Gly	Gln	Thr	Met	Asn	Val
				165				170						175	
Asn	Ile	Arg	Gly	Thr	Gly	Thr	Ile	Gly	Lys	Gly	Ser	Ser	Ala	Ser	Pro
			180					185					190		
Leu	Ile	Leu	Ile	Asp	Gly	Met	Glu	Gly	Asn	Met	Asn	Asn	Leu	Asn	Pro
		195					200					205			
Glu	Asp	Ile	Glu	Asn	Ile	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ser	Ser
	210					215					220				
Ile	Tyr	Gly	Ser	Arg	Ala	Ala	Phe	Gly	Val	Ile	Leu	Ile	Thr	Thr	Lys
225					230					235					240
Lys	Gly	Lys	Ala	Gly	Lys	Met	Gln	Val	Asn	Tyr	Asn	Asn	Ser	Phe	Arg
				245					250					255	
Tyr	Ser	Gly	Pro	Thr	Ser	Leu	Pro	Asn	Gln	Leu	Asp	Ser	Tyr	Arg	Phe
			260					265					270		
Ala	Asn	Tyr	Phe	Asn	Asp	Ala	Ala	Ile	Asn	Gln	Gly	Gly	Ser	Val	Ile
		275					280					285			
Phe	Asp	Glu	Glu	Thr	Ile	Asp	Arg	Ile	Gln	Lys	Tyr	Met	Ala	Gly	Glu
	290					295					300				
Ile	Thr	Thr	Thr	Thr	Ile	Ala	Asn	Gly	Thr	Asn	Trp	His	Phe	His	Glu
305					310					315					320
Lys	Ala	Asn	Asp	Asn	Val	Asn	Trp	Trp	Lys	Lys	His	Phe	Gln	Trp	Ala
				325					330					335	
Trp	Ser	Asn	Glu	His	Asn	Ile	Ser	Leu	Asn	Gly	Gly	Thr	Glu	Lys	Leu
			340					345					350		
Gln	Tyr	Tyr	Val	Ser	Gly	Ser	Tyr	Leu	Asn	Gln	Asp	Gly	Asn	Leu	Arg
		355					360					365			
Tyr	Gly	Asn	Asp	Asn	Tyr	Lys	Arg	Tyr	Asn	Ala	Thr	Ala	Lys	Val	Asn
	370					375					380				
Thr	Gln	Ile	Asn	Lys	Tyr	Val	Asp	Phe	Asn	Ile	Asn	Thr	Lys	Phe	Val
385					390					395					400
Arg	Phe	Asp	Leu	Asp	Asn	Pro	Val	Tyr	Leu	Glu	Glu	Gly	Gly	Leu	Leu
				405					410					415	
Tyr	His	Asp	Ile	Ala	Arg	Met	Trp	Pro	Met	Met	Pro	Phe	Lys	Asp	Pro
			420					425					430		
Asn	Gly	Tyr	Tyr	Met	Arg	Asn	Gly	Lys	Leu	Asn	Gln	Leu	Thr	Asp	Gly

Glu Leu Ala Ala Gln Arg Pro Asp Val Ile Ser Ser Leu Ile Pro Glu
 565 570 575
 Ile Ser Ala Ala Thr Gly Glu Asp Lys Ile Asn Ser Ser Lys Tyr Asn
 580 585 590
 Asp Trp Ser Thr Ala Gly Phe Phe Gly Arg Leu Asn Tyr Ser Tyr Lys
 595 600 605
 Asp Arg Tyr Met Ala Glu Val Asn Val Arg Tyr Asp Gly Ser Ser Arg
 610 615 620
 Phe Leu Lys Asp Gln Arg Trp Asn Val Phe Pro Ser Phe Ser Leu Gly
 625 630 635 640
 Trp Asn Leu Ala Arg Glu Ser Phe Phe Glu Pro Ile Asn Asn Ile Ile
 645 650 655
 Asn Thr Leu Lys Pro Arg Val Ser Trp Gly Met Leu Gly Asn Gln Asn
 660 665 670
 Thr Asp Ser Tyr Tyr Pro Phe Tyr Leu Thr Gln Ser Val Thr Ala Asn
 675 680 685
 Gly Gly Asn Trp Leu Met Asp Gly Ser Arg Pro Thr Thr Ala Gly Val
 690 695 700
 Pro Gly Met Val Ser Ser Thr Leu Thr Trp Glu Lys Ile Tyr Asn Thr
 705 710 715 720
 Asn Leu Gly Ile Asp Leu Gly Met Phe Asn Asn Arg Leu Asn Met Thr
 725 730 735
 Phe Glu Tyr Phe Ile Arg Arg Thr Lys Asp Met Val Gly Pro Ala Ala
 740 745 750
 Glu Val Gly Ala Ile Leu Gly Thr Ala Leu Pro Asn Thr Asn Asn Ala
 755 760 765
 Glu Leu Lys Asn Lys Gly Trp Glu Leu Gln Ala Asn Trp Arg Asp Asn
 770 775 780
 Ile Gly Lys Val Asn Tyr Asn Ile Gly Phe Asn Leu Ser Asp Asn Arg
 785 790 795 800
 Ala Lys Val Ile Ser Tyr Pro Asn Ala Ser Lys Ala Leu Trp Asp Ser
 805 810 815
 Asn Gly Asn Thr Leu Tyr Tyr Asn Gly Met Thr Ile Gly Glu Ile Trp
 820 825 830
 Gly Tyr Glu Thr Glu Gly Ile Ala Gln Thr Asp Ala Gln Met Thr Glu
 835 840 845
 Trp Leu Ala Ser Asn Asp Gln Ser Lys Ile Gly Ser Val Trp Gly Ala
 850 855 860
 Gly Asp Ile Met Tyr Arg Asp Leu Asn Gly Asp Gly Ile Val Asp Lys
 865 870 875 880
 Gly Asn Ser Thr Ala Thr Asp His Gly Asp Leu Lys Lys Ile Gly Asn
 885 890 895
 Ser Thr Pro Arg Leu Arg Phe Gly Leu Ser Leu Gly Ala Asp Trp Lys
 900 905 910
 Gly Phe Asp Ile Gln Met Phe Phe Gln Gly Val Met Lys Arg Asp Leu
 915 920 925
 Trp Leu Ser Gly Pro Met Phe Trp Gly Ala Asp Gly Gly Glu Trp Gln
 930 935 940
 Ser Val Gly Phe Asp Glu His Leu Asp Tyr Phe Arg Pro Glu Asn Thr
 945 950 955 960
 Thr Ser Ile Phe Gly Ala Asn Leu Asn Ser Tyr Tyr Pro Lys Ala Tyr
 965 970 975
 Leu Gly Asp Lys Gly Asn Lys Asn Lys Gln Thr Gln Thr Arg Tyr Leu
 980 985 990
 Gln Asn Gly Ala Tyr Met Arg Met Lys Asn Leu Gln Ile Gly Tyr Thr
 995 1000 1005
 Phe Pro Lys Ala Trp Met Asn Lys Ala Lys Ile Glu Lys Leu Arg Ile
 1010 1015 1020
 Tyr Val Ser Gly Glu Asn Leu Phe Thr Ile Ser Gly Ile Ala Asp Met

1025		1030		1035		1040									
Phe	Asp	Pro	Glu	Ala	Thr	Ala	Gly	Asn	Gly	Phe	Ser	Asn	Gly	Lys	Thr
				1045				1050						1055	
Tyr	Pro	Leu	Ser	Lys	Thr	Ile	Ser	Phe	Gly	Leu	Asn	Ile	Thr	Leu	
			1060					1065					1070		

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<212> PRT

<213> B.fragilis

<400> 6032

Phe	Ile	Arg	Met	Lys	Arg	Tyr	Phe	Ile	Ile	Ser	Leu	Leu	Thr	Leu	Ala
1				5					10					15	
Ser	Thr	Val	Ala	Pro	Leu	Thr	Ala	Val	Phe	Ala	Gln	Ser	Ser	Phe	Ile
			20					25					30		
Tyr	Glu	Lys	Gly	Lys	Ser	Phe	Lys	Asp	Val	Asn	Ala	Ser	Pro	Met	Pro
		35					40					45			
Gln	Thr	Ile	Arg	Leu	Asp	Arg	Thr	Ala	Glu	Pro	Val	Ile	Tyr	Glu	Asn
	50					55					60				
Ala	Val	Pro	Glu	Asn	Ala	Thr	Thr	Ile	Cys	Tyr	Arg	Ile	Gln	Leu	Pro
65				70					75					80	
Ser	Tyr	Val	Arg	Gly	Thr	Phe	Phe	Ser	Arg	Asp	Ser	Arg	Pro	Gly	Asp
			85					90					95		
Tyr	Glu	Trp	Pro	Asn	Asn	Thr	Asn	Arg	Leu	Leu	Pro	Trp	Met	Phe	Asn
			100					105					110		
His	Leu	Thr	Asp	Leu	Thr	Arg	Asp	Asp	Tyr	Pro	Gly	Ile	Pro	Ser	Asn
		115					120					125			
Ala	Arg	Pro	Ser	Thr	Leu	Gly	Asp	Ala	Leu	Leu	Leu	Gln	Leu	Thr	Asp
		130				135						140			
Gly	Ser	Tyr	Leu	Phe	Thr	Lys	Ala	Ile	Ala	Gly	Asp	Asn	Ser	Leu	Ser
145					150					155				160	
Trp	Phe	Gln	Val	Asn	Thr	Asp	Gly	Ser	Leu	Asn	Leu	Tyr	Val	Ser	Thr
			165					170					175		
Leu	Gly	Thr	Asp	Arg	Leu	Glu	His	Lys	Val	Pro	Val	Ala	Leu	Val	Gln
		180					185						190		
Ser	Ala	Gly	Asn	Ile	Tyr	Gln	Val	Phe	Gln	Gln	Ala	Tyr	Glu	Thr	Leu
	195					200						205			
Ile	Ser	Asp	Arg	Asn	Val	Ser	Ala	Leu	Gln	Lys	Arg	Thr	Glu	Lys	Asn
210				215						220					
Tyr	Phe	Glu	Ala	Leu	Asn	Tyr	Leu	Gly	Trp	Cys	Thr	Trp	Glu	His	Tyr
225				230						235				240	
His	Phe	Asp	Ile	Asp	Glu	Thr	Lys	Ile	Leu	Asn	Asp	Leu	Asp	Ala	Ile
		245						250					255		
Glu	Thr	Ser	Gly	Val	Pro	Val	Arg	Tyr	Val	Leu	Ile	Asp	Asp	Gly	His
		260					265					270			
Leu	Ala	Asn	Lys	Asn	Arg	Gln	Leu	Thr	Ser	Phe	Thr	Pro	Asp	Pro	Gln
		275				280						285			
Arg	Phe	Pro	Asn	Gly	Trp	Ala	Pro	Ile	Met	Ala	His	Lys	Asn	Lys	Asp
	290				295						300				
Lys	Ile	Arg	Trp	Ile	Gly	Leu	Trp	Tyr	Ala	Leu	Ser	Gly	Tyr	Trp	Met
305				310						315				320	
Gly	Ile	Ser	Pro	Asp	Asn	Asp	Phe	Pro	Thr	His	Val	Lys	Asn	Ser	Leu
			325					330					335		
Tyr	Ser	Phe	Asn	Gly	Ser	Leu	Leu	Pro	Gly	Lys	Ser	Thr	Pro	Asn	Ile
		340					345						350		
Asp	Thr	Phe	Tyr	Gln	Tyr	Tyr	Val	His	Ser	Leu	Lys	Thr	His	Gly	Phe
	355					360						365			
Asp	Phe	Leu	Lys	Val	Asp	Asn	Gln	Ala	Phe	Thr	Leu	Pro	Leu	Tyr	Met

370		375		380
Gly Ser Thr Glu Val Val Arg Gln Ala Lys Glu Cys Asn Leu Ala Leu				
385		390		400
Glu Lys Gln Thr His Ala Gln Gln Val Gly Leu Met Asn Cys Met Ala				
	405		410	415
Gln Asn Val Leu Asn Thr Asp His Thr Leu His Ser Gly Val Ala Arg				
	420		425	430
Val Ser Ile Asp Tyr Lys Lys Tyr Asn Glu Asn Met Ala Lys Ser His				
	435		440	445
Leu Phe Gln Ser Tyr Thr Asn Thr Leu Leu Gln Gly Gln Thr Val Trp				
	450		455	460
Pro Asp His Asp Met Phe His Ser Ser Asp Thr Ile Cys Gly Ser Leu				
465		470		480
Met Ala Arg Ser Lys Ala Ile Ser Gly Gly Pro Val Tyr Leu Ser Asp				
	485		490	495
Ser Pro Lys Glu Phe Val Lys Glu Asn Ile Phe Pro Leu Ile Asp Lys				
	500		505	510
Glu Gly Lys Ile Phe Arg Pro Glu Ala Pro Ala Ile Pro Thr Pro Glu				
	515		520	525
Ser Val Leu Thr Asn Pro Leu Gln Asp Gly Lys Ala Tyr Arg Val Phe				
	530		535	540
Ala Pro Thr Gly Asp Glu Ala Val Ser Val Ile Cys Tyr Asn Leu Asn				
545		550		560
Thr Ser Pro Lys His Arg Lys Val Thr Ala Glu Ile Asp Pro Lys Asp				
	565		570	575
Tyr Leu Leu Arg Glu Thr Leu Thr Gly Lys Pro Thr Pro Gln Gln Lys				
	580		585	590
Arg Val Ile Leu Phe Asp Trp Asn Asn Gln Thr Ala Thr Glu Leu Thr				
	595		600	605
Gly Lys Gln Thr Val Glu Leu Asp Gly Phe Thr Asp Arg Leu Phe His				
	610		615	620
Leu Cys Pro Ile His Asp Gly Trp Ala Val Ile Gly Ile Gln Glu Lys				
625		630		640
Tyr Leu Ser Pro Ala Ala Val Arg Ile Leu Ser Ser Thr Pro Asp Lys				
	645		650	655
Leu Val Leu Asn Val Leu Ser Pro Gly Thr Leu Lys Ile Trp Thr Glu				
	660		665	670
Asn Ser Gly Lys Gln Glu Leu Arg Asn Ile Gln Val Lys Glu Thr Gly				
	675		680	685
Lys Met Thr Ile Arg Lys				
690				

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<212> PRT

<213> B.fragilis

<400> 6033

Leu Tyr Ser Ile Met Lys Asn Ile Ile Pro Gln Ala Leu Leu Thr Met				
1	5		10	15
Pro Ile Leu Ser Thr Gly Leu Gln Ala Gln Glu Lys Gln Pro Thr Pro				
	20		25	30
Asn Leu Val Phe Ile Met Ala Asp Gln Tyr Arg Gly Asp Ala Ile Gly				
	35		40	45
Cys Ile Gly Lys Glu Pro Val Lys Thr Pro His Leu Asp Lys Leu Ala				
	50		55	60
Ser Glu Gly Ile Asn Phe Thr Asn Ala Ile Ser Ser Tyr Pro Val Ser				
65	70		75	80
Ser Pro Ala Arg Gly Met Leu Met Thr Gly Met Tyr Pro Ile Gly Ser				

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<210> 6034
<211> 128
<212> PRT
<213> B.fragilis
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1		5		10		15									
Ala	Val	Leu	Leu	His	Ser	Val	Thr	Met	Lys	Ala	Ala	Asn	Thr	Ser	Tyr
		20						25					30		
Ile	Ile	Glu	Asp	Pro	Asp	Gln	Glu	Glu	Cys	Phe	Ile	Ser	Gln	Ala	Thr
		35					40					45			
Pro	Ala	Ser	Arg	Asn	Ile	Leu	Glu	Arg	Phe	His	Phe	Tyr	Cys	Thr	Ile
	50				55						60				
Met	Pro	Cys	Glu	Met	Gly	His	Ala	Asp	Ile	Ser	His	Val	Pro	Thr	Asp
65				70					75					80	
Lys	Ser	Phe	Ile	Arg	Pro	Glu	Met	Ile	Phe	His	Lys	Tyr	Arg	Met	Arg
				85				90					95		
Asn	Asn	Pro	Phe	Ser	Val	His	Ser	Asn	His	Ser	His	Thr	Tyr	Asn	Pro
		100						105				110			
Ser	Asp	Pro	Leu	Thr	Tyr	Tyr	Val	Tyr	Gly	Leu	Arg	Lys	Ile	Ile	Ile
	115						120					125			

<210> 6035

<211> 105

<212> PRT

<213> B.fragilis

<400> 6035

Asp	Asp	Met	Met	Ile	His	Met	Glu	Tyr	Tyr	Leu	Val	Val	Ser	Thr	Ile
1			5					10					15		
Met	Met	Phe	Ala	Gly	Ile	Tyr	Gly	Phe	Phe	Thr	Arg	Arg	Asn	Thr	Leu
		20					25					30			
Ala	Ile	Leu	Ile	Ser	Val	Glu	Leu	Met	Leu	Asn	Ala	Thr	Asp	Ile	Asn
	35					40					45				
Phe	Ala	Val	Phe	Asn	Arg	Phe	Leu	Phe	Pro	Gly	Glu	Leu	Glu	Gly	Tyr
	50			55				60							
Phe	Phe	Ala	Leu	Phe	Ser	Ile	Ala	Ile	Ser	Ala	Ala	Glu	Thr	Ala	Ile
65				70				75						80	
Ala	Ile	Ala	Ile	Met	Ile	Asn	Ile	Tyr	Arg	Asn	Ile	Arg	Ser	Ile	Gln
			85					90				95			
Val	Lys	Asn	Leu	Asp	Glu	Leu	Lys	Trp							
		100					105								

<210> 6036

<211> 1380

<212> PRT

<213> B.fragilis

<400> 6036

Ile	Ser	Phe	Val	Cys	Leu	Gly	Phe	Ile	Ser	Phe	Phe	Cys	Asn	Lys	Leu
1			5					10					15		
Ile	Ile	Asn	Met	Lys	Lys	Leu	Asn	Leu	Phe	Leu	Leu	Val	Leu	Phe	Ile
		20					25					30			
Cys	Asn	Cys	Pro	Val	Val	Ser	Gly	Tyr	Ala	Phe	Phe	Asp	Arg	Asp	Ile
	35					40					45				
Arg	Leu	Leu	Thr	Met	Gln	Asp	Gly	Leu	Ala	Asp	Asn	Thr	Ile	Thr	Ser
	50			55				60							
Ile	Tyr	Lys	Asp	Arg	Asp	Gly	Phe	Met	Trp	Phe	Gly	Thr	Asn	Asn	Gly
65			70					75						80	
Leu	Ser	Arg	Tyr	Asp	Gly	Lys	Leu	Ile	Lys	Asn	Phe	Ser	Ser	Ser	Pro
			85					90					95		
Ala	Tyr	Met	Tyr	Val	Ser	Glu	Ile	Val	Glu	Met	Ser	Asp	Arg	Tyr	Leu
		100					105					110			
Gly	Val	Ile	Ala	Gly	Asn	Thr	Leu	Tyr	Cys	Phe	Ala	Arg	Ser	Leu	Glu
	115					120						125			

Lys Phe Ile Pro Ile Val His Ala Thr Asp Tyr Ser Ser Val His Val
 130 135 140
 Ser His Leu Leu Pro Ile Asp Asn Asn Ser Phe Trp Gly Leu Ser Gly
 145 150 155 160
 Asn Lys Leu Tyr Leu Tyr Thr Gln Glu Glu Val Lys Asn Glu Lys Gly
 165 170 175
 Glu Val Val Gln Ile Lys Leu Lys Cys Glu Lys Gln Tyr Lys Asp Leu
 180 185 190
 Ile Asp Ser Gly Asp Asn Phe Cys Ala Met Cys Tyr Thr Asp Asn His
 195 200 205
 Glu Met Leu Cys Leu Val Thr Gln Gln Gly Asn Leu Leu Leu Phe Gln
 210 215 220
 Pro Glu Ser Ser Glu Lys Ser Lys Lys Ile Ser Leu Trp Lys Asn Lys
 225 230 235 240
 Thr Trp Asp Ala Thr Ser Val Leu Tyr Asp Lys Gly Val Val Trp Val
 245 250 255
 Ser Thr Ile Gly His Gly Ile Leu Arg Tyr Tyr Val Ser Ser Gly Tyr
 260 265 270
 Ile Asp Arg Ile Thr Tyr Lys Glu Asn Asn Lys Glu Asn Ser Leu Ser
 275 280 285
 His Thr Asp Val Phe Gln Val Ile Pro Ile Asn Asn Arg Tyr Leu
 290 295 300
 Ala Val Thr Trp Ser Gly Tyr Thr Leu Leu Phe Gln Asp Lys Asn Asp
 305 310 315 320
 Pro Lys Arg Met Met Thr Glu Ile Tyr Tyr Asn Thr Ala Ser Gln Leu
 325 330 335
 His Arg Asn Leu Glu Thr Arg Met Ile Ser Ala Tyr Tyr Asp Pro Ser
 340 345 350
 Gly Ile Val Trp Ile Gly Thr Asn Gly Gly Gly Val Ile Tyr Ser Asp
 355 360 365
 Leu Arg Ser Gln Phe Tyr Asn Gln Phe His Gln Glu Arg His Asn Glu
 370 375 380
 Ile Cys Gly Ile Val Met Asp Asn Arg Lys Tyr Val Trp Met Ala Thr
 385 390 395 400
 Phe His Gln Gly Ile Met Lys Ser Glu Gln Pro Phe Glu Pro Gly Arg
 405 410 415
 Arg Met Asn Phe Thr Arg Val Gly Thr Pro Asp Ile Gln Ser Lys Asn
 420 425 430
 Thr Val Leu Cys Ala Ile Asn Asp Asn Arg Gly Ser Leu Trp Phe Gly
 435 440 445
 Asn Arg Asp Gly Thr Leu Thr Ser Tyr Asn Glu Ala Thr Lys Gln Phe
 450 455 460
 Arg Leu His Phe Leu Gln Asp Arg Gly Lys Val Asn Thr Val Ser Ile
 465 470 475 480
 Trp Ala Leu Tyr Trp Asp Thr Asn Arg Asn Leu Trp Val Gly Thr Asn
 485 490 495
 Asp Gly Val Trp Lys Leu Asn Ile Asp Ser Gly Phe Cys Lys Lys Ile
 500 505 510
 Pro Ile Glu Ile Leu Phe Lys Asp Pro Thr Pro Ile Cys Ile Arg Ala
 515 520 525
 Ile Ala Gly Thr Lys Asp Gly Thr Ile Trp Leu Gly Thr Ser Asn Ala
 530 535 540
 Gly Val Cys Lys Leu Lys Ile Asp Ser Arg Gly Glu Met Ser Leu Glu
 545 550 555 560
 Thr Gly Tyr Glu Lys Lys Ala Asn Ile Lys Asn Asn Ser Val Arg Ser
 565 570 575
 Leu Leu Val Ser Ser Asp Gly Asn Val Tyr Val Gly Tyr Met Asp Gly
 580 585 590
 Phe Ala Ile Leu Ser Pro Lys Lys Asp Ala Ile Arg Glu Tyr Tyr Thr


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Ile Leu Asp Ser Glu Pro Gly Lys Gly Ser Thr Phe Val Leu Leu Ile
  1075              1080              1085
Pro Glu Gly Lys Ser His Phe Thr Gly Asp Leu Tyr Glu Ile Val Asp
  1090              1095              1100
Tyr Arg Gly His Glu Thr Glu Pro Gln Phe Gln Pro Leu Ser Val Gln
  1105              1110              1115              1120
Glu Lys Ser Glu Glu Gly Val Pro Val Thr Lys Lys Thr Leu Leu Ile
              1125              1130              1135
Val Glu Asp Asn Val Asp Val Arg Gln Tyr Ile Arg Ser Leu Phe Val
              1140              1145              1150
Thr Lys Tyr Thr Val Leu Glu Ala Ala Asp Gly Glu Glu Gly Val Arg
              1155              1160              1165
Ile Ala Thr Asn Glu Ile Pro Asp Leu Ile Ile Ser Asp Val Met Met
              1170              1175              1180
Pro Val Lys Asp Gly Phe Ala Cys Cys Arg Glu Ile Arg Glu Arg Gln
  1185              1190              1195              1200
Glu Thr Ala His Ile Pro Ile Leu Met Leu Thr Ala Lys Ala Glu Asp
              1205              1210              1215
Ala Asp Val Leu Gln Gly Ser Tyr Ser Gly Ala Asp Asp Tyr Met Met
              1220              1225              1230
Lys Pro Phe Asn Pro Glu Val Leu Lys Ala Lys Val Glu Asn Leu Ile
              1235              1240              1245
Leu Gln Arg Glu Arg Leu Lys Arg Ile Tyr Thr Lys Ala Leu Met Leu
  1250              1255              1260
Lys Arg Glu Ser Val Glu Asp Glu Glu Ala Asp Asp Glu Phe Ile Gln
  1265              1270              1275              1280
Lys Leu Ile His Val Val Glu Lys Asn Leu Ser Asn Glu Asn Phe Asn
              1285              1290              1295
Val Lys Met Leu Ala Glu Gln Leu His Met Ser Gln Pro Thr Leu Tyr
              1300              1305              1310
Arg Lys Val Lys Gln Arg Ser Glu Leu Ser Val Val Asp Met Ile Arg
              1315              1320              1325
Ser Val Arg Val Ser Lys Ala Ala Ser Leu Ile Met Glu Asn Arg Tyr
              1330              1335              1340
Ser Ile Gln Glu Ile Ser Glu Lys Val Gly Phe Ser Asp Ala Arg Thr
  1345              1350              1355              1360
Leu Arg Lys His Phe Thr Glu Gln Phe Gly Val Pro Pro Ser Lys Tyr
              1365              1370              1375
Met Glu Asn Lys
              1380

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<210> 6037

<211> 421

<212> PRT

<213> B.fragilis

<400> 6037

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Asn Val Asn Val Met Asn Arg Ser Arg Asp Lys Val Arg Cys Ala Leu
  1      5      10      15
Asn His Gln Asn Ala Gly Ser Ile Pro Val Asp Phe Gly Ser Thr Ala
              20      25      30
Val Thr Gly Ile His Cys Arg Ile Val Glu Ala Leu Arg Asn Tyr Tyr
              35      40      45
Gly Leu Ala Pro Arg Pro Val Lys Ile Val Asp Ala Phe Gln Met Leu
              50      55      60
Gly Glu Ile Asp Ala Glu Leu Ala Glu Lys Ile Gly Val Asp Cys Ile
              65      70      75      80
Gly Ile Gly Gly Pro Lys Asp Ile Phe Asp Leu Asp Thr Thr Arg Met
              85              90              95

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His Glu Gln Thr Thr Pro Trp Gly Gln Arg Val Leu Val Pro Glu Ala
 100 105 110
 Met Asp Leu Thr Pro Asp Met Arg Gly Asp Val Tyr Val Tyr Ala Gly
 115 120 125
 Gly Asp Gln Asn Tyr Pro Pro Ser Ala Val Met Pro Lys Gly Cys Tyr
 130 135 140
 Phe Ile Asn Ala Ile Glu Arg Gln Gln Pro Ile Glu Glu Asp Arg Leu
 145 150 155 160
 Asp Pro Glu Asp Asn Val Glu Glu Phe Gly Leu Leu Thr Glu Asn Asp
 165 170 175
 Leu Ala Tyr Tyr Cys Ala Glu Ala Asp Lys Ala Tyr Gln Thr Gly Arg
 180 185 190
 Ala Val Val Ala Ser Phe Gly Gly Thr Ala Leu Gly Asp Val Ala Phe
 195 200 205
 Val Pro Gly Met Gly Leu Lys Gln Pro Lys Gly Ile Arg Ser Val Val
 210 215 220
 Glu Trp Tyr Met Ser Thr Ala Met Arg Gln Asp Tyr Leu His Gln Val
 225 230 235 240
 Phe Glu Lys Glu Ile Asp Ile Ala Ile Ala Asn Tyr Glu Lys Leu Trp
 245 250 255
 Ala Ala Leu Gly Asp Lys Ile Asp Val Val Leu Thr Cys Gly Thr Asp
 260 265 270
 Phe Gly Ser Gln Glu Ser Gln Phe Cys Ser Ile Asp Thr Phe Arg Glu
 275 280 285
 Leu Trp Leu Pro His Tyr Arg Arg Met Asn Asp Trp Ile His Gln His
 290 295 300
 Thr Thr Trp Lys Ile Phe Lys His Ser Cys Gly Ala Ile Ile Pro Ile
 305 310 315 320
 Leu Pro Gly Leu Ile Glu Ala Gly Phe Asp Ile Ile Asn Pro Val Gln
 325 330 335
 Ile Asn Ala Lys Asp Met Glu Ser Arg Arg Leu Lys Glu Glu Phe Gly
 340 345 350
 Ser Gln Leu Thr Phe Trp Gly Gly Gly Val Asp Thr Gln Lys Ile Leu
 355 360 365
 Pro Phe Gly Thr Pro Asp Glu Ile Arg Arg His Val Met Gly Gln Cys
 370 375 380
 Glu Ile Leu Gly Arg Asp Gly Gly Phe Val Phe Asn Ala Val His Asn
 385 390 395 400
 Val Gln Ala Asn Val Pro Val Asp Asn Val Val Ala Met Phe Asp Ala
 405 410 415
 Leu Lys Asp Ile Ser
 420

<210> 6038

<211> 384

<212> PRT

<213> B.fragilis

<400> 6038

Ser Gly Met Val Met Asn Thr Phe Val Thr Phe Lys Ile Glu Asp Ala
 1 5 10 15
 Met Lys Thr Phe Arg Tyr Ile Leu Phe Val Trp Val Met Leu Gly Cys
 20 25 30
 Gly Leu Phe Ala Ser Cys Glu Asp Glu Val Glu Tyr Ala Pro Leu
 35 40 45
 Ala Val Thr Arg Val Ser Thr Val Leu Asp Arg Glu Gln Gly Ile Asp
 50 55 60
 Gln Ala Asn Leu Ala Gln Tyr Ile Ile Val Gln Gly Thr Gly Leu Asn
 65 70 75 80

Ala Val Asn Ser Ile Leu Val Asn Asp Val Gln Val Asp Leu Lys Asp
 85 90 95
 Ala Tyr Ile Thr Ser Gly Glu Ile Thr Phe Pro Ile Pro Arg Val Ile
 100 105 110
 Pro Gly Glu Ile Asn Asn Leu Ile Thr Leu Gly Ser Gly Asn Ser Thr
 115 120 125
 Val Thr Ala Pro Ile Ser Val Phe Ile Pro Glu Leu Glu Val Asn Gly
 130 135 140
 Met Phe Asn Glu Phe Thr Pro Ala Gly Asp Thr Met Lys Val Val Gly
 145 150 155 160
 Asp Tyr Phe Asp Leu Tyr Glu Ile Thr Thr Glu Ser Gly Gln Leu Phe
 165 170 175
 Phe Gly Gly Lys Glu Val Lys Ile Thr Lys Ser Thr Gly Asn Ser Leu
 180 185 190
 Ser Phe Val Leu Pro Glu Asp Ala Val Met Gly Ser Lys Ile Lys Leu
 195 200 205
 Val Ser Pro Val Cys Gly Glu Val Thr Val Pro Gly Lys Tyr Met Glu
 210 215 220
 Lys Gly Asn Met Leu Cys Asp Phe Asp Pro Phe Thr Gly Trp Gly Gly
 225 230 235 240
 Ser Lys Tyr Val Ile Asp Gly Pro Val Pro Ala Pro Tyr Ser Gly Tyr
 245 250 255
 Phe Ser Arg Phe Lys Ile Asn Lys Gly Asp Ala Asn Asp Trp Asp Trp
 260 265 270
 Asn Glu Val Thr Thr Ile Ala Gln Cys Ala Val Glu Tyr Ser Pro Glu
 275 280 285
 Val Ile Ala Asp Gln Asn Lys Tyr Leu Leu Lys Phe Glu Val Asn Thr
 290 295 300
 Ile Lys Pro Leu Thr Lys Arg Gln Ile Arg Phe Tyr Phe Ser Gln Ile
 305 310 315 320
 Asn Tyr Asp Trp Glu Pro Phe Ala Ser Gly Leu Ala Leu Asn Thr Asn
 325 330 335
 Gly Glu Trp Lys Thr Val Ser Ile Asp Leu Gly Glu Met Trp Lys Gly
 340 345 350
 Asp Ile Pro Asn Asp Gly Val Leu Gln Ile Met Gly Asn Ser Trp Ala
 355 360 365
 Glu Asp Thr Asp Ile Cys Phe Asp Asn Phe Arg Ile Val Pro Lys Asp
 370 375 380

<210> 6039

<211> 686

<212> PRT

<213> B.fragilis

<400> 6039

Val His Lys Val Val Ser Pro Pro Pro Phe Pro Leu Leu Leu Ile Lys
 1 5 10 15
 Phe Pro Ile Lys Lys Met Leu Leu Pro Leu Ser Phe Thr Lys Phe Ala
 20 25 30
 Phe Lys Phe Ala Arg Ile Met Lys Asn Glu Pro Thr Tyr Ser Leu Leu
 35 40 45
 Asn Ala Ile Asn Tyr Pro Lys Asp Leu Arg Gln Leu Ser Val Asp Gln
 50 55 60
 Leu Pro Glu Val Cys Glu Glu Leu Arg Gln Asp Ile Ile Lys Glu Leu
 65 70 75 80
 Ser Cys Asn Pro Gly His Phe Ala Ala Ser Leu Gly Val Val Glu Leu
 85 90 95
 Thr Val Ala Leu His Tyr Val Tyr Asn Thr Pro Tyr Asp Arg Ile Val
 100 105 110

Trp Asp Val Gly His Gln Ala Tyr Gly His Lys Ile Leu Thr Gly Arg
 115 120 125
 Arg Glu Ala Phe Ser Thr Asn Arg Lys Leu Gly Gly Ile Arg Pro Phe
 130 135 140
 Pro Ser Pro Glu Glu Ser Glu Tyr Asp Thr Phe Thr Cys Gly His Ala
 145 150 155 160
 Ser Asn Ser Ile Ser Ala Ala Leu Gly Met Ala Val Ala Ala Glu Arg
 165 170 175
 Lys Gly Glu Lys Asp Arg His Val Val Ala Val Ile Gly Asp Gly Ser
 180 185 190
 Met Ser Gly Gly Leu Ala Phe Glu Gly Leu Asn Asn Ala Ser Ser Thr
 195 200 205
 Ala Asn Asn Leu Leu Ile Ile Leu Asn Asp Asn Asp Met Ala Ile Asp
 210 215 220
 Arg Ser Val Gly Gly Met Lys Gln Tyr Leu Phe Asn Leu Thr Thr Ser
 225 230 235 240
 Asn Arg Tyr Asn Gln Leu Arg Phe Lys Thr Ser Arg Leu Leu Phe Lys
 245 250 255
 Met Gly Leu Leu Asn Glu Glu Arg Arg Lys Ala Leu Ile Arg Leu Gly
 260 265 270
 Asn Ser Leu Lys Ser Leu Ala Ala Gln Gln Gln Asn Ile Phe Glu Gly
 275 280 285
 Met Asn Ile Arg Tyr Phe Gly Pro Ile Asp Gly His Asp Val Lys Asn
 290 295 300
 Ile Ala Arg Ile Leu His Asp Ile Lys Asp Met Gln Gly Pro Lys Ile
 305 310 315 320
 Leu His Leu His Thr Ile Lys Gly Lys Gly Phe Gly Pro Ala Glu Lys
 325 330 335
 Gln Ala Thr Ile Trp His Ala Pro Gly Lys Phe Asp Pro Val Thr Gly
 340 345 350
 Lys Arg Ile Val Ala Asn Thr Asp Gly Met Pro Pro Leu Phe Gln Asp
 355 360 365
 Val Phe Gly His Thr Leu Val Glu Leu Ala Glu Lys Asn Lys Arg Ile
 370 375 380
 Met Gly Val Thr Pro Ala Met Pro Ser Gly Cys Ser Met Asn Met Leu
 385 390 395 400
 Met Asp Arg Met Pro Asp Arg Ala Phe Asp Val Gly Ile Ala Glu Gly
 405 410 415
 His Ala Val Thr Phe Ser Gly Gly Met Ala Lys Asp Gly Leu Leu Pro
 420 425 430
 Phe Cys Asn Ile Tyr Ser Ser Phe Met Gln Arg Ala Tyr Asp Asn Ile
 435 440 445
 Ile His Asp Val Ala Ile Gln Lys Leu Asn Val Val Phe Cys Leu Asp
 450 455 460
 Arg Ala Gly Leu Val Gly Glu Asp Gly Pro Thr His His Gly Val Phe
 465 470 475 480
 Asp Met Ala Tyr Leu Arg Pro Ile Pro Asn Leu Thr Ile Ser Ser Pro
 485 490 495
 Met Asp Glu His Glu Leu Arg Arg Leu Met Tyr Thr Ala Gln Leu Pro
 500 505 510
 Asp Lys Gly Pro Phe Ala Ile Arg Tyr Pro Arg Gly Arg Gly Ser Leu
 515 520 525
 Val Asp Trp Glu Cys Pro Leu Glu Glu Ile Pro Val Gly Lys Gly Arg
 530 535 540
 Lys Leu Lys Asp Gly Asn Asp Leu Ala Val Ile Thr Ile Gly Pro Ile
 545 550 555 560
 Gly Lys Leu Ala Ala Arg Ala Ile Glu Arg Ala Glu Ala Asp Thr Gly
 565 570 575
 Ile Ser Val Ala His Tyr Asp Leu Arg Phe Leu Lys Pro Leu Asp Glu

305 310 315 320
 Phe Trp Ala Pro Ser Tyr Leu Asn Thr Gln Phe Asp Ile Lys Thr Ser
 325 330 335
 Glu Gly Leu Gly Arg Ala Leu Ile Phe Thr Leu Tyr Ala Ile Thr Met
 340 345 350
 Leu Ser Ile Tyr Gly Gly Lys Leu Pro Thr Ile Ile Ile His Lys Thr
 355 360 365
 Gly Leu Asn Pro Tyr Ala Ala Arg Met Arg Ala Met Leu Ile Phe Ala
 370 375 380
 Phe Phe Pro Leu Leu Val Leu Leu Ala Gln Pro Leu Gly Thr Ile Ser
 385 390 395 400
 Pro Trp Phe Pro Val Ile Met Ile Gly Ile Gly Gly Ala Ala His Gln
 405 410 415
 Ser Trp Ser Ala Asn Ile Phe Ser Thr Val Gly Asp Met Phe Pro Lys
 420 425 430
 Ser Ala Ile Ala Ser Ile Thr Gly Ile Gly Gly Met Ala Gly Gly Val
 435 440 445
 Gly Ser Met Ile Leu Gln Tyr Ser Ala Gly Glu Leu Phe Val His Ala
 450 455 460
 Asp Lys Thr Gln Met Val Phe Met Gly Phe Ile Gly Lys Pro Ala Gly
 465 470 475 480
 Tyr Phe Val Ile Phe Cys Ile Cys Ser Val Ala Tyr Leu Ile Gly Trp
 485 490 495
 Ile Val Met Lys Ala Leu Val Pro Lys Tyr Lys Pro Ile Ile Leu Asn
 500 505 510

<210> 6041

<211> 820

<212> PRT

<213> B.fragilis

<400> 6041

Pro Asp Asn Ser Glu Thr Met Lys Met Lys Leu Ile Cys Phe Leu Met
 1 5 10 15
 Leu Ser Val Phe Phe Ile Phe Pro Val Arg Ala Lys Asn Thr Phe Gly
 20 25 30
 Lys Lys Lys Asp Lys Val Thr Arg Leu His Phe Tyr Asp Leu Asn Lys
 35 40 45
 Asn Gly Arg Met Asp Thr Tyr Glu Asn Pro Ser Ala Pro Val Glu Tyr
 50 55 60
 Arg Val Glu His Leu Leu Ser Gln Met Thr Leu Glu Glu Lys Val Gly
 65 70 75 80
 Gln Met Leu Thr Ser Leu Gly Trp Pro Met Tyr Glu Arg Val Gly Glu
 85 90 95
 Asp Ile Arg Leu Thr Pro Gln Leu Glu Lys Glu Ile Gly Glu Tyr His
 100 105 110
 Ile Gly Ser Leu Trp Gly Val Met Arg Ala Asp Pro Trp Thr Gln Arg
 115 120 125
 Thr Leu His Thr Gly Leu Asn Pro Ser Leu Ala Ala Arg Ala Ser Asn
 130 135 140
 Arg Leu Gln Ser Tyr Val Ile Glu His Ser Arg Leu Gly Ile Pro Leu
 145 150 155 160
 Phe Leu Ala Glu Glu Cys Pro His Gly His Met Ala Ile Gly Ala Thr
 165 170 175
 Val Cys Pro Thr Ser Ile Gly Gln Ala Ser Thr Trp Asn Pro Glu Leu
 180 185 190
 Ile Arg Gln Met Gly Arg Val Ile Ala Ile Glu Ala Ser Ala Gln Gly
 195 200 205
 Ala His Ile Gly Tyr Gly Pro Val Leu Asp Leu Ala Arg Asp Pro Arg

210	215	220
Trp Ser Arg Val Glu	Glu Thr Tyr Gly Glu	Asp Pro Tyr Leu Asn Gly
225	230	235
Val Met Gly Thr Ala	Leu Val Arg Gly Phe	Gln Gly Glu Thr Leu Asn
245	250	255
Asp Gly Lys Ser Val	Ile Ala Thr Leu Lys	His Phe Ala Ser Tyr Gly
260	265	270
Trp Thr Glu Gly Gly	His Asn Gly Gly	Thr Ala His Ile Gly Glu Arg
275	280	285
Glu Leu Glu Glu Ala	Ile Phe Pro Pro	Phe Arg Glu Ala Val Gly Ala
290	295	300
Gly Ala Leu Ser Val	Met Ser Ser Tyr	Asn Glu Ile Asp Gly Asn Pro
305	310	315
Cys Thr Gly Ser Arg	Tyr Leu Leu Thr	Asp Ile Leu Lys Asp Arg Trp
325	330	335
Gln Phe Lys Gly Phe	Val Val Ser Asp	Leu Tyr Ala Val Gly Gly Leu
340	345	350
Arg Glu His Gly Val	Ala Gly Asn Asp	Tyr Glu Ala Ala Ile Lys Ala
355	360	365
Val Asn Ala Gly Val	Asp Ser Asp Leu	Gly Thr Asn Val Tyr Ala Glu
370	375	380
Gln Leu Val Ala Ala	Val Lys Arg Gly	Asp Val Ala Val Ala Thr Ile
385	390	395
Asp Lys Ala Val Arg	Ile Leu Ser Leu	Lys Phe Gln Met Gly Leu
405	410	415
Phe Asp Asp Pro Phe	Val Asp Glu Lys	Gln Ala Val Gln Leu Ile Ala
420	425	430
Ser Ser Glu His Thr	Gly Leu Ala Arg	Glu Val Ala Arg Gln Ser Ile
435	440	445
Val Leu Leu Lys Asn	Lys Asp Lys Leu	Leu Pro Leu Lys Lys Asp Ile
450	455	460
Arg Thr Leu Ala Val	Ile Gly Pro Asn	Ala Asp Asn Val Tyr Asn Met
465	470	475
Leu Gly Asp Tyr Thr	Ala Pro Gln Ala	Asp Gly Thr Val Val Thr Val
485	490	495
Leu Asp Gly Ile Arg	Gln Lys Val Ser	Lys Glu Thr Arg Val Leu Tyr
500	505	510
Ala Lys Gly Cys Ala	Val Arg Asp Ser	Ser Arg Thr Gly Phe Lys Asp
515	520	525
Ala Ile Glu Thr Ala	Arg Asn Ala Asp	Ala Val Val Met Val Met Gly
530	535	540
Gly Ser Ser Ala Arg	Asp Phe Ser Ser	Glu Tyr Glu Glu Thr Gly Ala
545	550	555
Ala Lys Val Thr Ile	Asn Gln Ile Ser	Asp Met Glu Ser Gly Glu Gly
565	570	575
Tyr Asp Arg Ala Thr	Leu His Leu Met	Gly Arg Gln Leu Glu Leu Leu
580	585	590
Glu Glu Ile Ser Arg	Leu Gly Lys Pro	Val Val Leu Val Leu Ile Lys
595	600	605
Gly Arg Pro Leu Leu	Met Glu Gly Ala	Ile Gln Glu Ala Glu Ala Ile
610	615	620
Val Asp Ala Trp Tyr	Pro Gly Met Gln	Gly Gly Asn Ala Val Ala Asp
625	630	635
Val Leu Phe Gly Asp	Tyr Asn Pro Ala	Gly Arg Leu Thr Leu Ser Val
645	650	655
Pro Arg Ser Val Gly	Gln Leu Pro Val	Tyr Tyr Asn Thr Arg Arg Lys
660	665	670
Gly Asn Arg Ser Arg	Tyr Ile Glu Glu	Pro Gly Thr Pro Arg Tyr Pro
675	680	685

Phe Gly Tyr Gly Leu Ser Tyr Thr Thr Phe Ser Tyr Thr Asp Met Lys
 690 695 700
 Val Gln Val Thr Glu Gly Ser Asp Asp Cys Arg Val Asp Val Thr Val
 705 710 715 720
 Thr Ile Gln Asn Gln Gly Thr Ala Asp Gly Asp Glu Met Ala Gln Leu
 725 730 735
 Tyr Phe Arg Asp Asp Val Ser Ser Phe Thr Thr Pro Ala Lys Gln Leu
 740 745 750
 Arg Ala Phe Ser Arg Ile His Leu Lys Ala Gly Glu Ser Arg Glu Val
 755 760 765
 Thr Phe Thr Leu Asp Lys Lys Ser Leu Ala Leu Tyr Met Gln Glu Gly
 770 775 780
 Glu Trp Val Val Glu Pro Gly Arg Phe Thr Ile Met Val Gly Gly Ser
 785 790 795 800
 Ser Glu Asp Ile Ala Cys Arg Gln Ala Phe Glu Ile Asn Arg Lys Tyr
 805 810 815
 Thr Phe Lys Met
 820

<210> 6042

<211> 554

<212> PRT

<213> B.fragilis

<400> 6042

Val Leu Phe Arg Glu Ile Asn Arg Gly Pro Asp Leu Pro Glu Glu Phe
 1 5 10 15
 Lys Glu Thr Ile Tyr Lys Thr Ser Pro Ile Ile Pro Pro Gly Gly His
 20 25 30
 Leu Pro Ile Gln Pro Lys Lys Gly Tyr Ser Asn Leu Pro Arg Ile Phe
 35 40 45
 Ser Val Arg Ile Glu Thr Thr Ser Pro Ile Tyr Thr Asp Lys Gly Ser
 50 55 60
 Lys Thr Ile Ala Ser Thr Leu Pro Gly Asn Arg Ala His Ser Phe Asp
 65 70 75 80
 Gly Trp Ile Thr Ser Thr Gly Arg Ile Ser Ala Asn Ala Pro Lys Ala
 85 90 95
 Gly Pro Pro Arg Pro Val Val Thr Asp Gly Val Tyr Arg Arg Thr Glu
 100 105 110
 Lys Leu Asn Ile Thr Ser Val Ser Thr Glu Ser Gly Ile Val Cys Asn
 115 120 125
 Ile Gly Phe Asp Glu Ser Leu Met Tyr Glu Ala Trp Lys Asn Val Ser
 130 135 140
 Leu Lys Glu Leu Pro Gly Leu Pro Val Ile Lys Tyr Pro Glu Gly Val
 145 150 155 160
 Ala Ala Leu Ala Arg His Leu Glu Glu Val Met Arg Tyr Gln Thr Pro
 165 170 175
 Ala Asp Tyr His Val Phe Arg Ile Gln Val Ala Ser Glu Thr Leu Glu
 180 185 190
 Glu Thr Glu Tyr Pro Glu Phe Ile Asn Pro Ile Gly Ser Asp Gly Lys
 195 200 205
 Thr Tyr Ala Leu Leu Lys Glu Ala Arg Thr Glu Arg Val Val Ile Ser
 210 215 220
 Gly Gln Ala Val Asp Val Lys Val Pro Ala Gly Tyr Gly Ile Ser Pro
 225 230 235 240
 Phe Leu Lys Val Ser Arg Ile Leu Glu Met Ile Phe Ser Ala Tyr Gly
 245 250 255
 Phe Thr Leu Val Glu Asn Pro Phe Ala Thr Asp Tyr Gln Leu Ser Lys
 260 265 270

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Met Val Val Leu Asn Asn Val Ala Asp Thr Ile Val Thr Gly Glu Ile
    275          280          285
Asp Tyr Arg Asn Leu Met Pro Asp Cys Thr Val Asn Glu Phe Leu Asp
    290          295          300
Ala Leu Phe Cys Arg Thr Gly Ala Lys Val Tyr Val Asn Ala Gly Arg
    305          310          315          320
Lys Ala Val Ile Arg Leu Leu Lys Asp Ser Ile Gly Ala Thr Ala Ser
          325          330          335
Ala Asp Trp Thr Pro Leu Lys Ala Ser Glu Pro Glu Ile Asn Tyr Thr
    340          345          350
Pro Ala Lys Gln Leu Lys Leu Ser Ala Gly Thr Ser Phe Lys Glu Ala
    355          360          365
Glu Pro Ala Ala Asp Ser Phe Glu Lys Phe Leu Lys Pro Tyr Gly Gly
    370          375          380
Ile Ile Thr Glu Phe Thr Gly Asp Arg Asp Val Pro Asp Glu Leu Tyr
    385          390          395          400
Ile Thr Tyr Gln Pro Ser Thr Gly Arg Tyr Tyr Lys Arg Asp Ile Val
          405          410          415
Asn Lys Lys Lys Lys Trp Ile Ser Ser Asp Phe Phe Pro Trp Asp Lys
          420          425          430
Gly Thr Pro Gly Val Glu Tyr Leu Glu Ile Thr Gly Lys Asp Glu Cys
          435          440          445
Val Pro Met Ala Phe Lys Thr Gly Leu Leu Thr Pro Gly Tyr Leu Ala
          450          455          460
Gly Ala Val Asn Ile Asn Thr Thr Leu Arg Gly Ala Ala Lys Glu Gln
    465          470          475          480
Gly Glu Lys Lys Gln Thr Pro Leu Ala Phe Cys Phe Ala Met Gly Lys
          485          490          495
Thr Asn Gln Ile Ile Gly Ala Gly Ala Leu Val Glu Glu Tyr Tyr Phe
          500          505          510
Gly Ser Ser Leu Cys Arg Glu Pro Lys Gly Glu Tyr Phe Gln Asp Pro
          515          520          525
Gly Gly Asn Val Tyr Arg Tyr Ser Leu Val Phe Lys Gly Glu Asp Gly
          530          535          540
Ala Phe Asn Arg Phe Phe Lys Glu Tyr Asp
    545          550

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<210> 6043

<211> 71

<212> PRT

<213> B.fragilis

<400> 6043

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Thr Pro Ser Val Thr Thr Gly Arg Gly Gly Pro Ala Leu Gly Ala Leu
1          5          10          15
Ala Asp Ile Arg Pro Val Asp Val Ile His Pro Ser Lys Glu Cys Ala
          20          25          30
Arg Leu Pro Gly Asn Val Asp Ala Ile Val Leu Leu Pro Leu Ser Val
          35          40          45
Tyr Met Gly Asp Val Val Ser Ile Leu Thr Leu Lys Ile Arg Gly Arg
          50          55          60
Phe Glu Tyr Pro Phe Phe Gly
65          70

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<210> 6044

<211> 177

<212> PRT

<213> B.fragilis

<400> 6044

Val Ala Cys Ser Thr Val Ile Ser Gly Phe Arg Pro Glu Leu Ser Ser
 1 5 10 15
 Ser Lys Thr Glu Asp Phe Phe Trp Ala Gly Thr Asn Ala Ala Thr
 20 25 30
 Glu Asp Gln Asn Phe Val Ile Tyr Ser Tyr Pro Tyr Thr Asp Lys Asp
 35 40 45
 Thr Phe Thr Lys Glu Phe Phe Ile His Lys Arg Asp Ser Val Met Lys
 50 55 60
 Ala Asn Ile Pro Gly Ala Lys Glu Gly Met Tyr Met Ala Thr Asp Ser
 65 70 75 80
 Ser Thr Val Glu Val Arg Pro Ile Asp Ile His Gly Asp Tyr Thr Met
 85 90 95
 Glu Ala Arg Gly Leu Trp Arg Ile Lys Gly Asp Phe Met Gly Gly Pro
 100 105 110
 Phe Val Ser His Thr Arg Leu Asp Lys Ala Ser His Arg Ile Ile Thr
 115 120 125
 Thr Glu Val Phe Ile Tyr Ser Pro Asp Lys Met Lys Arg Asp Leu Met
 130 135 140
 Arg Arg Leu Glu Ala Ser Leu Tyr Thr Leu Gln Leu Pro Thr Glu Lys
 145 150 155 160
 Ala Gln Glu Gln Ile Pro Met Gly Ile Glu Gln Glu Glu Lys Thr Asn
 165 170 175
 Lys

<210> 6045

<211> 81

<212> PRT

<213> B.fragilis

<400> 6045

Leu Arg Ile Ser Lys Glu Leu Ile Ser Cys Asn Tyr Glu Val Asn Ile
 1 5 10 15
 Asn Val Leu Leu Met Leu Thr Ser Tyr Ser Ser Leu Ile Lys Ile Leu
 20 25 30
 Leu Phe Asp Asn Gln Leu Leu Ile Phe Trp Met His Ser Val Val Lys
 35 40 45
 Phe Phe Ser Tyr Val Gln Asp Val Arg Ser Cys Leu Phe Ile Lys Leu
 50 55 60
 Pro Leu Arg Leu Ser Ile Ala Cys Leu Ser Thr Tyr Phe His Ile Leu
 65 70 75 80
 Leu

<210> 6046

<211> 384

<212> PRT

<213> B.fragilis

<400> 6046

Glu Asn Tyr Ser Tyr Leu Cys Tyr Pro Lys Gly Glu Leu Arg Cys Arg
 1 5 10 15
 Arg Ile Ala Glu Met Asn Glu Arg Lys Ile Ile His Ile Asp Met Asp
 20 25 30
 Ala Phe Tyr Ala Ser Val Glu Gln Arg Asp His Pro Glu Leu Arg Gly
 35 40 45
 Lys Pro Leu Ala Val Gly His Ala Glu Glu Arg Gly Val Val Ala Ala
 50 55 60

Ala Ser Tyr Glu Ala Arg Arg Tyr Gly Val Arg Ser Ala Met Ser Ser
 65 70 75 80
 Gln Lys Ala Lys Arg Leu Cys Pro Gln Leu Ile Phe Val Pro Gly Arg
 85 90 95
 Met Glu Val Tyr Lys Ser Val Ser Arg Gln Val His Glu Ile Phe His
 100 105 110
 Glu Tyr Thr Asp Leu Ile Glu Pro Leu Ser Leu Asp Glu Ala Phe Leu
 115 120 125
 Asp Val Thr Glu Asn Lys Gln Gly Ile Leu Leu Ala Val Asp Ile Ala
 130 135 140
 Lys Ala Ile Lys Gln Arg Ile Arg Glu Glu Leu Ser Leu Val Ala Ser
 145 150 155 160
 Ala Gly Val Ser Tyr Asn Lys Phe Leu Ala Lys Ile Ala Ser Asp Phe
 165 170 175
 Arg Lys Pro Asp Gly Leu Cys Thr Ile His Pro Asp Gln Ala Ile Asp
 180 185 190
 Phe Ile Ala Arg Leu Pro Ile Glu Ser Phe Trp Gly Val Gly Pro Val
 195 200 205
 Thr Ala Arg Lys Met His Leu Leu Gly Ile His Asn Gly Leu Gln Leu
 210 215 220
 Arg Glu Cys Ser Ser Glu Met Leu Val Arg Gln Phe Gly Lys Val Gly
 225 230 235 240
 Leu Leu Tyr Tyr Asp Phe Ala Arg Gly Val Asp Leu Arg Pro Val Glu
 245 250 255
 Ala Val Arg Ile Arg Lys Ser Ile Gly Cys Glu His Thr Leu Glu Lys
 260 265 270
 Asp Ile His Val Arg Ser Ser Val Ile Ile Glu Leu Tyr His Val Ala
 275 280 285
 Thr Glu Leu Val Glu Arg Leu Gln Gln Lys Glu Phe Arg Gly Asn Thr
 290 295 300
 Leu Thr Leu Lys Ile Lys Phe His Asp Phe Ser Gln Ile Thr Arg Ser
 305 310 315 320
 Met Thr Gln Ala Gln Glu Leu Thr Asn Leu Glu Arg Ile Leu Pro Leu
 325 330 335
 Ala Lys Gln Leu Leu Lys Glu Val Glu Tyr Glu Gln His Pro Ile Arg
 340 345 350
 Leu Ile Gly Leu Ser Val Ser Asn Pro Arg Glu Glu Ala Asp Glu His
 355 360 365
 Arg Gly Val Trp Glu Gln Leu Ser Phe Glu Phe Ser Asp Trp Gly Lys
 370 375 380

<210> 6047

<211> 62

<212> PRT

<213> B.fragilis

<400> 6047

Arg Cys Leu Ser Pro Ser Arg Ser Ser Ser Ala Ser Cys Ser Pro Val
 1 5 10 15
 Asp Ala Pro Asp Gly Thr Asp Ala Arg Pro Ile Met Pro Asp Ser Asn
 20 25 30
 Thr Thr Ser Thr Ser Thr Val Gly Leu Pro Leu Glu Ser Arg Ile Ser
 35 40 45
 Arg Pro Val Ile Phe Ser Ile Phe Ile Val Ser Leu Val Phe
 50 55 60

<210> 6048

<211> 1110

<212> PRT

<213> B.fragilis

<400> 6048

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Ile Met Gly Phe Asn Glu Phe Leu Ser Ser Ile Phe Gly Asn Lys Ser
1      5      10      15
Thr Arg Asp Met Lys Glu Ile Gln Pro Trp Val Asp Lys Ile Lys Ala
20      25      30
Ala Tyr Pro Glu Val Ala Lys Leu Asp Asn Asp Gly Leu Arg Ala Lys
35      40      45
Thr Glu Glu Leu Lys Glu Tyr Ile Arg Asn Ser Ala Ser Lys Glu Arg
50      55      60
Ala Lys Ala Asp Glu Leu Arg Ala Gly Ile Glu Asn Val Glu Leu Glu
65      70      75      80
Asp Arg Glu Glu Val Phe Ala Gln Ile Asp Lys Ile Glu Lys Glu Ile
85      90      95
Leu Glu Ile Tyr Glu Lys Ala Leu Asp Glu Val Leu Pro Val Ala Phe
100     105     110
Ser Ile Val Lys Glu Ser Ala Lys Arg Phe Ser Glu Asn Glu Glu Ile
115     120     125
Val Val Thr Ala Thr Asp Phe Asp Arg Thr Leu Ala Ala Thr Lys Asp
130     135     140
Phe Val Arg Ile Glu Gly Asp Lys Ala Ile Trp Gln Asn His Trp Asn
145     150     155     160
Ala Gly Gly Asn Asp Thr Val Trp Asn Met Val His Tyr Asp Val Gln
165     170     175
Leu Phe Gly Gly Val Val Leu His Lys Gly Lys Ile Ala Glu Met Ala
180     185     190
Thr Gly Glu Gly Lys Thr Leu Val Ala Thr Leu Pro Val Phe Leu Asn
195     200     205
Ala Leu Thr Gly Asn Gly Val His Val Val Thr Val Asn Asp Tyr Leu
210     215     220
Ala Lys Arg Asp Ser Glu Trp Met Gly Pro Leu Tyr Met Phe His Gly
225     230     235     240
Leu Ser Val Asp Cys Ile Asp Arg His Gln Pro Asn Ser Asp Ala Arg
245     250     255
Arg Gln Ala Tyr Leu Ala Asp Ile Thr Phe Gly Thr Asn Asn Glu Phe
260     265     270
Gly Phe Asp Tyr Leu Arg Asp Asn Met Ala Ile Ser Pro Lys Asp Leu
275     280     285
Val Gln Arg Gln His Asn Tyr Ala Ile Val Asp Glu Val Asp Ser Val
290     295     300
Leu Ile Asp Asp Ala Arg Thr Pro Leu Ile Ile Ser Gly Pro Val Pro
305     310     315     320
Lys Gly Glu Asp Gln Leu Phe Asp Gln Leu Arg Pro Leu Val Glu Arg
325     330     335
Leu Val Glu Ala Gln Lys Val Leu Ala Thr Lys Tyr Leu Ser Glu Ala
340     345     350
Lys Lys Leu Ile Asn Ser Asp Asp Lys Lys Glu Val Glu Glu Gly Phe
355     360     365
Leu Ala Leu Phe Arg Ser His Lys Ala Leu Pro Lys Asn Lys Ala Leu
370     375     380
Ile Lys Phe Leu Ser Glu Gln Gly Ile Lys Ala Gly Met Leu Lys Thr
385     390     395     400
Glu Glu Val Tyr Met Glu Gln Asn Asn Lys Arg Met His Glu Ala Thr
405     410     415
Asp Pro Leu Tyr Phe Val Ile Asp Glu Lys Leu Asn Ser Val Asp Leu
420     425     430
Thr Asp Lys Gly Val Asp Leu Ile Thr Gly Asn Ser Glu Asp Pro Thr
435     440     445

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Leu Phe Val Leu Pro Asp Ile Ala Ala Gln Leu Ser Glu Leu Glu Asn
 450 455 460
 Glu His Gly Leu Ser Asp Glu Gln Lys Leu Glu Lys Lys Asp Ala Leu
 465 470 475 480
 Leu Thr Asn Tyr Ala Ile Lys Ser Glu Arg Val His Thr Ile Asn Gln
 485 490 495
 Leu Leu Lys Ala Tyr Thr Met Phe Glu Lys Asp Asp Glu Tyr Val Val
 500 505 510
 Ile Asp Gly Gln Val Lys Ile Val Asp Glu Gln Thr Gly Arg Ile Met
 515 520 525
 Glu Gly Arg Arg Tyr Ser Asp Gly Leu His Gln Ala Ile Glu Ala Lys
 530 535 540
 Glu Gly Val Lys Val Glu Ala Ala Thr Gln Thr Phe Ala Thr Ile Thr
 545 550 555 560
 Leu Gln Asn Tyr Phe Arg Met Tyr His Lys Leu Ser Gly Met Thr Gly
 565 570 575
 Thr Ala Glu Thr Glu Ala Gly Glu Leu Trp Asp Ile Tyr Lys Leu Asp
 580 585 590
 Val Val Val Ile Pro Thr Asn Arg Pro Ile Ala Arg Lys Asp Met Asn
 595 600 605
 Asp Arg Val Tyr Lys Thr Lys Arg Glu Lys Tyr Lys Ala Val Ile Glu
 610 615 620
 Glu Ile Glu Gln Leu Val Gln Ala Gly Arg Pro Val Leu Val Gly Thr
 625 630 635 640
 Thr Ser Val Glu Ile Ser Glu Met Leu Ser Lys Met Leu Thr Met Arg
 645 650 655
 Lys Ile Glu His Asn Val Leu Asn Ala Lys Leu His Gln Lys Glu Ala
 660 665 670
 Asp Ile Val Ala Lys Ala Gly Leu Ser Gly Thr Val Thr Ile Ala Thr
 675 680 685
 Asn Met Ala Gly Arg Gly Thr Asp Ile Lys Leu Ser Pro Glu Val Lys
 690 695 700
 Ala Ala Gly Gly Leu Ala Ile Ile Gly Thr Glu Arg His Glu Ser Arg
 705 710 715 720
 Arg Val Asp Arg Gln Leu Arg Gly Arg Ala Gly Arg Gln Gly Asp Pro
 725 730 735
 Gly Ser Ser Val Phe Phe Val Ser Leu Glu Asp Asp Leu Met Arg Leu
 740 745 750
 Phe Ser Ser Asp Arg Ile Ala Ser Val Met Asp Lys Leu Gly Phe Gln
 755 760 765
 Glu Gly Glu Met Ile Glu His Lys Met Ile Ser Asn Ser Ile Glu Arg
 770 775 780
 Ala Gln Lys Lys Val Glu Glu Asn Asn Phe Gly Ile Arg Lys Arg Leu
 785 790 795 800
 Leu Glu Tyr Asp Asp Val Met Asn Lys Gln Arg Thr Val Val Tyr Thr
 805 810 815
 Lys Arg Arg His Ala Leu Met Gly Glu Arg Ile Gly Met Asp Ile Val
 820 825 830
 Asn Met Ile Trp Asp Arg Cys Ala Ala Ala Ile Glu Asn Asn Ala Asp
 835 840 845
 Tyr Glu Glu Cys Lys Leu Asp Leu Leu Gln Thr Leu Ala Met Glu Ala
 850 855 860
 Pro Phe Thr Glu Glu Glu Phe Arg Asn Glu Lys Lys Asp Lys Leu Ala
 865 870 875 880
 Asp Lys Thr Phe Asp Val Ala Met Ala Asn Phe Lys Arg Lys Thr Glu
 885 890 895
 Arg Leu Ala Gln Ile Ala Asn Pro Val Ile Lys Gln Val Tyr Glu Asn
 900 905 910
 Gln Gly His Met Tyr Glu Asn Ile Leu Ile Pro Ile Thr Asp Gly Lys

915	920	925
Arg Met Tyr Asn Ile Ser Cys Asn Leu Lys Ala Ala Tyr Glu Ser Glu		
930	935	940
Ser Lys Glu Val Val Lys Ser Phe Glu Lys Ser Ile Leu Leu His Val		
945	950	955
Ile Asp Glu Ser Trp Lys Glu Asn Leu Arg Glu Leu Asp Glu Leu Lys		
965	970	975
His Ser Val Gln Asn Ala Ser Tyr Glu Gln Lys Asp Pro Leu Leu Ile		
980	985	990
Tyr Lys Leu Glu Ser Val Thr Leu Phe Asp Asn Met Val Asn Lys Ile		
995	1000	1005
Asn Asn Gln Thr Val Ser Ile Leu Met Arg Gly Gln Ile Pro Val Ala		
1010	1015	1020
Glu Pro Thr Glu Glu Gln Gln Glu Ala Ala Arg Arg Val Glu Val Arg		
1025	1030	1035
Gln Ala Ala Pro Glu Gln Arg Gln Asp Met Ser Lys Tyr Arg Glu Gln		
1045	1050	1055
Lys Gln Asp Leu Asn Asp Pro Asn Gln Gln Ala Ala Ala Gln Gln Asp		
1060	1065	1070
Thr Arg Glu Ala Val Lys Arg Glu Pro Ile Arg Ala Glu Lys Thr Val		
1075	1080	1085
Gly Arg Asn Asp Pro Cys Pro Cys Gly Ser Gly Lys Lys Tyr Lys Asn		
1090	1095	1100
Cys His Gly Arg Asn Ser		
1105	1110	

<210> 6049

<211> 401

<212> PRT

<213> B.fragilis

<400> 6049

Glu Ala Glu Ser Leu Ser Phe Ile Asp Asn Leu Lys Leu Lys Ala Ser		
1	5	10
Tyr Val Phe Leu Gly Asn Asn Asn Ile Gly Asn Tyr Pro Tyr Gln Ser		
20	25	30
Thr Tyr Ala Leu Gly Lys Ala Met Asn Tyr Val Phe Gly Gly Val Tyr		
35	40	45
Thr Gln Gly Ala Ala Val Thr Tyr Val Asp Pro Thr Leu Lys Trp		
50	55	60
Glu Lys Thr Arg Thr Thr Asp Val Gly Ile Glu Thr Ala Phe Trp Asn		
65	70	75
Asn Lys Leu Thr Phe Asn Ala Ala Tyr Phe Tyr Arg Lys Thr Thr Asp		
85	90	95
Ile Leu Tyr Lys Pro Ser Ala Ser Tyr Ser Ser Ile Phe Gly Leu Gly		
100	105	110
Leu Ser Gln Val Asn Thr Gly Ser Leu Glu Asn Lys Gly Trp Glu Phe		
115	120	125
Glu Ile Gly His Gln Asn Lys Ile Gly Glu Phe Ser Tyr His Val Asn		
130	135	140
Gly Asn Phe Ser Ile Ile Lys Asn Lys Val Ile Ser Leu Gly Val Gly		
145	150	155
Asp Val Glu Gln Lys Ser Gly Met Ile Gly Asn Gly Ser Asp Leu Phe		
165	170	175
Leu Gly Tyr Pro Met Asn Met Phe Tyr Gly Tyr Lys Thr Asp Gly Val		
180	185	190
Phe Leu Thr Asp Asp Glu Val Lys Glu Trp His Asp Gln Ser Lys Ile		
195	200	205
Ala Pro Asn Ser Lys Ala Gly Asp Leu Arg Tyr Val Asp Ile Ser Gly		

210	215	220
Asp Gly Lys Val Asp Glu Ser Asp Lys Thr Tyr Leu Gly Ser Lys Ile		
225	230	235
Pro Gln Tyr Thr Phe Gly Leu Gly Leu Gly Ala Glu Tyr Lys Gly Phe		240
	245	250
Asp Phe Asn Ile Leu Leu Gln Gly Val Ala Lys Val Lys Gly Gln Leu		255
	260	265
Thr Asn Tyr Ala Gly Tyr Ala Phe Phe Gln Glu Gly Asn Ile Gln Lys		270
	275	280
Trp Gln Ala Glu Glu Thr Trp Thr Asn Asn Gln Ser Asn Arg Tyr Pro		285
	290	295
Lys Tyr Pro Arg Leu Glu Val Met Ser Asn Ala Gly Ser Asn Asn Thr		300
305	310	315
Leu Gly Ser Asp Phe Trp Ile Leu Asp Ala Ser Tyr Leu Lys Val Arg		320
	325	330
Asn Ile Gln Leu Gly Tyr Thr Leu Pro Lys Arg Ile Thr Gln Lys Phe		335
	340	345
Gly Ser Ser Asn Leu Arg Phe Tyr Ile Ser Leu Asp Asn Pro Phe Ser		350
	355	360
Ile Ser Gly Tyr Arg Lys Gly Trp Asp Pro Glu Ile Asn Thr Asp Gly		365
	370	375
Ser Tyr Tyr Pro Ile Leu Ser Thr Tyr Thr Phe Gly Leu Thr Leu Lys		380
385	390	395
Phe		400

<210> 6050

<211> 349

<212> PRT

<213> B.fragilis

<400> 6050

Thr Asp Leu Leu Leu Thr Tyr Phe Leu Leu Ile Met Glu Lys Lys Thr	
1	5
Arg Lys Ser Phe Ile Trp Leu Ala Ile Leu Leu Leu Gly Thr Ile Trp	10
	15
	20
Ile Leu Ala Gln Arg Asn Lys Gln Ile Pro Tyr Asn Ser Ile Asn Gly	25
	30
	35
Leu Val Phe Gly Thr Val Tyr Asn Ile Thr Tyr Gln Tyr Asp Gly Asn	40
	45
	50
Leu Lys Ala Glu Ile Asp Ala Glu Leu Lys Lys Phe Asp Gly Ser Leu	55
65	60
	65
Ser Pro Phe Asn Asp Thr Ser Val Ile Thr Arg Val Asn Arg Asn Glu	70
	75
	80
	85
Glu Ile Val Thr Asp Thr Phe Phe Gln Thr Cys Phe Asn Arg Ser Met	90
	95
	100
Glu Ile Ser Ala Glu Thr Arg Gly Ala Phe Asp Ile Thr Val Ala Pro	105
	110
	115
Leu Ala Asn Ala Trp Gly Phe Gly Phe Lys Lys Gly Ala Phe Pro Asp	120
130	125
	130
Ser Ile Met Ile Asp Ser Leu Leu Gln Ile Thr Gly Tyr Gln Lys Val	135
145	140
	145
Lys Leu Glu Asn Gly Lys Val Ile Lys Glu Asp Pro Arg Val Met Leu	150
	155
	160
	165
Ser Cys Ser Ala Val Ala Lys Gly Tyr Ser Val Asp Val Val Ala Arg	170
	175
	180
	185
Tyr Leu Asp Ser Lys Gly Ile Lys Asn Tyr Met Val Asp Ile Gly Gly	190
	195
	200
Glu Leu Val Val Lys Gly Val Asn Pro Lys Glu Glu Ala Trp Arg Ile	205

210	215	220
Gly Ile Asn Lys Pro Val Asp Asp Ser Leu Ser Leu Asn Gln Glu Ile		
225	230	235
Gln Thr Thr Leu Lys Leu Thr Asn Val Gly Ile Ala Thr Ser Gly Asn		240
	245	250
Tyr Arg Asn Phe Tyr Tyr Lys Asp Gly Lys Lys Tyr Ala His Thr Ile		255
	260	265
Asp Pro Arg Thr Gly Tyr Pro Val Gln His Asn Ile Leu Ser Ala Thr		270
	275	280
Val Val Ala Asp Asp Cys Met Thr Ala Asp Ala Leu Ala Thr Ala Phe		285
	290	295
Met Val Met Gly Leu Asp Glu Ala Glu Ala Phe Thr Lys Ser His Pro		300
305	310	315
Asn Ile Gly Ala Tyr Phe Ile Tyr Ser Asp Glu Lys Gly Glu Val Lys		320
	325	330
Ser Tyr Phe Thr Lys Asn Met Lys Gln Tyr Leu Asp Lys		335
	340	345

<210> 6051

<211> 542

<212> PRT

<213> B.fragilis

<400> 6051

Ile Arg Leu Leu Ala Ile Phe Val Ser Gly Ser Asp Arg Pro Tyr Trp		
1	5	10
Lys Leu Leu Met Asn Lys Ile Asp Met Thr Asn Glu Arg Met Lys Leu		15
	20	25
Leu Asn Cys Thr Leu Gly Leu Val Ala Gly Val Ser Leu Pro Val Ser		30
	35	40
Ala Leu Ala Val Pro Gln Pro Ala Gln Asp Gln Thr Glu Lys Gln Pro		45
	50	55
Asn Ile Ile Leu Ile Val Ala Asp Asp Leu Gly Tyr Gly Asp Leu Ser		60
65	70	75
Cys Tyr Gly Ala His Arg Ile Gln Thr Pro Gly Met Asp Arg Ile Ala		80
	85	90
Asn Glu Gly Ile Arg Phe Thr Gln Gly Phe Cys Thr Ala Ala Thr Ser		95
	100	105
Thr Pro Ser Arg Tyr Ser Val Met Thr Gly Lys Tyr Pro Trp Ser Asn		110
	115	120
Val Asp Ala Lys Ile Leu Pro Gly Asn Ala Ala Leu Ile Ile Asp Thr		125
	130	135
Gln Lys Ile Thr Leu Pro Lys Leu Met Lys Gln Ala Gly Tyr Thr Thr		140
145	150	155
Gly Ser Val Gly Lys Trp His Ile Gly Leu Gly Asp Gly His Val Asp		160
	165	170
Trp Asn Lys Glu Val His Pro Gly Ala Ala Glu Ile Gly Tyr Asp Tyr		175
	180	185
Ser Phe Ile Gln Ala Ala Thr Asn Asp Arg Val Pro Cys Val Phe Leu		190
	195	200
Glu Asn Gly Arg Val Val Gly Leu Asp Pro Asn Asp Pro Leu Tyr Val		205
	210	215
Asp Tyr Arg Lys Asn Phe Pro Gly Glu Pro Thr Gly Lys Glu Asn Pro		220
225	230	235
Glu Leu Leu Arg Met His Pro Ser Val Gly His Ala Gly Ser Ile Val		240
	245	250
Asn Gly Val Pro Arg Ile Gly Phe Gln Lys Gly Gly Lys Ala Ala Gln		255
	260	265
Trp Lys Asp Glu Glu Met Ala Gly Leu Phe Leu Asp Lys Ala Arg Gln		270

275 280 285
 Phe Val Asp Asp Asn Lys Asp Lys Pro Phe Phe Leu Tyr Tyr Gly Leu
 290 295 300
 His Gln Pro His Val Pro Arg Val Pro Asn Glu Arg Phe Val Gly Lys
 305 310 315 320
 Ser Gly Met Gly Pro Arg Gly Asp Val Ile Leu Glu Ala Asp Trp Cys
 325 330 335
 Val Asp Gln Phe Leu Lys Glu Leu Asp Lys Leu Gly Leu Ala Glu Asn
 340 345 350
 Thr Ile Val Ile Leu Thr Ser Asp Asn Gly Pro Val Leu Asp Asp Gly
 355 360 365
 Tyr Gln Asp Asp Ala Val Glu Leu Val Gly Asp His Lys Ile Ala Gly
 370 375 380
 Pro Leu Arg Gly Gly Lys Thr Ser Met Phe Asp Gly Gly Thr Arg Ile
 385 390 395 400
 Pro Phe Met Leu Arg Trp Pro Ala Lys Val Lys Pro Gln Val Ser Asp
 405 410 415
 Val Phe Val Cys Gln Met Asp Leu Leu Ala Ser Phe Ala Phe Leu Leu
 420 425 430
 Gly Gln Thr Tyr Pro Asp Lys Val Asp Ser Glu Asn Thr Leu Asp Ala
 435 440 445
 Phe Leu Gly Lys Ser Lys Lys Gly Arg Lys Glu Leu Val Ile Glu Gly
 450 455 460
 Met Phe Asn Tyr Ala Tyr Arg Gln Gly Asp Trp Ala Leu Ile Pro Pro
 465 470 475 480
 Tyr Tyr Asn Pro Tyr Ser Lys Glu Asp Gly Asp Phe Ile Gly Leu Gly
 485 490 495
 Tyr Gly Tyr Lys Leu Tyr Asn Leu Lys Ser Asp Ile Gly Gln Gln Lys
 500 505 510
 Asn Leu Ala Glu Lys Tyr Pro Lys Lys Leu Gly Glu Leu Ile Asn Arg
 515 520 525
 Phe Glu Tyr Leu Lys Ala His Ser Asp Lys Val Thr Arg Phe
 530 535 540

<210> 6052

<211> 541

<212> PRT

<213> B.fragilis

<400> 6052

Ser Ser Met Phe His Ser Phe Gln Thr Ser Ile Ala Gly Ile Glu Leu
 1 5 10 15
 Pro Arg Leu Phe Thr Tyr Pro Phe His Tyr Thr Pro His Pro Leu Cys
 20 25 30
 Val Met Ala Ala Gly Glu Val Gln Ala Tyr Ile Asn Lys Gln Thr Arg
 35 40 45
 Trp Lys Glu Glu Leu Asp Lys Gly Lys Met Phe Gly Val Leu Ile Val
 50 55 60
 Arg Thr Ser Asn Gly Gln Thr Gly Tyr Leu Ala Ala Phe Ser Gly Asn
 65 70 75 80
 Leu Cys Gly Ser Asn Ser His Ser Phe Phe Val Pro Pro Val Tyr Asp
 85 90 95
 Leu Leu Lys Pro Asp Gly Phe Phe Lys Ile Glu Glu Glu Gln Ile Ser
 100 105 110
 Ala Ile Asn His Gln Ile Gly Gln Leu Gln Asn Cys Asp Arg Tyr Leu
 115 120 125
 Glu Leu Gln Gln Lys Met Glu Arg Glu Thr Ala Ser Ser Gln Gln Ala
 130 135 140
 Leu Ser Glu Ala Arg Lys Val Leu Lys Ala Ala Lys Glu Lys Arg Glu

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145          150          155          160
Gln Arg Arg Leu His Arg Pro Asn Glu Asn Glu Gln Val Ala Met Ile
          165          170          175
Arg Glu Ser Gln Tyr Gln Lys Ala Glu Phe Lys Arg Leu Glu Arg Tyr
          180          185          190
Trp Lys Glu Gln Ile Ser Glu Ile Lys Thr Glu Leu Glu Ser Phe Ser
          195          200          205
Ser Gln Ile Glu Ala Leu Lys Ala Glu Arg Arg Asn Arg Ser Ala Ala
          210          215          220
Leu Gln Gln Lys Leu Phe Gln Gln Phe Asn Phe Leu Asn Ala Lys Gly
225          230          235          240
Glu Thr Lys Asn Leu Cys Ala Ile Phe Glu Glu Thr Val Gln Lys Thr
          245          250          255
Pro Pro Ala Gly Ala Gly Glu Cys Ala Ala Pro Lys Leu Leu Gln Tyr
          260          265          270
Ala Tyr Leu Ser Gly Leu Ser Pro Ile Ala Met Ala Glu Phe Trp Trp
          275          280          285
Gly Glu Ser Pro Lys Thr Glu Ile Arg His His Gly Tyr Tyr Tyr Pro
290          295          300
Ser Cys Arg Gly Lys Cys Glu Pro Ile Leu Arg His Met Leu Gln Gly
305          310          315          320
Leu Asn Val Glu Pro Ala Pro Ser Glu Arg Tyr Ser Leu Ser Gln Asn
          325          330          335
Met Pro Glu Ile Leu Phe Glu Asp Gln Trp Leu Leu Val Leu His Lys
          340          345          350
Pro Glu Gly Val Leu Ser Val Pro Gly Lys Ser Glu Glu Gln Ser Ile
          355          360          365
Tyr Ser Leu Leu Arg Ala Arg Tyr Pro Glu Ala Thr Gly Pro Leu Val
370          375          380
Val His Arg Leu Asp Met Ala Thr Ser Gly Leu Leu Leu Ala Ala Lys
385          390          395          400
Thr Gln Glu Val His Arg His Leu Gln Ala Gln Phe Glu Asn Arg Ser
          405          410          415
Ile Lys Lys Arg Tyr Ile Ala Leu Leu Asp Gly Ile Leu Pro Glu Glu
          420          425          430
Glu Gly Val Ile Asp Leu Pro Ile Cys Pro Asp Tyr Leu Asp Arg Pro
435          440          445
Arg Gln Met Val Asn Glu Glu Leu Gly Lys Thr Ala Ile Thr Arg Tyr
450          455          460
Gln Val Met Asp Arg Lys Asn Gly Gln Thr Arg Ile Ala Phe Phe Pro
465          470          475          480
Leu Thr Gly Arg Thr His Gln Leu Arg Val His Ala Ala His Pro Leu
          485          490          495
Gly Leu Asn Cys Pro Ile Val Gly Asp Glu Leu Tyr Gly Arg Lys Ala
          500          505          510
Glu Arg Leu Tyr Leu His Ala Glu Tyr Leu Glu Phe Ile His Pro Val
          515          520          525
Ser Gly Gln Arg Met Val Ile Glu Lys Lys Ala Glu Phe
530          535          540

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<210> 6053

<211> 166

<212> PRT

<213> B.fragilis

<400> 6053

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Phe Ser Ala Phe Phe Val Ile Tyr Pro Phe Ile Ser Gly Thr Ile Ile
1          5          10          15
Ile Lys Tyr Ser Leu Ile Arg Gln Arg Ile Leu Phe Phe Leu Lys Phe

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	20		25		30										
Ile	Ala	Thr	Phe	Ala	Ala	Thr	Met	Ile	Lys	Tyr	Ile	Phe	Cys	Ile	Leu
	35						40					45			
Ile	Gly	Ile	Phe	Phe	Val	Tyr	Gly	Ala	Gly	Tyr	Thr	Ala	Ser	Ile	Glu
	50					55					60				
Glu	Thr	Ala	Asp	Leu	Pro	Ala	Glu	Val	Thr	Ala	Thr	Phe	Val	Ser	Gln
65					70					75					80
Tyr	Ala	Gly	Asp	His	Ser	Leu	Phe	Asn	Asp	Glu	Thr	Ala	Glu	Ser	Lys
			85						90					95	
Val	Cys	Asp	Ala	Ile	Leu	Pro	His	Ser	Ser	Phe	Ser	Arg	Glu	Leu	Ser
			100						105				110		
Ser	Ser	Lys	Ile	Leu	Lys	Leu	Lys	Leu	Gln	Thr	Ala	Ile	Arg	Leu	Leu
		115						120					125		
Asn	Ala	Ser	Leu	Phe	His	Gln	Ser	Glu	Arg	Gly	Asp	Thr	Tyr	Pro	Asp
	130					135					140				
Phe	Asn	His	Asn	Phe	Ile	Lys	Tyr	Ser	Ser	Gly	Tyr	Tyr	Val	Tyr	Ser
145					150					155					160
Leu	Glu	His	Ile	Leu	Ile										
				165											

<210> 6054

<211> 307

<212> PRT

<213> B.fragilis

<400> 6054

Glu	Ser	Leu	Pro	Tyr	Thr	Gln	Phe	Glu	Tyr	Leu	Asn	Ile	Met	Ala	Asp
1				5					10					15	
Asn	Tyr	Ile	Glu	Arg	Gln	Tyr	Glu	Gln	Tyr	Glu	Ala	Arg	Lys	Ala	Ala
			20					25					30		
Trp	Glu	Lys	Ala	Arg	Lys	Tyr	Gly	Lys	Lys	Lys	Thr	Gly	Ile	Thr	His
		35					40					45			
Pro	Ala	Arg	Thr	Glu	Gln	Pro	Gly	Gln	Thr	Thr	Ile	Glu	Pro	His	His
	50					55					60				
Tyr	Lys	Arg	Val	Phe	Val	Thr	Gly	Gly	Ala	Asn	Gly	Ile	Gly	Lys	Ala
65					70					75					80
Ile	Val	Glu	Ile	Phe	Cys	Lys	Ser	Gly	Tyr	Arg	Val	Ala	Phe	Cys	Asp
				85					90					95	
Lys	Asp	Gly	Ile	Ala	Gly	Lys	Arg	Thr	Ala	Glu	Glu	Thr	Gly	Ala	Ile
			100					105					110		
Phe	His	Gln	Val	Asp	Ile	Ser	Asp	Lys	Asp	Met	Leu	Glu	His	Cys	Met
		115					120						125		
Gln	Ser	Ile	Ile	Glu	Glu	Trp	Asp	Asp	Ile	Asp	Ile	Leu	Ile	Asn	Asn
	130					135						140			
Ala	Gly	Ile	Ser	Asp	Phe	Ser	Pro	Ile	Thr	Glu	Thr	Ser	Ile	Glu	Asp
145					150					155					160
Phe	Asp	Arg	Ile	Leu	Ser	Ile	Asn	Leu	Arg	Pro	Val	Phe	Ile	Thr	Ser
			165					170						175	
Arg	Phe	Ile	Ala	Ile	His	Arg	Gln	Ser	Gln	Thr	Thr	Ser	Asn	Pro	Tyr
		180					185						190		
Gly	Arg	Ile	Ile	Asn	Ile	Cys	Ser	Thr	Arg	Tyr	Leu	Met	Ser	Glu	Ser
	195						200					205			
Gly	Ser	Glu	Gly	Tyr	Ala	Ala	Ser	Lys	Gly	Gly	Ile	Tyr	Ser	Leu	Thr
	210					215					220				
His	Ala	Leu	Ala	Leu	Ser	Leu	Ala	Gln	Phe	His	Ile	Thr	Val	Asn	Ser
225					230					235					240
Ile	Ala	Pro	Gly	Trp	Ile	Gln	Thr	His	Asp	Tyr	Asp	Arg	Leu	Arg	Pro
			245						250					255	
Lys	Asp	His	Glu	Gln	His	Pro	Ser	Arg	Arg	Val	Gly	Lys	Pro	Glu	Asp

	260		265		270										
Ile	Ala	Arg	Met	Cys	Arg	Phe	Leu	Cys	Glu	Glu	Gly	Asn	Asp	Phe	Ile
	275						280					285			
Asn	Gly	Glu	Asn	Ile	Thr	Ile	Asp	Gly	Gly	Met	Thr	Lys	Lys	Met	Ile
	290					295					300				
Tyr	Thr	Glu													
305															

<210> 6055

<211> 540

<212> PRT

<213> B.fragilis

<400> 6055

Leu	Cys	Ala	Leu	Ser	Arg	Lys	Thr	Thr	Met	Leu	Lys	Arg	Ile	Pro	His
1			5					10					15		
Thr	Tyr	Thr	Ile	Ile	Ser	Ser	Val	Ile	Leu	Leu	Cys	Ala	Val	Leu	Ser
		20					25					30			
Trp	Ile	Ile	Pro	Ala	Gly	Glu	Tyr	Val	Arg	Glu	Thr	Ile	Asp	Val	Asn
	35					40					45				
Gly	Ile	Ser	Arg	Thr	Val	Ile	Val	Asp	His	Ser	Phe	His	Arg	Val	Glu
	50				55					60					
Gln	Thr	Pro	Gln	Thr	Trp	Gln	Val	Phe	Ser	Ser	Leu	Leu	Glu	Gly	Phe
65				70				75						80	
Glu	Arg	Gln	Ala	Gly	Ile	Ile	Ala	Phe	Leu	Leu	Ile	Met	Gly	Gly	Ala
			85				90					95			
Phe	Gln	Ile	Met	Asn	Ser	Ser	Arg	Ala	Ile	Asp	Thr	Gly	Ile	Phe	Ser
		100					105					110			
Phe	Leu	Asn	Phe	Thr	Lys	Gly	Leu	Glu	Lys	His	Arg	Leu	Ile	Lys	Ile
	115					120					125				
Leu	Gly	Val	Asn	Asn	Val	Val	Ile	Ser	Leu	Val	Ile	Ile	Leu	Phe	Ser
	130				135					140					
Leu	Phe	Gly	Ser	Val	Phe	Gly	Met	Ser	Glu	Glu	Thr	Leu	Ala	Phe	Val
145				150					155					160	
Ile	Ile	Ile	Val	Pro	Leu	Ala	Ile	Ser	Met	Gly	Tyr	Asp	Ser	Ile	Thr
			165					170					175		
Gly	Leu	Cys	Met	Val	Tyr	Val	Ala	Ala	His	Ile	Gly	Phe	Ser	Gly	Ala
		180					185					190			
Val	Leu	Asn	Pro	Phe	Thr	Ile	Gly	Ile	Ala	Gln	Gly	Leu	Ser	Asp	Leu
	195					200					205				
Pro	Leu	Phe	Ser	Gly	Phe	Glu	Tyr	Arg	Met	Phe	Cys	Trp	Leu	Val	Leu
	210				215					220					
Thr	Thr	Ala	Leu	Ile	Val	Cys	Val	Leu	Arg	Tyr	Ala	Ala	Val	Val	Lys
225				230						235				240	
Lys	His	Pro	Glu	Lys	Ser	Pro	Met	Tyr	His	Ala	Asp	Ala	Tyr	Trp	Arg
		245						250					255		
Lys	Arg	Glu	Lys	Glu	Ser	Cys	Gly	Glu	Ile	Ser	His	Val	Thr	Thr	Arg
		260					265					270			
Gln	Ala	Trp	Ile	Val	Tyr	Leu	Leu	Leu	Val	Ser	Leu	Gly	Leu	Phe	
	275					280					285				
Ser	Ile	Ile	Tyr	Pro	Ile	Ser	Thr	Phe	Ser	Val	Gly	Glu	Ala	Ser	Val
	290				295					300					
Thr	Cys	Tyr	Ala	Val	Pro	Thr	Leu	Ser	Ile	Leu	Phe	Ala	Val	Phe	Gly
305				310					315					320	
Trp	Leu	Gly	Leu	Arg	Lys	Ser	Asn	Gln	Phe	Phe	Ile	Leu	Thr	Leu	Leu
		325					330					335			
Ala	Phe	Thr	Ile	Leu	Phe	Leu	Ile	Ile	Gly	Val	Met	Gly	His	Gly	Trp
		340				345						350			
Tyr	Leu	Pro	Glu	Ile	Ser	Ala	Ile	Phe	Leu	Ala	Met	Gly	Ile	Leu	Ser

355	360	365
Gly Phe Ala Asn Ser Glu His Ala Asp Ala Ile Ile Lys Gln Phe Met		
370	375	380
Asp Gly Ala Lys Asp Met Leu Ser Ala Ala Ile Val Val Gly Leu Ala		
385	390	395
Gly Gly Ile Ile Gln Ile Leu Gln Asp Gly His Ile Ile Asp Pro Ile		
405	410	415
Leu His Ser Leu Ala Ser Leu Met Gly Glu Ala Gly Lys Ile Val Ser		
420	425	430
Leu Gly Val Met Tyr Leu Ile Gln Thr Leu Ile Asn Leu Ile Ile Pro		
435	440	445
Ser Gly Ser Ala Lys Ala Ala Leu Thr Met Pro Ile Met Ala Pro Phe		
450	455	460
Ser Asp Val Ile Gly Leu Ser Arg Gln Ala Thr Val Met Ala Tyr Gln		
465	470	475
Phe Gly Asp Gly Phe Thr Asn Met Ile Thr Pro Thr Ser Ala Val Leu		
485	490	495
Met Gly Ala Leu Gly Ile Ala Arg Ile Pro Tyr Glu Ile Trp Val Lys		
500	505	510
Trp Leu Trp Lys Ile Leu Leu Leu Phe Ile Ile Leu Gly Met Val Leu		
515	520	525
Leu Ile Pro Thr Val Leu Phe Pro Leu Asn Gly Phe		
530	535	540

<210> 6056

<211> 445

<212> PRT

<213> B.fragilis

<400> 6056

Asn Leu Asp Thr Met Lys Ile Lys Thr Leu Val Ala Val Leu Phe Leu	
1	15
Ser Ala Gly Ala Thr Thr Val Val Ala Gln Asp Asp Ala Asn Cys Asn	
20	30
Ser Asn Ser Ser Ile Ser His Glu Ala Val Lys Ala Gly Asn Phe Lys	
35	45
Asp Ala Tyr Thr Pro Trp Lys Ala Val Leu Glu Asn Cys Pro Thr Leu	
50	60
Arg Phe Tyr Thr Phe Thr Asp Gly Tyr Lys Ile Leu Lys Gly Leu Leu	
65	80
Gly Gln Ile Lys Asp Arg Asn Ser Ala Glu Tyr Lys Lys Tyr Phe Asp	
85	95
Glu Leu Met Asn Thr His Asp Leu Arg Met Lys Tyr Thr Gln Glu Phe	
100	110
Leu Gly Lys Gly Val Lys Val Ser Ser Glu Asp Glu Ala Leu Gly Ile	
115	125
Lys Ala Val Asp Tyr Ile Ala Phe Ala Pro Lys Val Asp Val Asn Gln	
130	140
Ala Tyr Asp Trp Leu Lys Lys Ser Val Asp Ala Ala Lys Ala Glu Ser	
145	160
Ala Ala Ala Thr Leu Phe Tyr Phe Leu Gln Met Ser His Asp Lys Leu	
165	175
Lys Glu Asp Pro Ala His Lys Glu Gln Phe Ile Gln Asp Tyr Leu Ala	
180	190
Ala Ser Glu Tyr Ala Asp Asp Ala Ile Ala Ala Ala Asp Lys Glu Ser	
195	205
Val Lys Lys Ala Phe Gly Gly Ile Lys Asp Asn Leu Val Ala Leu Phe	
210	220
Ile Asn Ser Gly Thr Ala Asp Cys Glu Ser Leu Gln Gly Ile Tyr Gly	

225		230		235		240									
Pro	Lys	Val	Glu	Thr	Asn	Gln	Thr	Asp	Leu	Asn	Tyr	Leu	Lys	Lys	Val
			245						250					255	
Ile	Ser	Ile	Met	Lys	Met	Met	Lys	Cys	Thr	Asp	Ser	Asp	Ala	Tyr	Gln
			260						265					270	
Gln	Ala	Ser	Phe	Tyr	Val	Tyr	Lys	Ile	Glu	Pro	Ser	Ala	Glu	Ala	Ala
			275						280					285	
Thr	Gly	Cys	Ala	Tyr	Gln	Ala	Tyr	Lys	Lys	Gly	Asp	Ile	Asp	Gly	Ser
			290						295					300	
Val	Lys	Phe	Phe	Asp	Glu	Ala	Ile	Asn	Leu	Glu	Thr	Asp	Asn	Ala	Lys
305					310					315					320
Lys	Ala	Glu	Lys	Ala	Tyr	Ala	Ala	Ala	Ser	Val	Leu	Thr	Thr	Ala	Lys
				325					330						335
Lys	Leu	Ser	Gln	Ala	Arg	Ser	Tyr	Ala	Gln	Lys	Ala	Ile	Ser	Phe	Asn
			340						345					350	
Glu	Asn	Tyr	Gly	Ala	Pro	Tyr	Ile	Leu	Ile	Ala	Asn	Leu	Tyr	Ala	Met
			355						360					365	
Ser	Pro	Asn	Trp	Ser	Asp	Glu	Ser	Ala	Leu	Asn	Lys	Cys	Thr	Tyr	Phe
370						375					380				
Ala	Val	Ile	Asp	Lys	Leu	Gln	Lys	Ala	Lys	Ser	Val	Asp	Pro	Ser	Val
385					390					395					400
Thr	Glu	Glu	Val	Asn	Lys	Met	Ile	Ser	Arg	Tyr	Ser	Ala	Tyr	Thr	Pro
				405					410					415	
Gln	Ala	Lys	Asp	Leu	Phe	Met	Leu	Gly	Tyr	Lys	Ala	Gly	Asp	Arg	Ile
			420					425					430		
Thr	Ile	Gly	Gly	Trp	Ile	Gly	Glu	Ser	Thr	Thr	Ile	Arg			
		435					440					445			

<210> 6057

<211> 166

<212> PRT

<213> B.fragilis

<400> 6057

Ile	Ile	Ser	Thr	Leu	Asp	Glu	Ser	Ile	Arg	Pro	Phe	Arg	Arg	Phe	Val
1				5					10					15	
Lys	Thr	Leu	Lys	Leu	Met	His	Met	Lys	Tyr	Leu	Phe	Tyr	Leu	Ser	
			20					25				30			
Met	Ala	Leu	Val	Ala	Val	Val	Leu	Phe	Ser	Cys	Lys	Ser	Gly	Lys	Lys
			35				40					45			
Ser	Val	Phe	Thr	Pro	Thr	Ser	Ser	Gly	Arg	Ala	Tyr	Glu	Val	Leu	Val
			50			55					60				
Val	Val	Glu	Lys	Pro	Val	Trp	Glu	Arg	Pro	Ala	Gly	Arg	Ala	Leu	Tyr
65					70				75					80	
Asn	Val	Leu	Asp	Thr	Asp	Val	Pro	Gly	Leu	Pro	Gln	Ser	Glu	Arg	Ser
				85				90						95	
Phe	Arg	Ile	Met	Ser	Thr	Ser	Pro	Lys	Asp	Phe	Asp	Ala	Ile	Leu	Lys
			100					105					110		
Leu	Val	Arg	Asn	Ile	Ile	Ile	Val	Asp	Ile	Gln	Asp	Ile	Tyr	Thr	Gln
			115				120					125			
Pro	Lys	Phe	Lys	Tyr	Ala	Lys	Asp	Val	Tyr	Ala	Ser	Pro	Gln	Met	Ile
			130			135					140				
Leu	Thr	Ile	Gln	Ala	Pro	Asp	Glu	Ala	Ser	Phe	Glu	Lys	Phe	Val	Glu
145					150					155					160
Glu	Asn	Lys	Gln	Pro	Ile										
				165											

<210> 6058

<211> 396

<212> PRT

<213> B.fragilis

<400> 6058

Lys	Pro	Arg	Thr	Val	Lys	Asn	Cys	Ser	Arg	Leu	Phe	Tyr	Ile	Gln	Pro
1				5					10					15	
Lys	Ser	Tyr	Phe	Cys	Ser	Phe	Arg	Lys	Val	Lys	Lys	Gln	Ala	Met	Thr
			20					25					30		
Lys	Tyr	Pro	Tyr	Ile	Leu	Phe	Val	Leu	Leu	Leu	Ala	Ser	Phe	Ser	Ser
		35					40					45			
Cys	Gln	Thr	Val	Glu	Gln	Leu	Ser	Ile	Asp	Tyr	Met	Leu	Pro	Ala	Glu
	50					55					60				
Ile	Ser	Phe	Pro	Asn	Glu	Leu	Lys	Arg	Val	Ala	Val	Val	Asn	Asn	Val
65					70					75					80
Ser	Asp	Thr	Pro	Asp	Asn	Thr	Leu	Pro	Pro	Lys	Asp	Asn	Thr	Ile	Lys
				85					90					95	
Asn	Lys	Asn	Glu	Leu	Ser	Arg	Ala	Val	Ala	Tyr	His	Glu	Gly	Gln	Pro
			100					105					110		
Ala	Leu	Thr	Thr	Glu	Ala	Leu	Ala	Lys	Ala	Ile	Ala	Glu	Gln	Asn	Tyr
		115					120					125			
Phe	Asn	Glu	Val	Val	Ile	Cys	Asp	Ser	Ala	Leu	Arg	Ala	Arg	Asp	Phe
	130					135					140				
Thr	Pro	Arg	Glu	Ser	Thr	Leu	Ser	Gln	Glu	Glu	Val	Gln	Thr	Leu	Ala
145					150					155					160
Gln	Phe	Leu	Asp	Val	Asp	Cys	Ile	Ile	Ser	Leu	Glu	Asn	Leu	Gln	Met
				165					170					175	
Lys	Ser	Thr	Arg	Val	Leu	Ser	Tyr	Ile	Pro	Glu	Trp	Asn	Thr	Tyr	Tyr
			180					185					190		
Gly	Thr	Leu	Asp	Thr	Lys	Val	Tyr	Pro	Thr	Leu	Lys	Ile	Tyr	Leu	Pro
		195					200					205			
Gly	Arg	Lys	Ser	Pro	Met	Val	Thr	Ile	Asn	Thr	His	Asp	Ser	Ile	Phe
	210					215					220				
Trp	Glu	Glu	Tyr	Gly	Asn	Thr	Glu	Gly	Phe	Val	Arg	Ser	Arg	Leu	Pro
225					230					235					240
Asp	Glu	Arg	Gln	Met	Ile	Arg	Glu	Ala	Ser	Glu	Phe	Ala	Gly	Ser	Val
				245					250					255	
Pro	Val	Asn	Arg	Ile	Leu	Pro	Tyr	Trp	Lys	Thr	Ala	Asn	Arg	Tyr	Tyr
		260						265					270		
Phe	Ile	Asn	Gly	Ser	Val	Ala	Met	Arg	Asp	Ala	Ala	Val	Tyr	Val	Lys
		275					280					285			
Glu	Asn	Glu	Trp	Glu	Lys	Ala	Ser	Lys	Leu	Trp	Glu	Gln	Ala	Phe	Lys
	290					295					300				
Ala	Ala	Lys	Asn	Asp	Lys	Lys	Lys	Met	Arg	Ala	Ala	Phe	Asn	Leu	Ala
305					310					315					320
Leu	Tyr	Tyr	Glu	Met	Lys	Asp	Ser	Val	Glu	Glu	Ala	His	Lys	Trp	Ala
				325					330					335	
Val	Thr	Ala	Gln	Glu	Leu	Ala	Arg	Lys	Ile	Asp	Lys	Ile	Asp	Thr	Leu
			340					345					350		
Lys	Arg	Asn	Asp	Ile	Asp	Leu	Ser	Glu	Ile	Pro	Asn	Tyr	Tyr	Leu	Thr
		355				360						365			
Ser	Leu	Tyr	Val	Asn	Glu	Leu	Lys	Glu	Arg	Ser	Asn	Gly	Leu	Gly	Lys
	370					375					380				
Leu	Lys	Gly	Gln	Met	Ser	Arg	Phe	Asn	Glu	Asp	Phe				
385					390					395					

<210> 6059

<211> 673

<212> PRT

<213> B.fragilis

<400> 6059

Leu Cys Arg Thr Lys Met Lys Ser Tyr Met Glu Lys Leu Lys Met Glu
 1 5 10 15
 Ser Val Ser Ile Ala Glu Asp Ser Leu Asn Lys Ile Ala Glu Leu Phe
 20 25 30
 Pro Asn Val Val Thr Glu Ser Met Gly Lys Asp Gly Gln Leu His Lys
 35 40 45
 Ala Ile Asp Phe Asp Lys Leu Lys Phe Leu Leu Thr Ala Asn Gln Ala
 50 55 60
 Glu Met Gly Val Val Tyr Asp Asp Asp Glu Arg Tyr Glu Leu Thr Trp
 65 70 75 80
 Val Gly Lys Lys Gln Ala Ile Arg Glu Val Ala His Pro Ile Arg Lys
 85 90 95
 Thr Leu Arg Pro Cys Pro Glu Glu Ser Arg Asn Trp Glu Gln Thr Gln
 100 105 110
 Asn Leu Tyr Ile Glu Gly Asp Asn Leu Asp Ala Met Lys Leu Leu Lys
 115 120 125
 Lys Ser Tyr Ala Gly Lys Val Asp Val Ile Tyr Ile Asp Pro Pro Tyr
 130 135 140
 Asn Thr Gly Lys Asp Phe Ile Phe Asn Asp Thr Phe Ala Leu Ser Gln
 145 150 155 160
 Glu Glu Ser Asp Glu Lys Gln Gly Arg Tyr Asn Glu Glu Gly Gln Arg
 165 170 175
 Leu Phe Gln Asn Thr Glu Ala Asn Gly Lys Phe His Ser Asp Trp Cys
 180 185 190
 Ser Met Met Tyr Ala Arg Leu Met Leu Ala Arg Thr Leu Leu Asn Asp
 195 200 205
 Asn Gly Ile Ile Phe Ile Ser Ile Asp Asp His Glu Leu Ala Asn Leu
 210 215 220
 Ile Lys Ile Gly Asn Glu Val Phe Asn Ala Ser Asn Phe Ile Asp Val
 225 230 235 240
 Phe Asn Trp Ala Lys Thr Glu Thr Pro Glu Asn Leu Ser Lys Lys Ser
 245 250 255
 Lys Gln Ile Ile Glu Tyr Ile Val Cys Tyr Gln Lys Lys Lys Asn Asp
 260 265 270
 Met Lys Phe Gln Gly Leu Lys Lys Glu Ser Val Ser Ser Asn Gly Leu
 275 280 285
 Leu Asn Gln Pro Asn Ser Val Gly Ile Leu Thr Phe Pro Ala Asn Lys
 290 295 300
 Val Val Thr Ser Ile Pro Asp Gly Val Ile Lys Ala Gly Met Tyr Gly
 305 310 315 320
 Thr Asp Ala Tyr Asp Val Glu Leu Leu Glu Asp Thr Thr Val Arg Gly
 325 330 335
 Gly Leu Phe Thr Ala Pro Val Lys Leu Lys Ala Lys Phe Lys Trp Ser
 340 345 350
 Gln Ala Asn Leu Asp Lys Glu Ile Gln Lys Gly Thr Thr Ile Lys Ile
 355 360 365
 Pro Thr Leu Lys Leu Ser Pro Ser Tyr Glu Lys Leu Glu Tyr Asp Pro
 370 375 380
 Glu Val Pro Pro Asn Leu Ile Asn Tyr Lys Val Gly Val Glu Thr Asn
 385 390 395 400
 Glu Gln Ala Gly Asn His Gln Leu Gln Phe Phe Asp Lys Lys Val Phe
 405 410 415
 Asn Phe Pro Lys Pro Val Ser Leu Ile Gln Tyr Leu Cys Glu Phe Ile
 420 425 430
 Asp Thr Lys Asn Lys Asp Cys Ile Val Met Asp Phe Phe Ser Gly Ser
 435 440 445
 Gly Thr Thr Ala Glu Ala Val Met Arg Met Asn Met Lys Pro Arg Lys

450 455 460
 Asn Lys Val Lys Tyr Ile Leu Val Gln Leu Pro Glu Asp Val Thr Glu
 465 470 475 480
 Thr Ile Lys Lys Ala Lys Thr Pro Ser Glu Lys Glu Ile Met Gln Asn
 485 490 495
 Ala Ile Asp Phe Leu Thr Glu Asn His Lys Ala Leu Asn Ile Cys Glu
 500 505 510
 Leu Ser Lys Glu Arg Ile Arg Arg Ala Gly Asp Thr Ile Glu Ala Glu
 515 520 525
 Cys Asn Gln Arg Lys Leu Lys Asp Leu Pro Asp Ile Gly Phe Arg Val
 530 535 540
 Phe Arg Ile Ala Asp Ser Asn Met Lys Asp Val Tyr Tyr Ser Ala Lys
 545 550 555 560
 Glu Tyr Ser Gln Ser Asp Leu Phe Tyr Phe Thr Asp Asn Ile Lys Glu
 565 570 575
 Asp Arg Thr Gly Leu Asp Leu Leu Tyr Gly Cys Leu Thr Asn Leu Gly
 580 585 590
 Leu Ser Leu Ser Leu Pro His Asp Glu Glu Asp Ile Asn Gly Tyr Thr
 595 600 605
 Val Tyr Ser Val Asp Lys Thr Glu Leu Met Ala Cys Phe Ala Glu Gln
 610 615 620
 Ile Pro Glu Lys Val Phe Arg Glu Ile Ala Gly Arg Gln Pro Arg Arg
 625 630 635 640
 Val Val Phe Arg Asp Ala Ser Phe Arg Asp Ser Ala Asp Arg Ile Asn
 645 650 655
 Ile Asp Glu Ile Phe Lys Thr Leu Ser Pro Gly Thr Thr Ile Glu Ile
 660 665 670
 Leu

<210> 6060
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 6060
 Val Asn Met Thr Ile Thr Val Phe Thr Pro Thr Phe Asn Arg Ala Thr
 1 5 10 15
 Leu Leu Pro Arg Leu Tyr Glu Ser Leu Val Asn Gln Thr Phe Leu Asp
 20 25 30
 Phe Glu Trp Leu Ile Val Asp Asp Gly Ser Thr Asp Asp Thr Phe Asn
 35 40 45
 Phe Ile Glu Ser Ile Lys Glu Asn Asp Lys Ile Asp Ile Gln Tyr Tyr
 50 55 60
 Tyr Gln Asn Asn Ala Gly Lys His Ala Ala Ile Asn Trp Gly Val Glu
 65 70 75 80
 Leu Ala Lys Gly Asp Leu Phe Phe Ile Val Asp Ser Asp Glu Val Met
 85 90 95
 Ile Glu Ser Gly Leu Gln Thr Ile Val Asp Val Tyr Lys Gln Val Ser
 100 105 110
 Asp Asn Asp Asn Phe Ala Gly Val Thr Gly Leu Lys Ser Phe Phe Ser
 115 120 125
 Gly Lys Thr Ile Gly Gly Glu Leu Asn Tyr Thr Tyr Leu Asp Cys Ser
 130 135 140
 Ala Ile Asp Tyr Asn Leu Lys Tyr Lys Tyr Gly Gly Glu Met Ala Val
 145 150 155 160
 Ala Tyr Arg Thr Lys Ile Leu Gln Lys Tyr Pro Phe Pro Ile Phe Glu
 165 170 175
 Gly Glu Lys Tyr Cys Gly Glu Gly Leu Ile Trp Tyr Lys Ile Ala Leu

290 295 300
 Ile Gly Met Ala Thr Val Tyr Gly Leu Arg Lys Lys Lys Ser Leu Trp
 305 310 315 320
 Gly Leu Asp Ile Ala Val Phe Ala Ala Ala Gly Ile Ala Gly Cys Ile
 325 330 335
 Ile Ala Phe Leu Ala Leu Phe Ser Glu His Pro Thr Val Gly Ser Asn
 340 345 350
 Tyr Leu Leu Phe Val Phe His Pro Gly His Leu Leu Cys Leu Pro Phe
 355 360 365
 Phe Ile Asn Asp Glu Arg Lys Arg Arg Lys Ser Arg Tyr His Leu Leu
 370 375 380
 Asn Cys Thr Val Leu Thr Leu Phe Ile Val Leu Phe Pro Val Ile Pro
 385 390 395 400
 Gln Asn Phe Asp Leu Ala Val Leu Pro Leu Ala Leu Cys Leu Leu Ile
 405 410 415
 Arg Ser Ala Ser Asn Leu Ile Leu Thr Tyr Lys Lys Ala Lys
 420 425 430

<210> 6062
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6062
 Ser Val Tyr Phe Lys Lys Gln Asn Lys Leu Pro Gly Gln Ile Ile Gly
 1 5 10 15
 Asp Lys Met Lys Leu Ile Gln Tyr Ile Ser Thr Thr Tyr Val Arg Glu
 20 25 30
 Glu Leu Tyr Asn Pro Asp Asn Arg Asp Leu Ile Asn Pro Lys Ser Pro
 35 40 45
 Pro Glu Phe Ile Ser Ser Gly Gly Pro Phe Cys His Lys Val Glu Leu
 50 55 60
 Glu Gly Phe Glu Pro Ser Ser Lys Arg Gly Asn His Lys Leu Ser Thr
 65 70 75 80
 Cys Leu Ser Leu Pro Lys Phe Phe Val Gln Glu Gln Asn Gln Ser His
 85 90 95
 Gln Phe Leu Pro Tyr Pro Leu Lys Phe His Gln Lys Arg Lys Ala Thr
 100 105 110
 Ser Asp Tyr Pro Arg Cys Asn Cys Thr Thr Glu Pro Glu Cys Phe Gly
 115 120 125
 Ala Thr Ala Ser Glu
 130

<210> 6063
 <211> 264
 <212> PRT
 <213> B.fragilis

<400> 6063
 Ile Ile Leu Phe Ser Tyr Phe Cys Ser Arg Phe Phe Lys Arg Val Met
 1 5 10 15
 Ala Gln Phe Thr Glu Glu Glu Lys Thr Ile Arg Arg Ile Glu Lys Arg
 20 25 30
 Phe Asn Lys Gly Met Val Gln Tyr Gly Leu Ile Glu Glu Gly Asp Lys
 35 40 45
 Val Leu Val Gly Leu Ser Gly Gly Lys Asp Ser Leu Ala Leu Val Glu
 50 55 60
 Leu Leu Gly Lys Arg Ser His Ile Phe Lys Pro Arg Phe Ser Val Val
 65 70 75 80

Ala Val His Val Val Met Lys Asn Ile Pro Tyr Gln Ser Asp Trp Asp
85 90 95
Tyr Leu Arg Glu His Ala Glu Lys Asn Gly Val Pro Leu Val Val Tyr
100 105 110
Glu Thr Ser Phe Asp Pro Ser Thr Asp Thr Arg Lys Ser Pro Cys Phe
115 120 125
Leu Cys Ser Trp Asn Arg Arg Lys Ala Leu Phe Thr Val Ala Lys Glu
130 135 140
Gln Gly Cys Asn Lys Ile Ala Leu Gly His His Met Asp Asp Ile Leu
145 150 155 160
Glu Thr Leu Leu Met Asn Ile Thr Tyr Gln Gly Ala Phe Ser Thr Met
165 170 175
Pro Pro Arg Leu Val Met Asn Lys Phe Asp Met Thr Ile Ile Arg Pro
180 185 190
Met Cys Leu Val His Glu Ala Asp Leu Leu Glu Leu Ala Gln Ile Arg
195 200 205
Gly Tyr Arg Lys Gln Val Lys Asn Cys Pro Tyr Glu Ser Gln Ser Ser
210 215 220
Arg Ser Asp Met Lys Gly Ile Leu Arg Gln Leu Glu Lys Met Asn Pro
225 230 235 240
Glu Ala Arg Tyr Ser Leu Trp Gly Ser Met Thr Asn Val Gln Glu Glu
245 250 255
Leu Leu Pro Lys Glu Val Glu Phe
260

<210> 6064

<211> 62

<212> PRT

<213> B.fragilis

<400> 6064

Cys Ala Tyr Phe Phe Ala Gln Thr Ala Asp Arg Tyr Gln Trp Ile Thr
1 5 10 15
Pro Ala Gln Lys Arg Tyr Ile His Pro Glu Glu Gly Ser Lys Asn Glu
20 25 30
Phe Tyr Tyr Leu Gln Thr Glu His Ser Asn Pro Tyr Asp Arg Val Ser
35 40 45
Asn Cys Lys Leu Tyr Pro Ala Phe Gln Tyr Ser Glu Trp Gln
50 55 60

<210> 6065

<211> 388

<212> PRT

<213> B.fragilis

<400> 6065

Leu Val Met Ala Glu Ser Asn Phe Val Asp Tyr Val Lys Ile Tyr Cys
1 5 10 15
Arg Ser Gly Lys Gly Gly Arg Gly Ser Thr His Met Arg Arg Glu Lys
20 25 30
Tyr Thr Pro Asn Gly Gly Pro Asp Gly Gly Asp Gly Arg Gly Gly
35 40 45
His Val Ile Leu Arg Gly Asn Arg Asn Tyr Trp Thr Leu Leu His Leu
50 55 60
Arg Tyr Asp Arg His Ala Met Ala Gly His Gly Glu Ser Gly Ser Lys
65 70 75 80
Asn Arg Ser Phe Gly Lys Asp Gly Ala Asp Lys Ile Ile Glu Val Pro
85 90 95
Cys Gly Thr Val Val Tyr Asn Ala Glu Thr Gly Glu Tyr Val Cys Asp

```

      100      105      110
Val Thr Glu His Gly Gln Glu Val Ile Leu Leu Lys Gly Gly Arg Gly
      115      120      125
Gly Leu Gly Asn Trp His Phe Lys Thr Ala Thr Arg Gln Ala Pro Arg
      130      135      140
Phe Ala Gln Pro Gly Glu Pro Met Gln Glu Met Thr Val Ile Leu Glu
145      150      155      160
Leu Lys Leu Leu Ala Asp Val Gly Leu Val Gly Phe Pro Asn Ala Gly
      165      170      175
Lys Ser Thr Leu Leu Ser Ala Ile Ser Ala Ala Lys Pro Lys Ile Ala
      180      185      190
Asp Tyr Pro Phe Thr Thr Leu Glu Pro Asn Leu Gly Ile Val Ser Tyr
      195      200      205
Arg Asp Gly Gln Ser Phe Val Met Ala Asp Ile Pro Gly Ile Ile Glu
      210      215      220
Gly Ala Ser Glu Gly Lys Gly Leu Gly Leu Arg Phe Leu Arg His Ile
225      230      235      240
Glu Arg Asn Ser Leu Leu Phe Met Ile Pro Ala Asp Ser Asp Asp
      245      250      255
Ile Arg Lys Asp Tyr Glu Val Leu Leu Asn Glu Leu Lys Thr Phe Asn
      260      265      270
Pro Glu Met Leu Asp Lys Gln Arg Val Leu Ala Ile Thr Lys Ser Asp
      275      280      285
Met Leu Asp Gln Glu Leu Met Asp Glu Ile Glu Pro Thr Leu Pro Glu
      290      295      300
Gly Ile Pro His Val Phe Ile Ser Ser Val Ser Gly Leu Gly Ile Ser
305      310      315      320
Val Leu Lys Asp Ile Leu Trp Thr Glu Leu Asn Lys Glu Ser Asn Lys
      325      330      335
Ile Glu Ala Ile Val His Arg Pro Lys Asp Val Ser Arg Leu Gln Gln
      340      345      350
Glu Leu Lys Asp Met Gly Glu Asp Glu Glu Leu Asp Tyr Glu Tyr Glu
      355      360      365
Asp Asp Gly Asp Glu Asp Asp Leu Asp Tyr Glu Tyr Glu Glu Glu Asp
      370      375      380
Trp Glu Asp Lys
385

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<210> 6066

<211> 119

<212> PRT

<213> B.fragilis

<400> 6066

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Gln Tyr Met Ala Asp Val Lys Glu Lys Ile Asn Leu Leu Asp Val Ile
1      5      10      15
Pro Phe Arg Ser Glu Asn Ile Thr Ala Glu Lys Gly Ser Asp Gly Thr
      20      25      30
Val Thr Ile Ala Phe Pro Arg Phe Lys Tyr Glu Trp Met Arg Arg Phe
      35      40      45
Leu Leu Pro Lys Gly Met Ser Ala Asp Ile His Val Arg Leu Glu Asp
      50      55      60
His Gly Thr Ala Val Trp Glu Leu Ile Asp Gly Lys Arg Thr Val Arg
      65      70      75      80
Arg Ile Ile Glu Glu Leu Ala Glu His Phe Asn Tyr Glu Glu Asn Tyr
      85      90      95
Glu Ser Arg Ile Thr Ala Tyr Ile Thr Gln Leu Gln Lys Asp Gly Phe
      100      105      110
Val Lys Leu Val Ile Glu Asn

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115

<210> 6067

<211> 431

<212> PRT

<213> B.fragilis

<400> 6067

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1      5      10      15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
      20      25      30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
      35      40      45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
      50      55      60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65      70      75      80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
      85      90      95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
      100     105     110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
      115     120     125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
      130     135     140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145     150     155     160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
      165     170     175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
      180     185     190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
      195     200     205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
      210     215     220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225     230     235     240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
      245     250     255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
      260     265     270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
      275     280     285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
      290     295     300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
305     310     315     320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
      325     330     335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
      340     345     350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
      355     360     365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
      370     375     380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
385     390     395     400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr

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				405					410					415
Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu	Phe	Gly
			420					425					430	

<210> 6068
 <211> 481
 <212> PRT
 <213> B.fragilis

<400> 6068

Gln	Ile	His	Tyr	Gln	Tyr	Leu	Leu	Ile	Ile	Asn	Ile	His	Ile	Phe	Ser
1				5					10					15	
Asn	Arg	Ser	Val	Thr	Leu	Pro	Ser	Tyr	Phe	Cys	Thr	Gly	Lys	Gln	Gln
			20					25					30		
Ala	Asp	Val	Met	Asn	Asn	Val	Gln	Gln	Val	Lys	Thr	Tyr	Ser	Gln	Arg
		35					40					45			
Lys	Ile	Ser	Asp	Phe	Leu	Phe	Ile	Leu	Trp	Ala	Gly	Gly	Ala	Ala	Leu
	50					55					60				
Leu	Ser	Tyr	Ser	Leu	Val	Tyr	Ala	Leu	Arg	Lys	Pro	Tyr	Thr	Ala	Ala
65					70					75					80
Gly	Phe	Asp	Gly	Leu	Glu	Ala	Phe	Gly	Met	Asp	Tyr	Lys	Val	Val	Val
				85					90					95	
Thr	Ile	Ala	Gln	Ile	Leu	Gly	Tyr	Val	Leu	Ser	Lys	Phe	Ile	Gly	Ile
			100					105					110		
Lys	Leu	Ile	Ser	Glu	Leu	Lys	Arg	Glu	Asn	Arg	Met	Lys	Phe	Ile	Leu
	115						120					125			
Ile	Ser	Ile	Ile	Leu	Ala	Glu	Ala	Ser	Leu	Ile	Leu	Phe	Gly	Leu	Leu
	130				135						140				
Pro	Ala	Pro	Tyr	Asn	Ile	Gly	Ala	Met	Phe	Leu	Asn	Gly	Leu	Ser	Leu
145				150						155					160
Gly	Cys	Met	Trp	Gly	Ile	Ile	Phe	Ser	Phe	Ile	Glu	Gly	Arg	Arg	Met
				165					170					175	
Thr	Asp	Ile	Leu	Ala	Ser	Leu	Leu	Gly	Val	Ser	Met	Val	Ile	Ser	Ser
			180					185					190		
Gly	Thr	Ala	Lys	Ser	Ala	Gly	Leu	Tyr	Val	Met	Asp	Thr	Leu	Asn	Ile
	195						200					205			
Ser	Glu	Phe	Trp	Met	Pro	Ala	Leu	Ile	Gly	Gly	Val	Ala	Leu	Pro	Leu
	210					215					220				
Leu	Ala	Leu	Leu	Gly	Tyr	Ala	Leu	Asn	Arg	Leu	Pro	Gln	Pro	Thr	Ala
225					230					235					240
Glu	Asp	Ile	Ala	Met	Lys	Ser	Lys	Arg	Glu	Thr	Leu	Asn	Gly	Lys	Gln
				245					250					255	
Arg	Trp	Glu	Leu	Phe	Lys	Asn	Phe	Met	Pro	Phe	Leu	Thr	Leu	Leu	Phe
			260					265					270		
Ile	Ala	Asn	Val	Val	Leu	Thr	Ile	Leu	Arg	Asp	Ile	Lys	Glu	Asp	Phe
		275					280					285			
Leu	Val	Lys	Ile	Ile	Asp	Val	Ser	Gln	Tyr	Ser	Ser	Trp	Met	Phe	Ala
	290					295					300				
Gln	Val	Asp	Ser	Val	Val	Thr	Leu	Ile	Ile	Leu	Ile	Ile	Phe	Gly	Leu
305					310					315					320
Met	Val	Phe	Val	Arg	Ser	Asn	Leu	Lys	Ala	Leu	Ser	Ile	Leu	Leu	Gly
				325					330					335	
Leu	Ile	Ile	Ala	Ser	Met	Val	Val	Met	Ala	Val	Val	Ser	Phe	Gly	Tyr
			340					345					350		
Glu	Gln	Leu	Gln	Leu	Asn	Ala	Ile	Val	Trp	Leu	Phe	Ile	Gln	Ser	Leu
	355					360						365			
Cys	Leu	Tyr	Leu	Ala	Phe	Leu	Thr	Phe	Gln	Thr	Ile	Phe	Phe	Asp	Arg
	370					375					380				
Phe	Ile	Ala	Cys	Phe	Lys	Ile	Arg	Gly	Asn	Val	Gly	Phe	Phe	Ile	Ala

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385          390          395          400
Met Asn Asp Phe Leu Gly Tyr Thr Gly Thr Val Ile Val Leu Ala Val
          405          410          415
Lys Glu Phe Phe Ser Pro Asp Ile Asn Trp Thr Ala Phe Tyr Asn Leu
          420          425          430
Met Ala Gly Tyr Val Gly Ile Ile Cys Phe Val Ala Phe Val Cys Ser
          435          440          445
Phe Ile Tyr Leu His Gln Arg Tyr Arg Arg Glu Asn Tyr Gly Lys Thr
          450          455          460
Gly Val Phe Arg Lys Lys Glu Glu Glu Lys Glu Val Pro Asp Phe Val
465          470          475          480
Tyr

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<210> 6069
<211> 202
<212> PRT
<213> B.fragilis

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<400> 6069
Phe Ile Asn Tyr His Phe Asn Asp Met Thr Gly Leu Glu Ile Trp Leu
1          5          10          15
Leu Ala Ile Gly Leu Ala Met Asp Cys Leu Ala Val Ser Ile Ala Ser
          20          25          30
Gly Ile Ile Leu Arg Arg Ile Gln Trp Arg Pro Met Leu Ile Met Ala
          35          40          45
Phe Phe Phe Gly Leu Phe Gln Ala Ile Met Pro Leu Leu Gly Trp Leu
          50          55          60
Gly Ala Ser Thr Phe Ser His Leu Ile Glu Ser Val Asp His Trp Ile
65          70          75          80
Ala Phe Ala Ile Leu Ala Phe Leu Gly Gly Arg Met Ile Lys Glu Ser
          85          90          95
Phe Lys Glu Glu Asp Cys Cys Gln Arg Phe Asn Pro Ala Ser Leu Lys
          100          105          110
Val Val Ile Thr Met Ala Val Ala Thr Ser Ile Asp Ala Leu Ala Val
          115          120          125
Gly Val Ser Phe Ala Phe Leu Gly Ile Lys Ser Cys Ser Ser Ile Leu
          130          135          140
Tyr Pro Ala Gly Ile Ile Gly Phe Val Ser Phe Phe Met Ser Leu Ile
145          150          155          160
Gly Leu Ile Phe Gly Ile Arg Phe Gly Cys Gly Ile Ala Arg Lys Leu
          165          170          175
Arg Ala Glu Leu Trp Gly Gly Ile Ile Leu Ile Leu Ile Gly Thr Lys
          180          185          190
Ile Leu Ile Glu His Leu Phe Phe Asn Asn
          195          200

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<210> 6070
<211> 357
<212> PRT
<213> B.fragilis

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<400> 6070
Asn Ile Ser Tyr Trp Asn Phe Met Lys Leu Leu Val Thr Gly Ala Ala
1          5          10          15
Gly Phe Ile Gly Ser His Val Cys Lys Arg Leu Leu Gln Arg Gly Asp
          20          25          30
Glu Val Val Gly Leu Asp Asn Ile Asn Ser Tyr Tyr Asp Ile Asn Leu
          35          40          45

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Lys Tyr Gly Arg Leu Ser Ser Leu Gly Val Ser Gln Ser Glu Leu Ser
 50          55          60
Trp Tyr Lys Phe Thr Arg Ser Asn Val Tyr Pro Arg Phe Ser Phe Val
65          70          75          80
Arg Met Asn Leu Glu Asp Arg Gln Ala Met Gln Met Leu Phe Ala Asn
      85          90          95
Gly Asn Phe Asp Val Val Ile Asn Leu Ala Ala Gln Ala Gly Val Arg
      100          105          110
Tyr Ser Ile Glu Asn Pro Tyr Ala Tyr Val Glu Ser Asn Ile Asp Gly
      115          120          125
Phe Leu Asn Val Leu Glu Gly Cys Arg His Ser Gln Val Lys His Leu
      130          135          140
Val Tyr Ala Ser Ser Ser Ser Val Tyr Gly Leu Asn Gly Gln Val Pro
145          150          155          160
Phe Ser Glu Lys Asp Gly Ile Ala His Pro Val Ser Leu Tyr Ala Ala
      165          170          175
Thr Lys Lys Ser Asn Glu Leu Met Ala His Thr Tyr Ser His Leu Tyr
      180          185          190
Asn Ile Pro Ser Thr Gly Leu Arg Phe Phe Thr Val Tyr Gly Pro Trp
      195          200          205
Gly Arg Pro Asp Met Ser Pro Phe Leu Phe Ala Asp Ala Ile Leu His
      210          215          220
Gly Arg Pro Ile Lys Val Phe Asn Asn Gly Asn Met Leu Arg Asp Phe
225          230          235          240
Thr Tyr Ile Asp Asp Ile Val Glu Gly Val Leu Arg Val Ala Asp Ser
      245          250          255
Ile Pro Glu Gly Asn Gln Cys Trp Asp Ala Glu Val Ala Asp Pro Ser
      260          265          270
Met Ser Cys Ala Pro Tyr Lys Ile Tyr Asn Ile Gly Asn Ser Arg Pro
      275          280          285
Val Lys Leu Met Asp Phe Ile Arg Ala Ile Glu Met Ser Ile Gly Arg
      290          295          300
Glu Ala Asp Lys Ile Tyr Leu Pro Met Gln Pro Gly Asp Val Tyr Gln
305          310          315          320
Thr Tyr Ala Asp Thr Ser Ser Leu Ser Arg Glu Ile Gly Phe Gln Pro
      325          330          335
Asn Thr Ser Leu Glu Ala Gly Val Lys Glu Thr Ile Ser Trp Tyr Lys
      340          345          350
Glu Phe Tyr Asn Leu
      355

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<210> 6071

<211> 355

<212> PRT

<213> B.fragilis

<400> 6071

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Lys Lys Ile Leu Asn Tyr Lys Gly Phe Val Ser Gly Gly Ser Ser Glu
1          5          10          15
Thr Met Ser Trp Leu Phe Ile Arg Lys Leu Ile Cys Leu His Lys Gly
      20          25          30
Lys Ile Lys Phe Ala Tyr Lys Glu Gln Lys Leu Val Leu Ile Leu
      35          40          45
Ile Phe Pro Ile Val Ile Arg Gln Ser Glu Arg Val Ser Glu Phe Ser
      50          55          60
Gly Ile Leu Ser Val Pro Glu Leu Ser Thr Gly Asn Gly Glu Leu Leu
65          70          75          80
Ser Val Thr Gly Met Leu Pro Thr Val Lys Thr Ser Glu Gln Lys Arg
      85          90          95

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Pro Asp Lys Lys Lys Glu Lys His Ser Leu Val Leu Val Glu Arg Asn
      100      105      110
Lys Asp Leu Cys Asn Tyr Leu Val Gln Ile Leu Met Lys Glu Tyr Lys
      115      120      125
Ile Val Ser Val Cys Asp Ala Glu Ala Ala Phe Glu Thr Val Cys Glu
      130      135      140
Gln Cys Pro Asp Ala Val Leu Ala Ser Ser Val Leu Thr Arg Ile Ser
      145      150      155      160
Gly Glu Glu Leu Ala Val Arg Ile Lys Ser Asp Asp Arg Val Ala His
      165      170      175
Ile Pro Val Ile Leu Leu Val Lys Pro Gly Glu Asp Asp Arg Tyr Ile
      180      185      190
Gln Arg Asn Ala Asp Leu Tyr Val Trp Met Pro Phe Ala Ile Ser Ser
      195      200      205
Leu Lys Thr Glu Ile Ala Ala Leu Ile Ala Asn Arg Glu Met Ile Arg
      210      215      220
Lys Arg Tyr Ile Arg Leu Ala Leu Gly Gly Glu Ala Ser Asp Pro Ile
      225      230      235      240
Asp Lys Glu Val Glu Ser Ser Glu Gly Asp Gln Glu Phe Ile Arg Gln
      245      250      255
Val Arg Ser Leu Ile Glu Glu Arg Met Thr Asp Ser Gly Phe Lys Ile
      260      265      270
Gly Glu Leu Ser Asp Cys Met Asn Met Ser Arg Ser Ser Phe Tyr Asn
      275      280      285
Lys Ile Lys Glu Ile Thr Gly His Ala Pro Ala Asp Tyr Val Arg Asn
      290      295      300
Val Arg Leu Asn Arg Ala Leu Val Leu Leu Met Ser Arg Lys Tyr Thr
      305      310      315      320
Val Ala Glu Val Ala Asp Met Thr Gly Phe Ser Asp Pro Lys Tyr Phe
      325      330      335
Gly Ile Val Phe Lys Lys Tyr Tyr Gly Gly Ser Pro Thr Lys Tyr Ile
      340      345      350
Asn Asn Leu
      355

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<210> 6072

<211> 163

<212> PRT

<213> B.fragilis

<400> 6072

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Ile Val Ala Tyr Gln Leu Thr Ala Ile Pro Asp Ala Leu Ser Gln Phe
1      5      10      15
Leu Pro Ala Phe Pro Val Ile Phe Ala His Thr Ile Leu Asn Gly Ile
      20      25      30
Asn Arg Ile Phe Val Asp Lys Phe Phe Gln Ile Val Asn Leu Phe Val
      35      40      45
Ser Cys Thr Phe Phe Ala Phe Phe Thr Phe Lys Phe Gly Val Ile Val
      50      55      60
Asn Thr Val Met Ile Glu Phe Gly Arg Gly Ala Val His Ala Asn His
      65      70      75      80
Tyr Ile Phe Ala Arg Phe Val Ala Cys Ser Phe Asp Ser Gly Lys Asn
      85      90      95
Arg Val Lys Cys Ile Phe Cys Ser Phe Gln Val Gly Ser Lys Thr Ala
      100      105      110
Phe Ile Thr Asn Ser Cys Thr Gln Thr Thr Val Phe Gln Tyr Phe Phe
      115      120      125
Gln Ser Met Glu Tyr Phe Gly Thr His Ala Gln Pro Phe Phe Lys Arg
      130      135      140

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Thr Cys Thr Tyr Arg Thr Asp His Lys Leu Leu Glu Gly Tyr Arg Ser
 145 150 155 160
 Ile Thr Val

<210> 6073
 <211> 319
 <212> PRT
 <213> B.fragilis

<400> 6073
 Leu Met Tyr Tyr Leu Ile Ile Leu Val Leu Leu Phe Leu Ala Glu Leu
 1 5 10 15
 Phe Tyr Phe Arg Ile Ala Asp Lys Cys Asn Ile Ile Asp Lys Pro Asn
 20 25 30
 Glu Arg Ser Ser His Thr Arg Ile Thr Leu Arg Gly Gly Gly Ile Ile
 35 40 45
 Phe Tyr Phe Gly Glu Leu Ala Tyr Phe Leu Thr Asn His Phe Glu Tyr
 50 55 60
 Pro Trp Phe Met Leu Ala Leu Ser Leu Ile Thr Phe Ile Ser Phe Ile
 65 70 75 80
 Asp Asp Ile Arg Ser Thr Ser Gln Gly Leu Arg Leu Val Phe His Phe
 85 90 95
 Thr Ala Met Ala Leu Met Phe Tyr Gln Trp Gly Leu Phe Ser Leu Pro
 100 105 110
 Trp Trp Thr Ile Leu Val Ala Leu Ile Ile Cys Thr Gly Ile Ile Asn
 115 120 125
 Ala Tyr Asn Phe Met Asp Gly Ile Asn Gly Ile Thr Gly Gly Tyr Ser
 130 135 140
 Leu Ile Ile Leu Ile Ala Leu Ala Tyr Ile Asn Arg Ile Tyr Val Pro
 145 150 155 160
 Phe Val Glu Pro Asp Leu Ile Tyr Thr Met Leu Cys Ala Val Leu Val
 165 170 175
 Phe Asn Phe Phe Asn Phe Arg Lys Gln Ala Arg Cys Phe Ala Gly Asp
 180 185 190
 Val Gly Ser Val Ser Ile Ala Phe Val Ile Leu Phe Leu Ile Gly Ser
 195 200 205
 Leu Ile Ile Lys Thr Glu Asn Phe Gly Trp Leu Ile Leu Leu Ala Val
 210 215 220
 Tyr Gly Val Asp Ser Val Leu Thr Ile Val His Arg Leu Met Leu His
 225 230 235 240
 Glu Asn Ile Gly Leu Pro His Arg Lys His Leu Tyr Gln Ile Met Ala
 245 250 255
 Asn Glu Leu Arg Ile Pro His Val Val Val Ser Leu Val Tyr Met Ile
 260 265 270
 Ala Gln Ile Ile Ile Ile Ile Gly Tyr Leu Tyr Cys Gln Asn Tyr Gly
 275 280 285
 Tyr Trp Tyr Leu Leu Gly Cys Ile Leu Leu Leu Ser Gly Ile Tyr Ile
 290 295 300
 Val Phe Met His Lys Tyr Phe His Leu His Leu Leu Ser Lys Arg
 305 310 315

<210> 6074
 <211> 256
 <212> PRT
 <213> B.fragilis

<400> 6074
 Ile Leu Ser Leu Ile Phe Ala Pro Ser Asn Arg Glu Lys Val Asn Leu

1		5		10		15									
Ile	Ile	Asp	Ile	Gly	Asn	Thr	Val	Ala	Lys	Val	Ala	Leu	Phe	Asp	Arg
		20						25				30			
Thr	Ser	Met	Val	Glu	Val	Val	Tyr	Asp	Ser	Asn	Gln	Ser	Leu	Asp	Ser
		35					40					45			
Leu	Glu	Ala	Val	Cys	Asn	Lys	Tyr	Asp	Val	Arg	Lys	Ala	Ile	Val	Ala
	50					55					60				
Thr	Val	Ile	Asp	Leu	Asn	Glu	Cys	Val	Leu	Ala	Gln	Leu	Asn	Lys	Leu
65					70					75					80
Pro	Val	Pro	Val	Leu	Trp	Leu	Asp	Ser	His	Thr	Pro	Leu	Pro	Val	Ile
				85					90					95	
Asn	Leu	Tyr	Glu	Thr	Pro	Glu	Thr	Leu	Gly	Tyr	Asp	Arg	Met	Ala	Ala
			100					105					110		
Val	Val	Ala	Ala	His	Asp	Gln	Phe	Pro	Gly	Lys	Asp	Ile	Leu	Val	Ile
		115					120					125			
Asp	Ala	Gly	Thr	Cys	Ile	Thr	Tyr	Glu	Phe	Val	Asp	Ser	Leu	Gly	Gln
	130					135					140				
Tyr	His	Gly	Gly	Asn	Ile	Ser	Pro	Gly	Leu	Trp	Met	Arg	Leu	Lys	Ala
145					150					155					160
Leu	His	Gln	Phe	Thr	Gly	Arg	Leu	Pro	Leu	Val	His	Ala	Glu	Gly	Arg
			165						170					175	
Met	Pro	Asp	Met	Gly	Lys	Asp	Thr	Glu	Thr	Ala	Ile	Arg	Ala	Gly	Val
			180					185					190		
Lys	Lys	Gly	Ile	Glu	Tyr	Glu	Ile	Thr	Gly	Tyr	Ile	Thr	Ala	Met	Lys
		195					200					205			
His	Lys	Tyr	Pro	Glu	Leu	Leu	Val	Phe	Leu	Thr	Gly	Gly	Asp	Asp	Phe
	210						215				220				
Ser	Phe	Asp	Thr	Lys	Leu	Lys	Ser	Val	Ile	Phe	Ala	Asp	Arg	Phe	Leu
225					230					235					240
Val	Leu	Lys	Gly	Leu	Asn	Arg	Ile	Leu	Asn	Tyr	Asn	Asn	Gly	Arg	Ile
				245					250					255	

<210> 6075

<211> 223

<212> PRT

<213> B.fragilis

<400> 6075

Phe	Ile	Met	Tyr	Thr	Ile	Ile	Val	Ser	Lys	Glu	Leu	Lys	Glu	Ala	Cys
1				5				10					15		
Pro	Val	Phe	Ala	Gly	Ala	Ala	Ile	Tyr	Ala	Glu	Val	Lys	Asn	Thr	Ser
		20						25				30			
Tyr	Cys	Glu	Gly	Leu	Trp	Glu	Glu	Ile	Gln	Ser	Phe	Thr	Glu	Met	Leu
	35					40						45			
Thr	Ala	Thr	Thr	Arg	Leu	Glu	Asp	Ile	Lys	Lys	Gln	Pro	Val	Ile	Ala
	50					55					60				
Ala	Thr	Arg	Glu	Ala	Tyr	Lys	Arg	Cys	Gly	Lys	Asp	Pro	Gly	Arg	Tyr
65					70					75					80
Arg	Pro	Ser	Ala	Glu	Ala	Leu	Arg	Arg	Arg	Leu	Met	Arg	Gly	Ile	Ala
			85					90					95		
Leu	Tyr	Gln	Ile	Asp	Thr	Leu	Val	Asp	Leu	Ile	Asn	Leu	Val	Ser	Leu
		100						105					110		
Arg	Thr	Gly	His	Ser	Ile	Gly	Gly	Phe	Asp	Ala	Asp	Lys	Ile	Ala	Gly
		115				120						125			
Thr	Gly	Leu	Glu	Leu	Gly	Ile	Gly	Lys	Ile	Asn	Glu	Pro	Phe	Glu	Gly
	130					135					140				
Ile	Gly	Arg	Gly	Val	Leu	Asn	Ile	Glu	Gly	Leu	Pro	Val	Tyr	Arg	Asp
145					150					155					160
Ala	Val	Gly	Gly	Ile	Gly	Thr	Pro	Thr	Ser	Asp	Asn	Glu	Arg	Thr	Lys

<210> 6077
 <211> 342
 <212> PRT
 <213> B.fragilis

<400> 6077

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Tyr Arg Asp Leu Tyr Ser Ser Trp Ile Glu Ala Leu Ala Ile Tyr Val
1          5          10          15
Phe Tyr Asp Lys Pro Ile Arg Cys Gly Lys Val Thr His Cys Leu Ser
          20          25          30
Asn Gly Ile Leu Phe Tyr Leu Gln Tyr Ile Ser Val Tyr Leu His Ser
          35          40          45
Glu Ser Lys Trp Ile Phe Met Ala Ile Leu Glu Arg Lys Ile Ile His
          50          55          60
Glu Ile Asp Thr Ser Cys Ser His Ile Ile Tyr Pro Gln Phe Val Leu
65          70          75          80
Pro Arg His Lys His Ala Glu Tyr Glu Ile Met Leu Phe Thr Gln Gly
          85          90          95
Ser Gly Lys Gln Phe Val Gly Glu Gly Val Ala Asp Phe Gln Glu Gly
          100          105          110
Asp Ile Ala Leu Ile Gly Ser Asn Val Pro His Leu His Leu Cys Asn
          115          120          125
Ser Lys Leu Asn Pro Val Ala Asn Thr Val Cys Ser Ala Gly Glu Ala
          130          135          140
Leu Gln Phe Leu Pro Asp Ile Phe Pro Val His Val Glu Asn Leu Pro
145          150          155          160
Asp Tyr Gln Glu Ile Tyr Arg Leu Leu Arg Lys Ser Gln Tyr Gly Val
          165          170          175
Arg Phe Tyr Asp Lys Gly Leu Tyr Asp Glu Val Lys Glu Leu Phe Gln
          180          185          190
Glu Met Asp Leu Leu Lys His Thr Asn Arg Leu Ile Thr Ile Leu Arg
          195          200          205
Ile Leu Gly Arg Leu Thr Glu Cys Arg Asn Ile Lys Leu Leu Ser Asp
          210          215          220
Val Ala Tyr Asn Gly Ser Asn Arg Leu Leu Glu Val Asn Glu Pro Val
225          230          235          240
Asn Lys Val Tyr Thr Tyr Leu Phe Asn His Phe Lys Glu Lys Val Leu
          245          250          255
Leu Gln Glu Val Ala Asp Tyr Val Lys Gln Asn Pro Ser Ala Leu Cys
          260          265          270
Arg Tyr Phe Lys Gln Arg Thr Asp Lys Ser Ile Phe Gln Cys Leu Ala
          275          280          285
Glu Ile Arg Ile Glu His Ala Cys Lys Leu Leu Ser Tyr Ser Asn Leu
          290          295          300
Ser Val Ser Gln Ile Ala Phe Glu Ser Gly Phe Asn Ser Val Pro Tyr
305          310          315          320
Phe Ile Lys Gln Phe Gln Ser Ile Thr Glu Lys Thr Pro Gly Glu Tyr
          325          330          335
Arg Glu Leu Ile Gly Arg
          340

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<210> 6078
 <211> 362
 <212> PRT
 <213> B.fragilis

<400> 6078

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Asn Ile Tyr His Leu Lys His Ile Asn Met Lys Val Leu Tyr Ile Gly
1          5          10          15

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Tyr Asp Lys Lys Leu Val Lys Ser Gly Ala Asp Gln Ile Asp Ile Arg
 20 25 30
 Asn Leu Glu Leu Leu Tyr Asp Ser Ile Pro Tyr Val Lys Val Leu Pro
 35 40 45
 Val Leu Glu Thr Arg Ser Phe Tyr Lys Arg Tyr Leu Phe Gly Ile Asp
 50 55 60
 Ser Leu Leu Ile Gln Lys Val Phe Ala Glu Leu Gln Thr Gly Asp Tyr
 65 70 75 80
 Gln Leu Val Phe Val Ser Gln Ser Leu Met Gly Arg Ile Ser Lys His
 85 90 95
 Ile Lys Cys Asp Phe Pro Asn Ile Lys Ile Ile Thr Phe Phe His Asn
 100 105 110
 Ile Glu Lys Tyr Tyr Ala Leu Glu Leu Leu Arg Val Ser Gly Phe Thr
 115 120 125
 His Tyr Leu Phe Tyr Leu Ala Ala Ser Tyr Phe Glu Phe Gln Ser Val
 130 135 140
 Lys Tyr Ser Asp Tyr Leu Ile Val Leu Asn Gln Arg Glu Ser Asn Leu
 145 150 155 160
 Leu Gln Lys Ile Tyr Asn Lys Ser Ala Asp Leu Ile Leu Pro Thr Ser
 165 170 175
 Phe Lys Asp Gln Cys Ser Lys Ile Glu Asn Cys Asn Ile Arg Lys Glu
 180 185 190
 Phe Val Tyr Leu Phe Val Gly Ala Ala Phe Phe Ala Asn Ile Gln Gly
 195 200 205
 Ile Lys Trp Phe Ile Ser Asn Val Leu Pro Glu Val His Gly Lys Leu
 210 215 220
 Ile Ile Val Gly Lys Gly Met Asp Leu Tyr Arg Glu Glu Phe Ala Ser
 225 230 235 240
 Glu Arg Val Glu Val Tyr Gly Tyr Val Gln Asn Leu Ser Glu Tyr Tyr
 245 250 255
 Ser Met Ala Ser Val Val Ile Ser Pro Ile Phe Ser Gly Gly Gly Met
 260 265 270
 Lys Thr Lys Val Ala Glu Ala Phe Met Tyr Gly Lys Val Val Val Gly
 275 280 285
 Thr Lys Glu Ala Phe Thr Gly Tyr Val Asn Cys Ser Gly Val Met Tyr
 290 295 300
 Glu Cys Asn Asp Lys Tyr Ala Phe Val Lys Ile Leu Asn Glu Leu Phe
 305 310 315 320
 Val Asp Lys Thr His Thr Val Phe Asn Ser Lys Ala Arg Glu Ile Tyr
 325 330 335
 Leu Gln Glu Tyr Ser Tyr Glu Ser Ser Tyr Ser Lys Phe Ser Arg Trp
 340 345 350
 Ile Ser Pro Ile Leu Lys Leu Leu Asn Lys
 355 360

<210> 6079

<211> 466

<212> PRT

<213> B.fragilis

<400> 6079

Ile Met Asn Gln Asp Thr Ile Cys Ala Ile Ala Thr Ala Gln Gly Gly
 1 5 10 15
 Ala Ile Gly Ser Ile Arg Val Ser Gly Pro Glu Ala Ile Thr Ile Thr
 20 25 30
 Gly Arg Ile Phe Thr Pro Ala Lys Ser Gly Lys Leu Leu Ser Glu Gln
 35 40 45
 Lys Pro Tyr Thr Leu Thr Phe Gly Arg Ile Tyr Asn Gly Glu Glu Met
 50 55 60

```

Ile Asp Glu Val Leu Val Ser Leu Phe Arg Ala Pro His Ser Tyr Thr
65      70      75      80
Gly Glu Asp Ser Thr Glu Ile Thr Cys His Gly Ser Ser Tyr Ile Leu
      85      90      95
Gln Gln Val Met Gln Leu Leu Ile Lys Asn Gly Cys Arg Met Ala Gln
      100      105      110
Pro Gly Glu Tyr Thr Gln Arg Ala Phe Leu Asn Gly Lys Met Asp Leu
      115      120      125
Ser Gln Ala Glu Ala Val Ala Asp Leu Ile Ala Ser Ser Ser Ala Ala
      130      135      140
Thr His Arg Leu Ala Leu Ser Gln Met Arg Gly Gly Phe Ser Lys Glu
145      150      155      160
Leu Thr Thr Leu Arg Glu Lys Leu Leu Asn Phe Thr Ser Met Ile Glu
      165      170      175
Leu Glu Leu Asp Phe Ser Glu Glu Asp Val Glu Phe Ala Asp Arg Ser
      180      185      190
Ala Leu Arg Arg Leu Ala Asp Glu Ile Glu Glu Val Ile Ala Arg Leu
      195      200      205
Ala Asn Ser Phe Ser Val Gly Asn Val Ile Lys Asn Gly Val Pro Val
      210      215      220
Ala Ile Ile Gly Glu Thr Asn Ala Gly Lys Ser Thr Leu Leu Asn Val
225      230      235      240
Leu Leu Asn Glu Asp Lys Ala Ile Val Ser Asp Ile His Gly Thr Thr
      245      250      255
Arg Asp Val Ile Glu Asp Thr Val Asn Ile Gly Gly Ile Thr Phe Arg
      260      265      270
Phe Ile Asp Thr Ala Gly Ile Arg Glu Thr Ser Asp Thr Ile Glu Ser
      275      280      285
Leu Gly Ile Glu Arg Thr Phe Gln Lys Leu Asp Gln Ala Glu Ile Val
      290      295      300
Leu Trp Met Ile Asp Ser Ala Asp Ala Ile Ser Gln Leu Thr Leu Leu
305      310      315      320
Ser Asp Lys Ile Leu Pro Arg Cys Glu His Lys Gln Leu Ile Leu Val
      325      330      335
Phe Asn Lys Val Glu Leu Ile Asn Glu Thr Gln Lys Asn Glu Leu Thr
      340      345      350
Ser Gln Phe Ser Glu His Ile Gly Ser Glu Ile Glu Ser Ile Phe Ile
      355      360      365
Ser Ala Lys Gln Arg Leu His Thr Asp Glu Leu Gln Arg Leu Val
      370      375      380
Ala Ala Ala His Leu Pro Thr Val Thr Gln Asn Asp Val Ile Val Thr
385      390      395      400
Asn Val Arg His Tyr Glu Ala Leu Thr Arg Ala Leu Asp Ala Ile His
      405      410      415
Arg Val Gln Glu Gly Leu Asp Ala Asn Ile Ser Gly Asp Phe Leu Ser
      420      425      430
Gln Asp Ile Arg Glu Cys Ile Phe His Leu Ser Asp Ile Ala Gly Glu
      435      440      445
Val Thr Asn Asp Met Val Leu Gln Asn Ile Phe Ala His Phe Cys Ile
      450      455      460
Gly Lys
465

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<210> 6080

<211> 215

<212> PRT

<213> B.fragilis

<400> 6080

```

Ile Ser Arg Gln Met Asn Lys Arg Gly Phe Val Ser Arg Ile Leu Gln
1      5      10      15
Asn Phe Arg Lys Pro Glu Gly Phe Phe Gly Arg Met Ile Leu Trp Gly
20      25      30
Met Asn Thr Gly His Ala Ser Leu Ala Gln Trp Gly Met Ser Cys Leu
35      40      45
Gln Trp Gln Pro Glu Trp Ser Val Leu Asp Ile Gly Cys Gly Gly Gly
50      55      60
Ala Asn Leu Leu Gln Ile Leu Gln Arg Cys Pro Gln Gly Lys Ala Tyr
65      70      75      80
Gly Ile Asp Ile Ser Ser Glu Ser Val Thr Phe Ala Arg Lys Lys Asn
85      90      95
Lys Lys Tyr Leu Gly Thr Arg Cys Phe Ile Glu Gln Gly Gly Val His
100     105     110
Arg Leu Pro Tyr Pro Asp Tyr Ala Phe Asp Ala Val Thr Ala Phe Glu
115     120     125
Thr Val Tyr Phe Trp Gly Asn Leu Gln His Ala Phe Thr Glu Val Ala
130     135     140
Arg Val Leu Lys Pro Gly Gly Ser Phe Leu Ile Cys Cys Glu Ile Ser
145     150     155     160
Asp Pro Ala Asn Lys Ala Trp Thr Gly Leu Val Glu Gly Met Glu Ile
165     170     175
His Ser Cys Asp Glu Leu Lys Ala Ile Leu Ser Lys Ser Gly Phe Thr
180     185     190
Asp Thr Ala Ile Phe Arg Thr Lys Lys Glu Glu Leu Cys Leu Val Ser
195     200     205
His Arg Gln Thr Val Arg Leu
210     215

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<210> 6081

<211> 522

<212> PRT

<213> B.fragilis

<400> 6081

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Lys Met Arg Gln Tyr Val Leu Leu Ala Cys Leu Ser Pro Val Ala Cys
1      5      10      15
Leu Met Ala Ala Thr Gly Gln Lys Gly Gly Lys Ala Lys Gln Lys Ile
20      25      30
Asn Asp Arg Gln Leu Pro Asn Val Phe Ile Tyr Ala Asp Asp Leu
35      40      45
Gly Tyr Gly Asp Leu Glu Cys Tyr Gly Ala Lys Asn Val Gln Thr Pro
50      55      60
Asn Val Asn Arg Leu Ala Ala Glu Gly Ile Arg Phe Asn Asn Ala His
65      70      75      80
Ala Thr Ala Ala Thr Ser Thr Pro Ser Arg Tyr Ser Met Leu Thr Gly
85      90      95
Glu Tyr Ala Trp Arg Arg Pro Gly Thr Asp Ile Ala Ala Gly Asn Ala
100     105     110
Gly Met Ile Ile Arg Pro Glu Arg Tyr Thr Met Ala Asp Met Phe Lys
115     120     125
Asn Ala Gly Tyr Ala Thr Ala Ala Ile Gly Lys Trp His Leu Gly Leu
130     135     140
Gly Asp Lys Asp Gly Glu Gln Asp Trp Asn Ala Pro Leu Pro Thr Ala
145     150     155     160
Leu Gly Asp Ile Gly Phe Asp Tyr Ser Tyr Ile Met Ala Ala Thr Ala
165     170     175
Asp Arg Val Pro Cys Val Phe Ile Glu Asn Gly Lys Val Ala Asn Tyr
180     185     190

```

```

Asp Pro Ser Ala Pro Ile Glu Val Ser Tyr Arg Lys Pro Ile Glu Gly
    195                200                205
Glu Pro Leu Gly Lys Asp His Pro Glu Leu Leu Phe Asn Leu Lys Ser
    210                215                220
Ser His Gly His Asp Met Ala Ile Val Asn Gly Ile Cys Arg Ile Gly
    225                230                235                240
Tyr Met Lys Gly Gly Gly Lys Ala Leu Arg Lys Asp Glu Asn Ile Ala
                245                250                255
Asp Ser Ile Thr Ser His Ala Ile Gly Phe Ile Arg Glu His Asn Asp
                260                265                270
Glu Pro Phe Phe Met Tyr Leu Ala Thr Asn Asp Val His Val Pro Arg
                275                280                285
Phe Pro His Asp Arg Phe Arg Gly Lys Asn Pro Met Gly Leu Arg Gly
    290                295                300
Asp Ala Ile Val Gln Phe Asp Trp Ser Val Gly Gln Ile Met Glu Thr
    305                310                315                320
Leu Asp Lys Leu Gly Leu Ser Glu Asn Thr Leu Ile Ile Leu Ser Ser
                325                330                335
Asp Asn Gly Pro Val Val Asp Asp Gly Tyr Gln Asp Arg Ala Glu Glu
                340                345                350
Leu Leu Asn Gly His Ser Pro Ala Gly Pro Leu Arg Gly Asn Lys Tyr
    355                360                365
Ser Ala Phe Glu Gly Gly Thr Arg Ile Pro Ala Ile Val Arg Trp Pro
    370                375                380
Lys Gly Ala Ala Ser Ser Gln Val Ser Asn Ala Leu Val Ser Gln Ile
    385                390                395                400
Asp Trp Phe Ala Ser Leu Ala Ser Leu Val Gly Ala Gly Leu Pro Lys
                405                410                415
Gly Ala Ala Pro Asp Ser Phe Asn Tyr Leu Asp Thr Trp Leu Gly Lys
                420                425                430
Asn Gln Ser Asp Arg Ser Trp Val Ile Glu Gln Ala Ser Asn His Thr
    435                440                445
Leu Ser Val Arg Thr Lys Asp Trp Lys Tyr Ile Glu Pro Asn Asp Gly
    450                455                460
Pro Ala Met Ile Thr Trp Gly Pro Lys Ile Glu Thr Gly Asn Leu Ser
    465                470                475                480
Thr Pro Gln Leu Tyr His Val Val Asp Asp Val Ala Glu Gln Lys Asn
                485                490                495
Val Ala Ser Leu His Pro Asp Leu Val Phe Glu Leu Gln Asn Ile Leu
    500                505                510
Arg His Val Arg Met Lys Asn Leu Lys Pro
    515                520

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<210> 6082

<211> 83

<212> PRT

<213> B.fragilis

<400> 6082

```

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
1          5          10          15
Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
    20          25          30
Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
    35          40          45
Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
    50          55          60
Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
    65          70          75          80

```

Ser Ala Arg

<210> 6083

<211> 124

<212> PRT

<213> B.fragilis

<400> 6083

Ala	Ser	Ile	Asn	Asp	Val	His	His	Trp	Tyr	Arg	Gln	Tyr	Ile	Arg	Ile
1				5					10					15	
Arg	Thr	Ser	Asp	Val	Ser	Val	Lys	Arg	Asn	Ile	Glu	Ile	Val	Gly	Ser
			20					25					30		
Ser	Phe	Ser	Tyr	Gly	Lys	Arg	Asn	Thr	Gln	Asn	Ser	Val	Gly	Thr	Gln
			35				40					45			
Phe	Gly	Phe	Cys	Leu	Cys	Ser	Ile	Gln	Cys	Gln	His	Gly	Met	Ile	Asn
	50					55					60				
Ala	Tyr	Leu	Val	Glu	Gly	Arg	His	Thr	Asp	Gln	Met	Arg	Ser	Asn	Asp
65					70				75						80
Phe	Ile	Asp	Val	Leu	Tyr	Cys	Phe	Leu	Tyr	Thr	Leu	Ala	Ala	Ile	Thr
			85					90						95	
Met	Phe	Ile	Thr	Val	Ala	Glu	Phe	Lys	Arg	Phe	Val	Phe	Thr	Gly	Arg
			100					105					110		
Cys	Thr	Arg	Trp	Asn	Gly	Cys	Thr	Ser	His	Asn	Ala				
			115				120								

<210> 6084

<211> 183

<212> PRT

<213> B.fragilis

<400> 6084

Arg	Thr	Ile	Asn	Glu	Thr	Cys	Thr	Met	Lys	Lys	Leu	Ile	Lys	Leu	Val
1				5					10					15	
Leu	Phe	Leu	Met	Val	Ala	Tyr	Pro	Leu	Thr	Gly	Ala	Ile	Leu	Ser	Ala
			20					25					30		
Cys	Ser	Glu	Glu	Ser	Asp	Cys	Ser	Met	Thr	Gly	Arg	Pro	Met	Val	Tyr
		35				40					45				
Ala	Lys	Met	Tyr	Ile	Ile	Asn	Pro	Glu	Thr	Lys	Ala	Val	Leu	Asn	Asp
	50					55					60				
Thr	Leu	Asp	Ser	Leu	Ser	Val	Thr	Ala	Phe	Gly	Thr	Asp	Ser	Ile	Ile
65				70					75						80
Ile	Asn	Asn	Gln	Lys	Lys	Val	His	Asp	Ile	Ala	Leu	Pro	Leu	Arg	Tyr
			85					90					95		
Thr	Ser	Asp	Ser	Thr	Ile	Leu	Val	Phe	His	Tyr	Thr	Arg	Leu	Leu	Arg
		100					105					110			
Asp	Thr	Met	Val	Ile	Leu	Gln	Thr	Asn	Thr	Pro	Tyr	Phe	Gln	Ser	Met
		115					120					125			
Asp	Cys	Gly	Tyr	Ser	Met	Lys	Gln	Asn	Ile	Ile	Ser	Ile	His	Pro	Ile
	130					135					140				
Asp	Tyr	Thr	Glu	Thr	Asn	Lys	Lys	Lys	Tyr	His	Ser	Ile	Asp	Ser	Leu
145					150				155						160
Tyr	Ile	Lys	Ser	Asn	Ala	Ala	Asn	Ile	Asn	Gly	Thr	Glu	Asn	Leu	Lys
			165					170						175	
Ile	Phe	Tyr	Arg	Tyr	Asn	Arg									
			180												

<210> 6085

<211> 81

<212> PRT
 <213> B.fragilis

<400> 6085

Ala	Thr	Asp	Lys	Lys	Ile	Asp	Asn	Ile	Ala	Ile	Asn	Pro	Lys	Ser	Ala
1				5					10					15	
Gly	Glu	Thr	Asn	Leu	Ala	Ile	Thr	Met	Val	Asn	Ile	Lys	Arg	Asn	Ala
			20					25					30		
Cys	Pro	Asp	Ile	Phe	Ser	Thr	Ala	Phe	His	Ile	Lys	Leu	Phe	Asn	Ala
		35					40					45			
Ala	Asn	Phe	Lys	Phe	Leu	Ile	Ile	Ile	Tyr	Asn	His	His	Leu	Gln	Val
	50					55					60				
Ile	Asn	Asn	Ile	Lys	Ala	Leu	Ile	Ile	Gln	Lys	Tyr	Asn	Gln	Tyr	Leu
65					70				75						80
Val															

<210> 6086
 <211> 321
 <212> PRT
 <213> B.fragilis

<400> 6086

Phe	Ile	Ser	Lys	Met	Asp	Ile	Ser	Val	Val	Val	Pro	Leu	Phe	Asn	Glu
1				5					10					15	
Glu	Glu	Ser	Ile	Pro	Glu	Leu	Phe	Ala	Trp	Ile	Glu	Arg	Val	Met	Lys
			20					25					30		
Ala	Asn	Gly	Phe	Ser	Tyr	Glu	Val	Ile	Phe	Val	Asn	Asp	Gly	Ser	Thr
		35					40					45			
Asp	Arg	Ser	Trp	Glu	Ile	Ile	Glu	Glu	Leu	Gln	Lys	Gln	Ser	Ser	Thr
	50					55					60				
Val	Lys	Gly	Ile	Lys	Phe	Arg	Arg	Asn	Tyr	Gly	Lys	Ser	Pro	Ala	Leu
65					70				75						80
Tyr	Cys	Gly	Phe	Glu	Arg	Ala	Glu	Gly	Asn	Val	Val	Ile	Thr	Met	Asp
			85					90						95	
Ala	Asp	Leu	Gln	Asp	Ser	Pro	Asp	Glu	Ile	Pro	Glu	Leu	Tyr	Arg	Met
		100						105					110		
Ile	Thr	Glu	Asp	Gly	Tyr	Asp	Leu	Val	Ser	Gly	Tyr	Lys	Gln	Lys	Arg
	115						120						125		
Tyr	Asp	Pro	Leu	Ser	Lys	Thr	Leu	Pro	Thr	Lys	Leu	Phe	Asn	Ala	Thr
	130					135					140				
Ala	Arg	Lys	Val	Ser	Gly	Ile	His	Asn	Leu	His	Asp	Phe	Asn	Cys	Gly
145					150					155					160
Leu	Lys	Ala	Tyr	Arg	Lys	Ala	Val	Val	Lys	Asn	Ile	Glu	Val	Tyr	Gly
			165						170					175	
Glu	Met	His	Arg	Tyr	Ile	Pro	Tyr	Leu	Ala	Lys	Asn	Ala	Gly	Phe	Gln
		180					185						190		
Lys	Ile	Gly	Glu	Lys	Val	Val	His	His	Gln	Ala	Arg	Lys	Phe	Gly	Lys
	195						200					205			
Thr	Lys	Phe	Gly	Gly	Trp	Asn	Arg	Phe	Phe	Asn	Gly	Tyr	Leu	Asp	Leu
	210					215					220				
Ile	Ser	Leu	Trp	Phe	Leu	Ser	Lys	Phe	Gly	Ile	Lys	Pro	Met	His	Phe
225					230				235						240
Phe	Gly	Leu	Leu	Gly	Ser	Leu	Met	Phe	Ile	Leu	Gly	Phe	Ile	Ser	Val
			245						250					255	
Val	Ile	Val	Gly	Ala	Ser	Lys	Leu	Tyr	Ser	Met	Asn	His	Gly	Met	Pro
		260						265					270		
Tyr	Arg	Leu	Val	Thr	Asp	Ser	Pro	Tyr	Phe	Tyr	Leu	Ser	Leu	Thr	Ala
		275					280						285		

Met Ile Ile Gly Thr Gln Leu Phe Leu Ala Gly Phe Leu Gly Glu Leu
 290 295 300
 Ile Ser Arg Asn Ala Pro Glu Arg Asn Asn Tyr Gln Ile Glu Lys Ile
 305 310 315 320
 Ile

<210> 6087
 <211> 265
 <212> PRT
 <213> B.fragilis

<400> 6087
 Ser Asp Cys Lys Thr Ile Ser Ser Gly Glu Ala Glu Arg Asn Asp Arg
 1 5 10 15
 Asn Leu Phe Ile Gly Gly Arg Asn Ser Arg Ser Phe Asn Ala Thr Ile
 20 25 30
 Tyr His Ile Val Cys Ser Val Val Asn Asn Ala Ile Lys Ile Asn Trp
 35 40 45
 Ile Met Lys Lys Val Val Leu Ile Gly Ala Ser Gly Phe Val Gly Ser
 50 55 60
 Ala Ile Leu Asn Glu Ala Leu Asn Arg Gly Phe His Val Thr Ala Val
 65 70 75 80
 Val Arg His Pro Glu Lys Ile Lys Ile Glu Asn Glu Asn Leu Glu Val
 85 90 95
 Lys Arg Ala Asp Val Ser Ser Leu Asp Glu Val Cys Lys Val Cys Lys
 100 105 110
 Gly Ala Asp Ala Val Ile Ser Ala Phe Asn Pro Gly Trp Asn Asn Pro
 115 120 125
 Asp Ile Tyr Lys Glu Thr Ile Glu Val Tyr Leu Thr Ile Ile Asp Gly
 130 135 140
 Val Lys Lys Ala Gly Val Asn Arg Phe Leu Met Val Gly Gly Ala Gly
 145 150 155 160
 Ser Leu Phe Ile Ala Pro Gly Ile Arg Leu Val Asp Ser Gly Glu Val
 165 170 175
 Pro Glu Lys Ile Leu Pro Gly Val Arg Ala Leu Ser Asp Phe Tyr Leu
 180 185 190
 Asp Phe Leu Lys Lys Glu Lys Glu Val Asp Trp Val Phe Phe Ser Pro
 195 200 205
 Ala Ala Asp Met Ala Pro Gly Val Arg Thr Gly Arg Tyr Arg Leu Gly
 210 215 220
 Lys Asp Glu Met Ile Val Asp Met Val Gly Asn Ser His Ile Ser Val
 225 230 235 240
 Glu Asp Tyr Ala Ala Ala Met Ile Asp Glu Leu Glu Lys Pro Glu His
 245 250 255
 His Gln Glu Arg Phe Thr Ile Gly Tyr
 260 265

<210> 6088
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 6088
 Ser Asp Gly Lys Ile Gln Tyr Arg Thr Phe Asn Asp Asn Asn Leu Lys
 1 5 10 15
 Asn Gly Lys Val Tyr Asp Val Asp Phe Glu Ala Ala Gln Gln Thr Gln
 20 25 30
 Ala Pro Thr Gly Thr Leu Val Ala Arg Tyr Arg Pro Ile Pro Ser Leu

35	40	45
Ser Asp Pro Lys Tyr Tyr	Ser His Phe Thr Leu	Ser Lys Phe Arg Asn
50	55	60
Gly Thr Phe Gln Leu Leu	Asn Tyr Asp Glu Gly	Asp Val Asp Met Gly
65	70	75
Gly Gly Ala Thr Trp	Ser Asn Leu Leu Lys	Asn Gly Ala Arg Leu Asp
85	90	95
Thr Gly Tyr Tyr Met Met	Val Thr Gly Thr Arg Met	Ala Ser Gly Ala
100	105	110
Val Leu Ala Asn Val Thr	Phe Phe Thr Ile Glu Glu	Gly Lys Thr Thr
115	120	125
Thr Val Asp Leu Val Met	Arg Glu Ser Lys Asp	Gln Val Gln Val Ile
130	135	140
Gly Asn Phe Asn Ser Glu	Ser Thr Tyr Leu Pro	Ile Gly Thr Ser Glu
145	150	155
Pro Gln Ser Ile Leu Gln	Thr Cys Gly Arg Gly	Tyr Tyr Val Val Ala
165	170	175
Val Leu Gly Ala Gly Gln	Glu Pro Thr Asn His	Ala Leu Arg Asp Ile
180	185	190
Ala Ala Leu Ser Gly Glu	Phe Glu Lys Trp Gly	Arg Lys Met Val Leu
195	200	205
Leu Phe Pro Ser Glu Glu	Gln Tyr Lys Lys Phe	Arg Pro Ser Glu Phe
210	215	220
Pro Gly Leu Pro Ser Thr	Ile Thr Tyr Gly Ile	Asp Val Asp Gly Ala
225	230	235
Ile Gln Lys Gln Ile Ala	Glu Ser Met Lys Leu	Pro Asn Ser Thr Ile
245	250	255
Leu Pro Met Phe Ile Ile	Gly Asp Thr Phe Asn	Arg Val Val Phe Val
260	265	270
Ser Gln Gly Tyr Thr Ile	Gly Leu Gly Glu Gln	Leu Met Lys Val Ile
275	280	285
His Gly Leu		
290		

<210> 6089

<211> 238

<212> PRT

<213> B.fragilis

<400> 6089

Ile Lys Leu Asn Tyr Ser	Val Ala Glu Leu Arg	Ile Thr Asn Glu Ser
1	5	10
Tyr Met Lys Pro Thr	Ile Lys Lys Val Gln	Pro Val Lys Val Val Ala
20	25	30
Pro Phe Leu Asn Ser	Gln Ser Glu Ser Pro	Val Pro Leu Asp Ala Leu
35	40	45
Thr Asp Gln Glu Lys	Val Ser Asp Leu Tyr	Phe Leu Lys Gly Thr Val
50	55	60
His Gln Ile Ala Lys	Pro Tyr Leu Ser Ile	Asn Asn Cys Thr Phe Lys
65	70	75
Gln Gln Ile Phe Ser	Glu Cys Gln Phe Lys	Ser Ala Gln Leu Thr Asp
85	90	95
Val Arg Phe Glu Asn	Cys Asp Leu Ser Asn	Val Ser Phe Ala Gly Thr
100	105	110
Thr Phe Tyr Arg Val	Glu Phe Ile Ser Cys	Lys Leu Leu Gly Thr Gly
115	120	125
Phe Pro Glu Ala Thr	Leu Asn His Val Leu	Met Asp His Cys Tyr Gly
130	135	140
Gln Tyr Ile Asn Leu	Ser Met Val Lys Met	Arg Thr Ala Arg Phe Ser

145		150		155		160									
His	Cys	Asn	Phe	Arg	Asn	Gly	Ser	Leu	Asn	Asp	Ser	Lys	Leu	Met	Pro
				165					170					175	
Ala	Ala	Phe	Asp	Thr	Cys	Glu	Leu	Leu	Glu	Ala	Asp	Phe	Ser	His	Thr
			180					185					190		
Ser	Leu	Lys	Gly	Ile	Asp	Leu	Arg	Asn	Ser	Arg	Ile	Ala	Gly	Ile	Gln
		195					200					205			
Leu	Asn	Ile	Ala	Asp	Leu	Lys	Gly	Ala	Ile	Val	Ser	Ser	Leu	Gln	Ala
	210					215				220					
Ile	Asp	Leu	Leu	Pro	Leu	Leu	Gly	Val	Lys	Ile	Glu	Asp	Asp		
225					230					235					

<210> 6090

<211> 153

<212> PRT

<213> B.fragilis

<400> 6090

Lys	Glu	Leu	Lys	Asp	Met	Lys	Leu	Ser	Gln	Gln	Ser	Gln	Ala	Ile	Ile
1				5					10					15	
Glu	Ser	Ala	Ile	Gln	Lys	Ala	Ile	Asn	Lys	Tyr	Thr	Cys	Gly	Cys	Glu
			20					25					30		
Gln	Thr	Ile	Val	Thr	Asp	Ile	His	Ile	Gln	Pro	Asn	Gln	Asn	Ser	Gly
			35				40					45			
Glu	Leu	Phe	Ile	Tyr	Asp	Asp	Glu	Asp	Glu	Glu	Leu	Ser	Ser	Val	Thr
	50					55					60				
Ile	Asp	Glu	Trp	Thr	Thr	Tyr	Glu	Gly	Asp	Asp	Phe	Tyr	Glu	Asp	Ala
65					70				75						80
Glu	Arg	Ile	Phe	Arg	Thr	Val	Leu	Cys	Arg	Met	Lys	Glu	Asn	Gly	Ser
				85					90					95	
Phe	Asp	Lys	Leu	Thr	Ile	Leu	Lys	Pro	Tyr	Ser	Phe	Val	Leu	Val	Asp
			100					105					110		
Glu	Asp	Lys	Glu	Thr	Ile	Ser	Glu	Leu	Leu	Leu	Val	Asp	Asp	Asp	Thr
		115					120					125			
Leu	Leu	Val	Asn	Asp	Glu	Leu	Leu	Lys	Gly	Leu	Asp	Lys	Glu	Leu	Asp
	130					135					140				
Asp	Phe	Leu	Lys	Asp	Leu	Leu	Glu	Lys							
145					150										

<210> 6091

<211> 411

<212> PRT

<213> B.fragilis

<400> 6091

Lys	Thr	Ile	Asn	Leu	Asp	Ser	Met	Glu	Ser	Ile	Asp	Phe	Gly	Thr	Leu
1				5					10					15	
Phe	Gln	Gly	Phe	Gly	Thr	Met	Ile	Ala	Ser	Gly	Trp	Phe	Leu	Ala	Ser
			20					25					30		
Ala	Arg	Met	Phe	Leu	Ile	Ala	Leu	Gly	Phe	Leu	Leu	Ile	Tyr	Leu	Gly
			35				40					45			
Trp	Lys	Gly	Val	Leu	Glu	Pro	Met	Val	Met	Ile	Pro	Met	Gly	Leu	Gly
	50					55					60				
Met	Val	Ala	Ile	Asn	Cys	Gly	Thr	Leu	Ile	Met	Pro	Asp	Gly	Thr	Leu
65					70					75					80
Gly	Asn	Leu	Phe	Leu	Asp	Pro	Met	Leu	Ser	Asp	Thr	Asp	Ala	Leu	Met
				85					90					95	
Asn	Thr	Met	Gln	Ile	Asp	Phe	Leu	Gln	Pro	Val	Tyr	Thr	Leu	Thr	Phe
			100					105					110		

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Ser Asn Gly Leu Ile Ala Cys Phe Val Phe Met Gly Ile Gly Thr Leu
   115           120           125
Leu Asp Val Gly Phe Leu Leu Gln Lys Pro Phe Ala Ser Ile Phe Leu
   130           135           140
Ala Leu Cys Ala Glu Leu Gly Thr Phe Leu Thr Val Pro Ile Ala Ser
  145           150           155           160
Gly Leu Gly Leu Ser Leu Lys Glu Ser Ala Ser Val Ala Met Val Gly
           165           170           175
Gly Ala Asp Gly Pro Met Val Leu Phe Thr Ser Leu Ala Leu Ala Lys
           180           185           190
His Leu Phe Val Pro Ile Thr Val Val Ala Tyr Leu Tyr Leu Gly Leu
           195           200           205
Thr Tyr Gly Gly Tyr Pro Tyr Leu Val Lys Leu Leu Ile Pro Lys Arg
           210           215           220
Leu Arg Ala Ile Lys Met Val Glu Lys Lys Ala Pro Lys Asn Tyr Asp
  225           230           235           240
Ala Lys Val Lys Leu Ala Phe Ser Ala Ile Leu Cys Ala Val Leu Cys
           245           250           255
Phe Leu Phe Pro Val Ala Ser Pro Leu Phe Phe Ser Leu Phe Leu Gly
           260           265           270
Val Ala Val Arg Glu Ser Gly Met Lys His Ile Tyr Asp Phe Val Ser
           275           280           285
Gly Pro Leu Leu Tyr Gly Ser Thr Phe Met Leu Gly Leu Leu Leu Gly
           290           295           300
Val Leu Cys Asp Ala His Leu Leu Leu Asp Pro Lys Ile Leu Lys Leu
  305           310           315           320
Leu Val Leu Gly Met Leu Ala Leu Leu Leu Ser Gly Ile Gly Gly Ile
           325           330           335
Met Gly Gly Tyr Ile Met Tyr Phe Ile Lys Lys Gly Asn Tyr Asn Pro
           340           345           350
Val Ile Gly Ile Ala Ala Val Ser Cys Val Pro Thr Thr Ala Lys Val
           355           360           365
Ala Gln Lys Leu Val Ser Lys Asp Asn Pro Asn Ser Phe Ile Leu Gly
           370           375           380
Asp Ala Leu Gly Ala Asn Ile Ser Gly Val Ile Thr Ser Ala Ile Ile
  385           390           395           400
Thr Gly Ile Tyr Ile Thr Ile Ile Pro Tyr Leu
           405           410

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<210> 6092

<211> 510

<212> PRT

<213> B.fragilis

<400> 6092

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Thr Lys Gln Lys Ser Leu Met Lys Asn Phe Trp Lys Lys Tyr His Lys
  1           5           10           15
Trp Val Gly Leu Phe Phe Ser Phe Phe Ile Leu Met Phe Cys Phe Ser
           20           25           30
Gly Ile Val Leu Asn His Arg Thr Leu Phe Ser Lys Ala Glu Val Ser
           35           40           45
Arg Asn Trp Met Pro Glu Ser Tyr His Tyr Lys Asn Trp Asn Asn Gly
  50           55           60
Ile Ile Lys Gly Thr Leu Arg Leu Pro Asp Gly Lys Ile Leu Ala Tyr
  65           70           75           80
Gly Asn Ala Gly Val Trp Lys Thr Asp Ser Cys Phe Ala Thr Phe Ala
           85           90           95
Asp Phe Asn Arg Gly Leu Ala Lys Gly Ile Asp Asn Arg Lys Ile Ser
           100           105           110

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Asn Ile Val Arg Val Ala Asn Asn Asp Ile Trp Cys Ala Gly Leu Tyr
 115 120 125
 Ser Ile Tyr Leu Leu Asp His Asp Ser Trp Lys Glu Tyr Pro Ile Ala
 130 135 140
 Gly Asn Asp Glu Arg Ile Ser Asp Ile Thr Gln Arg Gly Asp Thr Leu
 145 150 155 160
 Val Ile Leu Thr Arg Ser Tyr Leu Tyr Thr Gly Val Ser Pro Tyr Asp
 165 170 175
 Glu Phe Arg Lys Thr Glu Leu Lys Thr Pro Glu Asn Tyr Ser Pro Lys
 180 185 190
 Thr Ser Leu Phe Arg Thr Ile Trp Leu Leu His Ser Gly Glu Leu Phe
 195 200 205
 Gly Thr Pro Gly Lys Leu Ala Val Asp Phe Leu Gly Val Val Leu Ile
 210 215 220
 Val Leu Ser Ala Thr Gly Ile Ile Tyr Thr Leu Leu Pro Pro Phe Ile
 225 230 235 240
 Arg Arg Arg His Arg Lys Arg Leu Pro Val Lys Thr Gln Ala Lys Ala
 245 250 255
 Leu Lys Thr Ser Leu Asn Trp His Asn Lys Leu Gly Thr Trp Leu Ile
 260 265 270
 Gly Leu Thr Leu Leu Leu Ser Val Thr Gly Met Cys Leu Arg Pro Pro
 275 280 285
 Leu Met Ile Pro Phe Val Leu Val Asn Thr Arg Pro Val Pro Gly Ser
 290 295 300
 Thr Leu Asp Ser Asp Asn Pro Trp His Asp Lys Leu Arg Ser Ile Arg
 305 310 315 320
 Trp Asp Ala Ser Arg Asn Val Trp Leu Leu Ser Ser Ser Met Gly Phe
 325 330 335
 Tyr Arg Ile Asn Asp Leu Gln Leu Pro Pro Val Lys Leu Lys Gln Thr
 340 345 350
 Pro Pro Val Ser Pro Met Gly Val Asn Val Phe His Pro Gln Ser Pro
 355 360 365
 Asp Glu Trp Leu Ile Gly Ser Phe Ser Gly Leu Phe Val Trp Asn Pro
 370 375 380
 Ser Thr Gly Thr Val Leu Asp Tyr Tyr Thr Gly Gln Pro Pro Ala Ala
 385 390 395 400
 Val His Gly Arg Pro Leu Gly Gly Ser Leu Val Asn Gly Phe Thr Asp
 405 410 415
 Asp Leu Val Thr Arg Glu Val Ile Phe Glu Tyr Asp Asn Gly Ala Arg
 420 425 430
 Asn Lys Glu Asn Asn Leu Val Leu Pro Ala Met Pro Asp Leu Ile Lys
 435 440 445
 Gln Gln Pro Met Ser Leu Trp Asn Phe Cys Leu Glu Leu His Val Gly
 450 455 460
 Arg Cys Tyr Ser Pro Phe Leu Gly Val Phe Ser Asp Leu Phe Val Phe
 465 470 475 480
 Ile Ser Gly Leu Leu Leu Thr Leu Ile Leu Ile Ser Gly Tyr Ile Val
 485 490 495
 Tyr Lys Arg His His Lys Arg Ser Lys Lys Ile Arg Met His
 500 505 510

<210> 6093

<211> 642

<212> PRT

<213> B.fragilis

<400> 6093

Arg Tyr Arg Lys Ile Lys Val Glu Asn Ser Asn Ser Gly Lys Met Lys
 1 5 10 15

Gln	Lys	Glu	Lys	Glu	Ile	Lys	Thr	Lys	Tyr	Met	Asn	Gln	Lys	His	Ser
		20						25				30			
Leu	Pro	Pro	Leu	Leu	Lys	Arg	Gly	Thr	Gly	Val	Arg	Pro	Tyr	Leu	Thr
		35					40					45			
Thr	Asn	Cys	Met	Lys	Thr	Leu	Thr	Arg	Phe	Leu	Ile	Pro	Met	Leu	
	50					55					60				
Ser	Val	Ala	Phe	Phe	Ser	Cys	Ser	Glu	Ser	His	Phe	Leu	Lys	Asp	Val
65					70					75					80
Ala	Tyr	Arg	Asn	Gln	Val	Thr	Gln	Asp	Phe	Glu	Met	Lys	Lys	Gln	Gln
			85						90					95	
Leu	Pro	Asn	Gly	Glu	Leu	Phe	Ala	Val	Phe	Asn	Glu	Lys	Leu	Thr	Ile
			100					105					110		
Pro	Glu	Gln	Glu	Ala	Leu	Met	Phe	Leu	Tyr	Ala	Tyr	Met	Pro	Thr	Gly
		115					120					125			
Asp	Val	Thr	Asp	Tyr	Thr	Gly	Asp	Tyr	Tyr	Leu	Glu	Asn	Val	Arg	Leu
	130					135					140				
Ser	Asp	Gln	Ala	Arg	Arg	Glu	Met	Pro	Trp	Gly	Lys	Glu	Ile	Pro	Asp
145					150					155					160
Asp	Val	Phe	Arg	His	Phe	Val	Leu	Pro	Ile	Arg	Val	Asn	Asn	Glu	Asn
				165					170					175	
Leu	Asp	Asp	Ser	Arg	Arg	Val	Phe	Tyr	Asn	Glu	Leu	Lys	Asp	Arg	Val
			180					185					190		
Lys	Asn	Leu	Ser	Leu	His	Asp	Ala	Val	Leu	Glu	Val	Asn	His	Trp	Cys
		195					200					205			
His	Glu	Lys	Val	Ile	Tyr	Thr	Pro	Ser	Asp	Ala	Arg	Thr	Ser	Ser	Pro
	210					215					220				
Leu	Ala	Ser	Val	Lys	Thr	Ala	Tyr	Gly	Arg	Cys	Gly	Glu	Glu	Ser	Thr
225					230					235					240
Phe	Thr	Val	Ala	Ala	Leu	Arg	Ser	Val	Gly	Ile	Pro	Ala	Arg	Gln	Val
			245						250					255	
Tyr	Thr	Pro	Arg	Trp	Ala	His	Thr	Asp	Asp	Asn	His	Ala	Trp	Val	Glu
			260					265					270		
Ala	Trp	Val	Asp	Gly	Lys	Trp	Tyr	Phe	Phe	Gly	Ala	Cys	Glu	Pro	Glu
		275					280					285			
Pro	Val	Leu	Asn	Leu	Gly	Trp	Phe	Asn	Ala	Pro	Ala	Ser	Arg	Gly	Met
		290				295					300				
Leu	Met	His	Thr	Lys	Val	Phe	Gly	Arg	Tyr	Thr	Gly	Gln	Glu	Glu	Ile
305					310					315					320
Met	Tyr	Glu	Thr	Pro	Asn	Tyr	Thr	Glu	Ile	Asn	Val	Ile	Asp	Asn	Tyr
				325					330				335		
Ala	Pro	Thr	Ala	Lys	Gly	Ser	Val	Leu	Val	Thr	Asp	Ala	Glu	Gly	Gln
			340					345					350		
Pro	Val	Ala	Asp	Ala	Thr	Val	Glu	Phe	Lys	Val	Tyr	Asn	Tyr	Ala	Glu
		355					360					365			
Phe	Tyr	Thr	Val	Ala	Thr	Lys	His	Thr	Asp	Arg	Ser	Gly	His	Ala	Ser
370					375						380				
Leu	Thr	Ala	Gly	Lys	Gly	Asp	Met	Leu	Val	Trp	Ala	Ser	Lys	Asp	Gly
385					390					395					400
Arg	Phe	Gly	Tyr	Ser	Lys	Leu	Ser	Phe	Gly	Lys	Asp	Asn	Glu	Leu	Lys
				405					410				415		
Ile	Thr	Leu	Asp	Lys	Asn	Ala	Gly	Glu	Thr	Tyr	Ser	Leu	Pro	Leu	Asp
			420					425					430		
Ile	Val	Pro	Pro	Ala	Glu	Gly	Ala	Asn	Leu	Pro	Glu	Val	Thr	Pro	Glu
		435					440					445			
Gln	Arg	Thr	Glu	Asn	Asp	Arg	Arg	Met	Ala	Gln	Glu	Asp	Ser	Ile	Arg
	450					455					460				
Asn	Ala	Tyr	Val	Ala	Thr	Phe	Ile	Thr	Glu	Glu	Gln	Ala	Arg	Thr	Phe
465					470					475					480
Ala	Lys	Glu	Asn	Lys	Leu	Asp	Glu	Thr	Glu	Thr	Val	Arg	Leu	Leu	Ile

485 490 495
 Ala Ser Arg Gly Asn His Gln Thr Leu Thr Asp Phe Leu Ser Asp Ala
 500 505 510
 Val Lys Ala Asp Lys Ala Gly Gln Ala Ile Ser Leu Leu Lys Val Val
 515 520 525
 Ser Ala Lys Asp Leu Arg Asp Val Ser Pro Glu Val Leu Asn Asp His
 530 535 540
 Leu Asn Asn Ser Gly Leu Pro Ala Ser Glu Asp Phe Cys Ser Asn Val
 545 550 555 560
 Leu Asn Pro Arg Val Ala Asn Glu Met Ile Thr Pro Tyr Lys Ala Phe
 565 570 575
 Phe Arg Lys Glu Ile Pro Ala Ser Glu Ala Glu Ala Phe Arg Lys Asn
 580 585 590
 Pro Gln Ala Leu Val Glu Trp Cys Lys Lys Glu Ile Thr Ile Ile Asn
 595 600 605
 Glu Leu Asn Ser Gln Arg Ile Pro Met Ser Pro Leu Gly Val Trp Lys
 610 615 620
 Ser Pro Gly Ser Lys Gln Lys Asn Pro Val Pro Phe Leu Cys Ile His
 625 630 635 640
 Gly Pro

<210> 6094
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 6094
 Arg Cys Arg Lys Gly Lys Asn Arg Phe Cys Lys Leu Thr Met Ser Ile
 1 5 10 15
 Ile Ile Tyr Leu Leu Ile Thr Met Ala Phe Ser Ala Phe Phe Ser Gly
 20 25 30
 Met Glu Ile Ala Phe Val Ser Val Asp Lys Leu Arg Phe Glu Met Asp
 35 40 45
 Arg Lys Gly Gly Val Ser Ser Arg Ile Leu Ser Leu Phe Phe Arg Asn
 50 55 60
 Pro Asn Asp Phe Ile Ser Thr Met Leu Val Gly Asn Asn Ile Ala Leu
 65 70 75 80
 Val Ile Tyr Gly Ile Leu Met Ala Gln Ile Ile Gly Asp Asn Leu Leu
 85 90 95
 Ala Gly Trp Ile Thr Asn His Phe Val Met Val Leu Val Gln Thr Val
 100 105 110
 Ile Ser Thr Leu Ile Ile Leu Val Thr Gly Glu Phe Leu Pro Lys Thr
 115 120 125
 Leu Phe Lys Ile Asn Pro Asn Leu Ala Leu Asn Val Cys Ala Val Leu
 130 135 140
 Leu Phe Ile Cys Tyr Val Val Leu Tyr Pro Ile Ser Lys Phe Ser Ser
 145 150 155 160
 Gly Val Ser Tyr Leu Phe Leu Arg Leu Phe Gly Met Lys Val Asn Lys
 165 170 175
 Glu Ala Ser Ala Lys Ala Phe Gly Lys Val Asp Leu Asp Tyr Phe Val
 180 185 190
 Gln Ser Ser Ile Asp Asn Ala Glu Ser Glu Glu Thr Leu Asp Thr Glu
 195 200 205
 Val Lys Ile Phe Gln Asn Ala Leu Asp Phe Ser Ala Val Lys Ile Arg
 210 215 220
 Asp Cys Ile Val Pro Arg Thr Glu Val Val Ala Val Ala Leu Asp Thr
 225 230 235 240
 Ser Leu Glu Glu Leu Lys Gly Arg Phe Val Glu Ser Gly Ile Ser Lys


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225          230          235          240
Asp Glu Trp Ser Gln Gly Lys Pro Leu Pro Gly Ser Ile Asn Ala Ser
          245          250          255
Gly Asn Ala Asn Tyr Pro Tyr Val Leu Ser Asp Gly Val Thr Ile Tyr
          260          265          270
Tyr Ala Ser Asp Gly Asp Gly Ser Met Gly Gly Tyr Asp Ile Phe Val
          275          280          285
Thr Arg Tyr Asn Thr Asn Thr Asp Thr Tyr Leu Val Pro Glu Asn Val
          290          295          300
Gly Met Pro Phe Asn Ser Pro Tyr Asn Asp Tyr Met Tyr Val Ile Asp
305          310          315          320
Glu Tyr Asn Asn Leu Gly Trp Phe Ala Ser Asp Arg Tyr Gln Pro Glu
          325          330          335
Asp Lys Val Cys Ile Tyr Val Phe Val Pro Asn Asp Ser Lys Arg Thr
          340          345          350
Tyr Asn Tyr Glu Ala Met Glu Pro Glu Lys Met Ile Glu Leu Ala Gln
          355          360          365
Leu His Ser Leu Glu Ser Thr Trp Lys Asp Ser Lys Ile Val Asp Asp
          370          375          380
Ala Arg Gln Arg Leu Glu Ala Val Ile Asn His Lys Pro Ala Val Glu
385          390          395          400
Gln Asn Phe Asp Phe Glu Phe Ile Ile Asp Asp His Ser Thr Tyr His
          405          410          415
His Leu Thr Asp Phe Lys Ser Pro Lys Ala Lys Gln Leu Tyr Leu Lys
          420          425          430
Tyr Glu Gln Met Glu Lys Asp Tyr Arg Gln Gln Thr Asp Lys Leu Lys
          435          440          445
Ser Gln Arg Glu Gly Phe Ala Arg Ser Asn Lys Asp Glu Gln Ser Lys
          450          455          460
Met Ala Pro Ala Ile Arg Asp Leu Glu Lys Arg Val Leu Gln Met Ser
465          470          475          480
Glu Glu Leu Asp Lys Gln Ala Ile Glu Val Arg Asn Ala Glu Lys Gln
          485          490          495
Asn Leu Lys

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<210> 6096

<211> 183

<212> PRT

<213> B.fragilis

<400> 6096

```

Ser Leu Leu Lys Leu Phe Leu Thr Asn Val Val Leu Glu Thr Thr Asp
1          5          10          15
Ser Asp Lys His Trp Tyr Val Val Leu Thr Arg Thr Asn Ser Glu Arg
          20          25          30
Lys Val Arg Asp Tyr Phe Gln Leu Gln Glu Val Asp Thr Phe Leu Pro
          35          40          45
Val Gln Asn Arg Val Ile Glu Arg Glu Gly Lys Arg Ile Glu Arg Glu
          50          55          60
Arg Leu Leu Leu Pro Arg Met Val Phe Val His Ile Ser Arg Gln Glu
65          70          75          80
Met Ala Ala Val Arg Ser Thr Leu Asn Val Tyr Asp Phe Leu Arg Asp
          85          90          95
Arg Ser Thr Gly Ala Pro Thr Cys Ile Pro Asp Ala Gln Met Ala Asp
          100          105          110
Phe Arg Tyr Met Leu Asp Tyr Ser Gln Asp Gln Val Ile Leu Thr Gly
          115          120          125
Glu Ser Ile Pro Lys Gly Thr Arg Val Val Val Ala Lys Gly Asp Leu

```


130		135		140
Gln Gly Leu Arg Gly	Glu Leu Val Arg Tyr	Asn Asn Lys Tyr His Ile		
145	150	155	160	
Leu Val Arg Ile Asp Met Phe Gly Ser	Ala Met Val Thr Ile Pro Ala			
	165	170	175	
Ser Tyr Val Arg Lys Glu Lys				
180				

<210> 6097

<211> 498

<212> PRT

<213> B.fragilis

<400> 6097

Asp Thr Met Lys Ala Asn Asp Leu Leu Ser Gln Phe Gly Asp His Arg	
1 5 10 15	
Gln Arg Val Gln Ser Ala Ile Thr Ser Val Cys Glu Gly Arg Gly Ile	
20 25 30	
Leu Leu Val Asp Asp Glu Asn Arg Glu Asn Glu Gly Asp Leu Ile Phe	
35 40 45	
Ser Ala Gln Ser Met Thr Glu Thr Asp Met Ala Ile Met Ile Arg His	
50 55 60	
Cys Ser Gly Ile Val Cys Leu Cys Ile Thr Glu Lys Ala Arg Gln	
65 70 75 80	
Leu Asn Leu Pro Leu Met Val Glu Gln Asn Thr Ser Lys Tyr Gly Thr	
85 90 95	
Ala Phe Thr Ile Ser Ile Glu Ala Ala Glu Gly Val Thr Thr Gly Val	
100 105 110	
Ser Ala Ala Asp Arg Ile Gln Thr Ile Arg Thr Ala Ile Ala Pro Asn	
115 120 125	
Ala Thr Pro Glu Ser Leu His His Pro Gly His Ile Phe Pro Leu Ile	
130 135 140	
Ala Arg Ser Gly Gly Ile Lys Glu Arg Ser Gly His Thr Glu Gly Ser	
145 150 155 160	
Ile Asp Leu Met Lys Leu Ala Gly Leu Ala Pro Cys Ala Val Leu Cys	
165 170 175	
Glu Leu Thr Asn Asp Asp Gly Thr Met Ala Arg Leu Pro Glu Ile Ile	
180 185 190	
Glu Phe Gly Leu Glu His Lys Tyr Pro Val Val Thr Ile Asn Asp Leu	
195 200 205	
Lys Glu Tyr Gln Thr Ala Pro Asp Phe Leu Pro Lys Leu Val Gly Ser	
210 215 220	
Phe Ser Cys Pro Ala Ala Glu Asn Pro Thr Thr Ala Ile Met Glu Ala	
225 230 235 240	
Ala Phe Arg His His Tyr Met His Tyr Arg Tyr Ile Asn Cys Glu Val	
245 250 255	
Gly Pro Glu Asn Leu Ala Ala Ala Ile Gln Gly Ala Lys Ala Met Gly	
260 265 270	
Trp Arg Gly Phe Asn Cys Ser Leu Pro Asn Lys Val Glu Ile Ile Arg	
275 280 285	
Tyr Leu Asp Glu Leu Gly Glu Ser Ala Lys Ile Ile Gly Ala Val Asn	
290 295 300	
Thr Val Val Ile Gly Asp Asp Gln Arg Ala Thr Gly Glu Asn Thr Asp	
305 310 315 320	
Gly Lys Gly Phe Val Lys Ala Ile Ser Glu Ile Ile Thr Ile Gln Asp	
325 330 335	
Lys Lys Ile Ala Leu Leu Gly Ala Gly Gly Ala Ala Arg Ala Ile Ala	
340 345 350	
Val Glu Met Ala Leu Ala Gly Val Lys Glu Ile Thr Ile Leu Asn Arg	

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      355              360              365
Asn Arg Asp Lys Gly Gln Ala Leu Ala Asp Leu Leu Asn Ser Gln Thr
 370              375              380
Val Ala Thr Ala Arg Phe Val Leu Trp Asp His Pro Tyr Arg Phe Ser
385              390              395              400
Thr Asp Ile Asp Ile Val Ile Asn Ala Thr Ser Val Gly Leu Tyr Pro
      405              410              415
Asn Val Asp Gln Arg Leu Asp Ile Asp Thr Asp Thr Leu Leu Pro His
      420              425              430
Met Val Val Ala Asp Cys Ile Pro Asn Pro Val Tyr Thr Gln Leu Leu
      435              440              445
Arg Asp Ala Val Arg Arg Gly Cys Cys His Val Leu Pro Gly Met Lys
      450              455              460
Met Leu Val Tyr Gln Ala Val Ile Ala Ile Lys Tyr Trp Ser Gly Val
465              470              475              480
Asp Val Asp Pro Asp Ile Met Leu Glu Lys Leu Lys Glu Val Val Lys
      485              490              495
Pro Ala

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<210> 6098
 <211> 108
 <212> PRT
 <213> B.fragilis

```

<400> 6098
Cys Lys Met Lys Ser Leu Lys Tyr Ile Val Ala Leu Ala Leu Ala Ala
1          5          10          15
Gly Leu Phe Gln Ala Cys Asp Leu Glu Arg Tyr Pro Leu Thr Asp Leu
      20          25          30
Ser Glu Glu Thr Phe Trp Asn Ser Glu Ser Asn Ala Glu Leu Ala Leu
      35          40          45
Thr Ser Leu Tyr Arg Gly Ser Leu Thr Asp Gly Val Glu Tyr Asn Pro
      50          55          60
Ser Asp Trp Trp Ser Tyr His Gly Met Ile Met Met Glu His Leu Ser
65          70          75          80
Asp Asn Ala Phe Asp Arg Arg Gly Glu Asn Asn Pro Phe Phe Lys Ile
      85          90          95
Ser Ser Gly Asn Pro Asp Cys Arg Gln Cys Phe Tyr
      100          105

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<210> 6099
 <211> 306
 <212> PRT
 <213> B.fragilis

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<400> 6099
Phe Val Val Asn Ile Phe Ile Lys Leu Lys Pro Phe Asn Asn Met Lys
1          5          10          15
Lys Tyr Phe Pro Ser Ser Glu Leu Ile Ile Asn Glu Asp Gly Ser Val
      20          25          30
Phe His Leu His Val Lys Pro Glu Trp Leu Ala Asp Lys Val Ile Leu
      35          40          45
Val Gly Asp Pro Gly Arg Val Ala Leu Val Ala Ser His Phe Glu Asn
      50          55          60
Lys Glu Cys Glu Val Glu Ser Arg Glu Phe Lys Thr Val Thr Gly Thr
65          70          75          80
Tyr Lys Gly Lys Arg Ile Thr Val Val Ser Thr Gly Ile Gly Cys Asp
      85          90          95

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Asn Ile Asp Ile Val Val Asn Glu Leu Asp Ala Leu Ala Asn Ile Asp
 100 105 110
 Phe Gln Thr Arg Glu Glu Lys Glu His Leu Arg Ser Leu Glu Leu Val
 115 120 125
 Arg Ile Gly Thr Cys Gly Gly Leu Gln Pro Asn Thr Pro Val Gly Thr
 130 135 140
 Phe Val Cys Ser Glu Lys Ser Ile Gly Phe Asp Gly Leu Leu Asn Phe
 145 150 155 160
 Tyr Ala Gly Arg Asn Ala Val Cys Asp Leu Pro Phe Glu Arg Ala Phe
 165 170 175
 Leu Asn His Met Gly Trp Ser Gly Asn Met Cys Ala Pro Ala Pro Tyr
 180 185 190
 Val Ile Asp Ala Asn Ala Glu Leu Ile Asp Arg Ile Ala Gln Glu Asp
 195 200 205
 Met Val Arg Gly Val Thr Ile Ala Ala Gly Gly Phe Phe Gly Pro Gln
 210 215 220
 Gly Arg Glu Leu Arg Val Pro Leu Ala Asp Pro Lys Gln Asn Asp Lys
 225 230 235 240
 Ile Glu Lys Phe Glu Tyr Lys Gly Tyr Lys Ile Thr Asn Phe Glu Met
 245 250 255
 Glu Ser Ser Ala Leu Ala Gly Leu Ser Lys Leu Met Gly His Lys Ala
 260 265 270
 Met Thr Val Cys Met Val Ile Ala Asn Arg Leu Ile Lys Glu Ala Asn
 275 280 285
 Thr Gly Tyr Lys Asn Thr Ile Asp Thr Leu Ile Lys Thr Val Leu Asp
 290 295 300
 Arg Ile
 305

<210> 6100

<211> 386

<212> PRT

<213> B.fragilis

<400> 6100

Asp Lys Lys Lys Met Asn Ile Val Phe Val Gly Leu Ser Gly Val Pro
 1 5 10 15
 Tyr Ala Arg Arg Ala Ile Asp Thr Arg Leu Leu Ser Phe Ala Asn Leu
 20 25 30
 Phe Thr Ser Ser Asn His Asp Val Ile Leu Asn Arg Tyr Ser Ala
 35 40 45
 Leu Lys Pro Asn Trp Glu Tyr Asp Ala Gln Phe Ile Asp Asp Arg Val
 50 55 60
 Ser Val Ile Glu Leu Cys Asn Leu Lys Gly Ile Pro Lys Cys Met Ser
 65 70 75 80
 Lys Phe Leu Leu Ile Tyr Thr Ile Ile Ile Glu Phe Trp Lys Leu Ile
 85 90 95
 Phe Leu Asn Lys Lys Lys Lys Ile Asp Val Leu His Val Ala Ser Gly
 100 105 110
 His Phe Ile Asp Ile Phe Tyr Tyr Val Ile Ile Ala Arg Cys Ile Gly
 115 120 125
 Ala Lys Val Val Tyr His Tyr Cys Glu Tyr Arg Ser Phe Lys Ser
 130 135 140
 Arg Asn Val Tyr His Arg Ile Asn Gly Lys Leu Ile Asn Cys Tyr Ala
 145 150 155 160
 Pro Lys Phe Trp Asp Gly Ala Ile Cys Ile Ser His Phe Leu Val Ser
 165 170 175
 Lys Thr Lys Glu Val Asn Lys Phe Ile Lys Ile Ile Gln Ile Pro Pro
 180 185 190

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Ile Cys Asp Tyr Asp Tyr Phe Asp His Ile Ile Cys Glu Lys Glu Ala
  195                200                205
Ser Pro Tyr Leu Leu Phe Cys Gly Tyr Thr Ser Tyr Ser Glu Ile Ile
  210                215                220
Tyr Met Ile Ile Asp Ala Tyr Asn Lys Ser Arg Ile Lys Glu Val Ala
  225                230                235                240
Ser Leu Lys Met Val Ile Asn Gly Asn Pro Val Val Ile Ser Glu Ile
                245                250                255
Arg Arg Tyr Cys Pro Lys Met Glu Ile Leu Gln Asn Leu Lys Tyr Thr
                260                265                270
Asp Leu Ile Ser Met Phe Lys Gly Ala Leu Ala Leu Phe Ile Pro Leu
  275                280                285
Arg Asn Thr Ile Gln Asp Ile Ala Arg Phe Pro Asn Lys Ile Cys Glu
  290                295                300
Tyr Thr Ala Cys His Gly Val Val Val Thr Thr Arg Tyr Gly Glu Ile
  305                310                315                320
Pro Tyr Tyr Phe Glu Asp Lys Ile Asn Ala Leu Ile Ala Asp Asp Phe
                325                330                335
Asn Val Ala Ser Ile Ala Glu Gln Leu Asp Trp Leu Tyr Asp Asn Met
                340                345                350
Asp Gln Thr Ala Arg Ile Lys Lys Asn Ser Tyr Leu Leu Gly Arg Arg
  355                360                365
Val Phe Asn Leu Ile Ser Tyr Lys Asp Ser Val Thr Glu Phe Leu Lys
  370                375                380
Glu Leu
  385

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<210> 6101
<211> 69
<212> PRT
<213> B.fragilis

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<400> 6101
Lys Ala Asn Glu Ser Ala Ala Glu Ala Ile Asn Phe Ile Thr Pro Ala
  1          5          10          15
Thr Lys Lys Pro Met Thr Lys Val Ser Pro Ile Met Ala Lys Val Asp
                20                25                30
Asn Asn Lys Leu Asn Ile Thr Gln Tyr Asp Phe Arg Leu Lys Asn Lys
  35          40          45
Met Gln Cys Ile Pro Thr Ala Gly Lys Tyr Lys Thr His Leu Pro Gly
  50          55          60
Ile Tyr Arg Asn Gly
  65

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<210> 6102
<211> 300
<212> PRT
<213> B.fragilis

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<400> 6102
Ile Met Ile Glu Gln Pro Ser Pro Lys Val Tyr Asp Glu Leu Leu Ser
  1          5          10          15
Ile Trp Glu Glu Ala Val Arg Ser Thr His His Phe Leu Thr Glu Ala
  20          25          30
Asp Ile Gln Phe Tyr Lys Pro Leu Ile Arg His Glu Tyr Leu Ala Ala
  35          40          45
Val Arg Leu Tyr Ile Ile Arg Glu Asp Ser Gly Thr Ile Ala Ala Phe
  50          55          60
Met Gly Leu Ser Asn Asp Cys Ile Glu Met Leu Phe Val Arg Pro Asn

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65		70		75		80									
Ala	His	Gly	His	Gly	Tyr	Gly	Ser	Arg	Leu	Val	Glu	Phe	Ala	Ile	Arg
		85							90					95	
Lys	Lys	Arg	Ile	Tyr	Lys	Val	Asp	Val	Asn	Glu	Gln	Asn	Ala	Ala	Ala
		100						105					110		
Leu	Gly	Phe	Tyr	Leu	His	Met	Gly	Phe	Glu	Thr	Thr	Gly	Arg	Asp	Ala
		115					120					125			
Leu	Asp	Ala	Thr	Gly	Lys	Ser	Phe	Pro	Ile	Leu	His	Leu	Gln	Ile	Pro
	130					135					140				
Pro	Ile	Arg	Leu	Arg	Lys	Ala	Thr	Leu	Glu	Asp	Ile	Asp	Leu	Leu	Arg
	145				150					155				160	
Thr	Leu	Phe	Thr	Gln	Ser	Val	Gln	Asn	Thr	Cys	Ser	Ala	Asp	Tyr	Asn
			165					170					175		
Arg	Leu	Gln	Ile	Gln	Ala	Trp	Thr	Gly	Arg	Gly	Thr	Leu	Gln	Arg	Trp
		180						185					190		
His	Glu	Leu	Phe	Gln	Ser	Asp	Leu	Tyr	Phe	Leu	Leu	Ala	Glu	Asp	Ser
	195					200						205			
Arg	Lys	Ser	Gln	Val	Ala	Gly	Phe	Thr	Ser	Val	Asn	Ser	Lys	Gly	Tyr
	210					215					220				
Leu	His	Ser	Met	Phe	Val	His	Pro	Asp	Tyr	Gln	Arg	Gln	Gly	Ile	Ala
	225				230					235				240	
Ser	Arg	Leu	Leu	Leu	Lys	Ala	Glu	Glu	Tyr	Val	Arg	Ile	Arg	Gln	Gly
			245					250					255		
Val	Ser	Val	Tyr	Ser	Glu	Val	Ser	Ile	Thr	Ala	Arg	Pro	Phe	Phe	Glu
		260						265					270		
Lys	His	Gly	Tyr	Ser	Ile	Glu	Lys	Glu	Gln	Thr	Val	Ser	Val	Gly	Asp
		275					280					285			
Ile	Glu	Met	Thr	Asn	Phe	Leu	Met	Tyr	Lys	Arg	Ile				
	290					295					300				

<210> 6103

<211> 63

<212> PRT

<213> B.fragilis

<400> 6103

Glu	Trp	Ser	Glu	Cys	Glu	Arg	Ser	Phe	Met	Arg	Leu	Phe	Asn	Arg	Ile
1			5						10					15	
Gln	Ala	Ser	Ile	His	Asp	Ile	Tyr	Trp	Glu	Asn	Gln	Cys	Thr	Asp	His
		20						25					30		
Leu	Met	Thr	Asp	Glu	Leu	Arg	Arg	Glu	Glu	Gly	Glu	Pro	Leu	Leu	Leu
		35				40						45			
Ser	Val	Ala	Asp	Val	Met	Glu	Ile	Leu	Val	Arg	Lys	Ile	Leu	Lys	
	50					55					60				

<210> 6104

<211> 434

<212> PRT

<213> B.fragilis

<400> 6104

Lys	Thr	Arg	Glu	Thr	Met	Lys	Ile	Glu	Lys	Ile	Thr	Gly	Arg	Glu	Ile
1			5						10					15	
Leu	Asp	Ser	Arg	Gly	Asn	Pro	Thr	Val	Glu	Val	Asp	Val	Val	Leu	Glu
		20						25					30		
Ser	Gly	Ile	Met	Gly	Arg	Ala	Ser	Val	Pro	Ser	Gly	Ala	Ser	Thr	Gly
		35				40						45			
Glu	His	Glu	Ala	Leu	Glu	Leu	Arg	Asp	Gly	Asp	Lys	His	Arg	Tyr	Gly
	50					55					60				

Gly Lys Gly Val Gln Lys Ala Val Glu Asn Val Asn Lys Val Ile Ala
 65 70 75 80
 Pro His Leu Ile Gly Met Ser Ala Leu Asp Gln Ile Gly Ile Asp His
 85 90 95
 Ala Met Leu Ala Leu Asp Gly Thr Lys Thr Lys Ala Lys Leu Gly Ala
 100 105 110
 Asn Ala Ile Leu Gly Val Ser Leu Ala Val Ala Lys Ala Ala Ala Asn
 115 120 125
 Tyr Leu Asp Ile Pro Leu Tyr Arg Tyr Ile Gly Gly Thr Asn Thr Tyr
 130 135 140
 Val Leu Pro Val Pro Met Met Asn Ile Ile Asn Gly Gly Ser His Ser
 145 150 155 160
 Asp Ala Pro Ile Ala Phe Gln Glu Phe Met Ile Arg Pro Val Gly Ala
 165 170 175
 Ser Ser Phe Lys Glu Gly Leu Arg Met Gly Ala Glu Val Phe His Ala
 180 185 190
 Leu Lys Lys Val Leu Lys Asp Arg Gly Leu Ser Thr Ala Val Gly Asp
 195 200 205
 Glu Gly Gly Phe Ala Pro Asn Leu Glu Gly Thr Glu Asp Ala Leu Asn
 210 215 220
 Ser Ile Leu Ala Ala Ile Lys Ala Ala Gly Tyr Glu Pro Gly Lys Asp
 225 230 235 240
 Val Met Ile Gly Met Asp Cys Ala Ser Ser Glu Phe Tyr His Asp Gly
 245 250 255
 Ile Tyr Asp Tyr Thr Lys Phe Glu Gly Glu Lys Gly Lys Lys Arg Thr
 260 265 270
 Ala Asp Glu Gln Ile Asp Tyr Leu Glu Lys Leu Ile Asn Glu Tyr Pro
 275 280 285
 Ile Asp Ser Ile Glu Asp Gly Met Ser Glu Asn Asp Trp Glu Gly Trp
 290 295 300
 Lys Lys Leu Thr Gln Arg Ile Gly Asp Arg Cys Gln Leu Val Gly Asp
 305 310 315 320
 Asp Leu Phe Val Thr Asn Val Asp Phe Leu Ala Lys Gly Ile Glu Lys
 325 330 335
 Gly Cys Ala Asn Ser Ile Leu Ile Lys Val Asn Gln Ile Gly Ser Leu
 340 345 350
 Thr Glu Thr Leu Asn Ala Ile Glu Met Ala His Arg His Gly Tyr Thr
 355 360 365
 Thr Val Thr Ser His Arg Ser Gly Glu Thr Glu Asp Ala Thr Ile Ala
 370 375 380
 Asp Ile Ala Val Ala Thr Asn Ser Gly Gln Ile Lys Thr Gly Ser Leu
 385 390 395 400
 Ser Arg Ser Asp Arg Met Ala Lys Tyr Asn Gln Leu Leu Arg Ile Glu
 405 410 415
 Glu Glu Leu Gly Asp Arg Ala Val Tyr Gly Tyr Lys Arg Ile Val Val
 420 425 430
 Lys Gly

<210> 6105

<211> 180

<212> PRT

<213> B.fragilis

<400> 6105

Pro Val Met Asp Thr Ile Gln Ile Lys Asp Lys Leu Phe Thr Val Ser
 1 5 10 15
 Ile Arg Glu Gln Glu Ile Gln Lys Glu Val Ile Arg Val Ala Asn Glu
 20 25 30

Ile Asn Arg Asp Leu Ala Gly Lys Asn Pro Leu Phe Leu Ser Val Leu
 35 40 45
 Asn Gly Ser Phe Met Phe Thr Ala Asp Leu Leu Lys His Ile Thr Ile
 50 55 60
 Pro Cys Glu Ile Ser Phe Val Lys Leu Ala Ser Tyr Gln Gly Val Ser
 65 70 75 80
 Ser Thr Gly Ser Ile Lys Glu Val Ile Gly Ile Asn Glu Asp Ile Ala
 85 90 95
 Gly Arg Thr Ile Val Ile Val Glu Asp Ile Val Asp Thr Gly Leu Thr
 100 105 110
 Met Gln Arg Leu Leu Glu Thr Leu Gly Thr Arg Gly Pro Lys Glu Ile
 115 120 125
 His Ile Ala Ser Leu Leu Val Lys Pro Asp Lys Leu Lys Val Asp Leu
 130 135 140
 Asn Ile Glu Tyr Val Ala Met Asn Ile Pro Asn Asp Phe Ile Val Gly
 145 150 155 160
 Tyr Gly Leu Asp Tyr Asp Gly Phe Gly Arg Asn Tyr Pro Asp Ile Tyr
 165 170 175
 Thr Val Val Asp
 180

<210> 6106
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 6106
 Gln Thr Met Asp Val Leu Ile Ile Ile Ala Leu Ile Ala Ala Ala Val
 1 5 10 15
 Ile Leu Phe Leu Val Glu Leu Phe Val Ile Pro Gly Ile Ser Leu Ala
 20 25 30
 Gly Ile Ser Ala Leu Val Cys Ile Ile Tyr Ala Asn Tyr Tyr Ala Phe
 35 40 45
 Ala Asn Leu Gly Thr Gly Ala Gly Phe Ile Thr Leu Ile Ile Ser Gly
 50 55 60
 Ile Ala Cys Ile Gly Ser Leu Val Trp Phe Met Arg Ser Lys Thr Leu
 65 70 75 80
 Asp Lys Leu Ala Leu Lys Lys Asp Ile Thr Ser Lys Ile Asp Arg Ser
 85 90 95
 Ala Ala Glu Lys Val Lys Val Gly Asp Thr Gly Ile Thr Ile Thr Arg
 100 105 110
 Leu Ala Gln Ile Gly Asn Ala Glu Ile Asn Gly Asn Ile Ile Glu Val
 115 120 125
 Lys Ser Met Asp Gly Leu Leu Asn Glu Lys Thr Pro Ile Val Val Asn
 130 135 140
 Arg Ile Thr Asp Gly Ile Ile Phe Val Glu Lys Leu Lys Ser
 145 150 155

<210> 6107
 <211> 175
 <212> PRT
 <213> B.fragilis

<400> 6107
 Lys Asn Met Asp Trp Asn Lys Lys Ile Met Arg Ile Ser Leu Leu Val
 1 5 10 15
 Phe Thr Leu Val Val Gly Ile Ser Cys Thr Val Ser Tyr Lys Phe Asn
 20 25 30
 Gly Gly Asn Ile Asn Tyr Asp Lys Val Lys Thr Ile Ser Ile Ala Asp

	35					40				45					
Phe	Pro	Ile	Lys	Ser	Asp	Tyr	Val	Tyr	Ala	Pro	Leu	Gly	Thr	Lys	Phe
	50					55					60				
Asn	Glu	Asp	Leu	Lys	Asp	Ile	Phe	Leu	Arg	Gln	Thr	Arg	Leu	Lys	Leu
65					70					75					80
Val	Asn	Asn	Asn	Ala	Asp	Leu	Glu	Ile	Asp	Gly	Glu	Ile	Thr	Gly	Tyr
				85					90					95	
Asn	Gln	Tyr	Asn	Gln	Ala	Val	Ser	Ala	Asp	Gly	Tyr	Ser	Ser	Glu	Thr
			100					105					110		
Lys	Leu	Thr	Ile	Thr	Val	Asn	Val	Arg	Phe	Val	Asn	Asn	Thr	Asn	His
		115						120					125		
Glu	Gln	Asp	Phe	Glu	Gln	Gln	Phe	Ser	Ala	Phe	Arg	Val	Tyr	Asp	Ser
	130						135				140				
Arg	Glu	Leu	Leu	Thr	Ala	Val	Gln	Asp	Gly	Leu	Ile	Ala	Glu	Met	Thr
145					150					155					160
Lys	Glu	Ile	Thr	Asp	Gln	Ile	Phe	Asn	Ala	Thr	Val	Ala	Asn	Trp	
				165					170					175	

<210> 6108

<211> 355

<212> PRT

<213> B.fragilis

<400> 6108

Asn	Lys	Pro	Glu	Met	Lys	Lys	Leu	Ile	Ile	Leu	Thr	Gly	Leu	Leu	Leu
1				5					10					15	
Ser	Thr	Ser	Ala	Tyr	Ala	Gln	Thr	Glu	Val	Thr	Ala	Gly	Val	Thr	Arg
			20					25					30		
Gly	Lys	Asp	Tyr	Gly	Val	Thr	Tyr	Ala	Leu	Pro	Lys	Thr	Ala	Ile	Asn
	35						40					45			
Ile	Glu	Val	Lys	Val	Asn	Lys	Val	Thr	Tyr	Thr	Pro	Gly	Glu	Phe	Ser
	50					55					60				
Lys	Tyr	Ala	Asp	Arg	Tyr	Leu	Arg	Leu	Thr	Asp	Val	Ser	Gly	Glu	Pro
65				70					75						80
Gln	Glu	Tyr	Trp	Glu	Leu	Val	Ser	Val	Lys	Ala	Lys	Ser	Val	Gly	Ile
			85					90						95	
Pro	Asp	Ser	Glu	His	Thr	Tyr	Phe	Val	Lys	Leu	Lys	Asp	Lys	Thr	Val
			100				105						110		
Ala	Pro	Leu	Ile	Glu	Leu	Thr	Glu	Asp	Gly	Ile	Val	Lys	Ser	Ile	Asn
	115						120						125		
Val	Pro	Leu	Ser	Pro	Lys	Lys	Ser	Ala	Pro	Met	Gln	Pro	Ala	Thr	Thr
	130					135					140				
Gln	Lys	Lys	Lys	Ile	Asn	Pro	Arg	Asp	Phe	Leu	Thr	Glu	Glu	Ile	Leu
145					150					155					160
Met	Ala	Gly	Ser	Thr	Ala	Lys	Met	Ala	Glu	Leu	Val	Ala	Lys	Glu	Ile
				165					170					175	
Tyr	Asn	Ile	Arg	Glu	Ser	Lys	Asn	Ala	Leu	Val	Arg	Gly	Gln	Ala	Asp
			180					185					190		
Asn	Met	Pro	Lys	Asp	Gly	Glu	Gln	Leu	Lys	Ile	Met	Leu	Ala	Asn	Leu
	195						200					205			
Glu	Glu	Gln	Glu	Ala	Ala	Met	Thr	Glu	Met	Phe	Ser	Gly	Thr	Leu	Asn
	210					215						220			
Lys	Asp	Glu	Lys	Ile	Phe	Asn	Ile	Arg	Leu	Thr	Pro	Asp	Lys	Glu	Met
225					230					235					240
Asp	Asn	Glu	Val	Ala	Phe	Arg	Phe	Ser	Lys	Lys	Leu	Gly	Ile	Val	Ala
			245						250					255	
Asn	Asn	Asp	Leu	Ala	Gly	Glu	Pro	Val	Tyr	Ile	Thr	Leu	Lys	Asn	Leu
			260					265					270		
Lys	Thr	Val	Asn	Val	Pro	Glu	Asp	Asp	Gly	Lys	Lys	Lys	Val	Asp	Gly

275	280	285
Ile Ala Tyr Asn Val Pro Gly Lys Ala Gln Val Thr Leu Thr Glu Gly		
290	295	300
Lys Lys Gln Trp Phe Asn Gly Glu Leu Pro Val Thr Gln Phe Gly Thr		
305	310	315
Ile Glu Tyr Leu Ala Pro Ala Leu Phe Asn Lys Lys Ser Thr Val Gln		
	325	330
Val Thr Phe Asn Pro Asp Thr Gly Gly Leu Ile Lys Val Asp Arg Glu		
	340	345
Glu Gly Glu		350
355		

<210> 6109

<211> 1017

<212> PRT

<213> B.fragilis

<400> 6109

Thr Glu Lys Glu Asp Thr Glu Met Lys Leu Lys Phe Lys His Gln Lys		
1	5	10
Phe Gln Glu Asp Ala Ala Lys Ala Val Cys Asp Val Phe Gly Gly Gln		
	20	25
Pro Tyr Lys Thr Phe Asp Tyr Gln Val Glu Thr Arg Lys Lys Asp Gly		
	35	40
Gln Thr Ser Phe Glu Lys Phe Thr Gly Phe Arg Asn His Pro Ile Val		
	50	55
Pro Gln Leu Thr Asp Glu Ile Val Leu Lys His Ile Arg Asp Ile Gln		
65	70	75
Arg Ala Gln Gln Ile Lys Pro Ser Glu Ala Leu Glu Gly Lys Tyr Asn		
	85	90
Leu Thr Ile Glu Met Glu Thr Gly Val Gly Lys Thr Tyr Thr Tyr Ile		
	100	105
Lys Thr Ile Phe Glu Leu Asn Lys Arg Tyr Gly Trp Cys Lys Phe Ile		
	115	120
Ile Val Val Pro Ser Val Ala Ile Arg Glu Gly Val His Lys Ser Leu		
	130	135
Glu Ile Met Lys Glu His Phe Ala Ser Asp Tyr Ser Thr Pro Leu Ser		
145	150	155
Tyr Phe Ile Tyr Asp Ser Lys Gln Leu Gly Glu Leu Asn Ala Phe Val		
	165	170
Thr Asp Ser Lys Ile His Val Met Ile Ile Asn Ser Gln Lys Phe Asn		
	180	185
Ala Thr Asn Lys Asp Ala Arg Arg Ile Tyr Met Lys Leu Asp Asp Phe		
	195	200
Gly Gly Asn Cys Pro Ile Asp Val Ile Ala Gln Met Asn Pro Ile Leu		
	210	215
Ile Ile Asp Glu Pro Gln Ser Val Glu Gly Ala Lys Thr Lys Glu Gly		
225	230	235
Leu Lys Arg Phe Asn Pro Leu Phe Thr Leu Arg Tyr Ser Ala Thr His		
	245	250
Arg Glu Leu Tyr Asn Leu Val Tyr Arg Leu Asp Ala Met Glu Ala Tyr		
	260	265
Asn Leu Gln Leu Val Lys Lys Ile Ala Val Lys Gly Ile Ser Ile Ser		
	275	280
Gly Thr Thr Ala Thr Glu Gly Phe Val Tyr Leu Glu Gly Leu Asn Leu		
	290	295
Tyr Pro Asp Lys Asn Pro Thr Ala Asn Ile Gly Phe Glu Ile Lys Arg		
305	310	315
Thr Lys Ala Val Asn Gln Val Val Arg Ala Leu Lys Ile Asn Asp Asp		

							325						330						335			
Leu	Tyr	Ala	Lys	Ser	Asn	His	Leu	Glu	Glu	Tyr	Arg	Asn	Asp	Tyr	Val							
			340							345				350								
Ile	Thr	Asp	Ile	Asn	Gly	Val	Glu	Asp	Ser	Val	Thr	Phe	Arg	Asn	Gly							
			355				360							365								
Ile	Lys	Leu	Tyr	Ala	Gly	Asp	Val	Ala	Gly	Ser	Val	Asn	Glu	Thr	Gln							
			370				375							380								
Leu	Arg	Arg	Ile	Gln	Ile	Arg	Glu	Thr	Ile	Leu	Ser	His	Ile	Glu	Lys							
385							390							395				400				
Glu	Gln	Glu	Leu	Phe	Glu	Lys	Asp	Ile	Lys	Val	Leu	Ser	Leu	Phe	Phe							
			405							410							415					
Ile	Asp	Glu	Val	Ala	Lys	Tyr	Arg	Arg	Tyr	Asn	Pro	Asp	Gly	Lys	Gly							
			420				425							430								
Glu	Tyr	Ala	Glu	Ile	Phe	Glu	Gln	Glu	Tyr	Thr	Asp	Ile	Ile	Lys	His							
			435				440							445								
Leu	Asp	Pro	Ser	Leu	Phe	Asn	Gln	Pro	Glu	Tyr	Ile	Asp	Tyr	Leu	Lys							
			450				455							460								
Ser	Thr	Val	Ala	Ser	Lys	Ala	His	Glu	Gly	Tyr	Phe	Ser	Lys	Asp	Lys							
465							470							475				480				
Lys	Gly	Lys	Leu	Ile	Asp	Ser	Lys	Thr	Glu	Arg	Gly	Thr	Lys	Glu	Ser							
			485							490							495					
Ala	Asp	Glu	Asp	Ala	Tyr	Asp	Leu	Ile	Met	Lys	Asn	Lys	Glu	Arg	Leu							
			500							505							510					
Leu	Asp	Arg	Lys	Glu	Pro	Ile	Arg	Phe	Ile	Phe	Ser	His	Ser	Ala	Leu							
			515				520							525								
Arg	Glu	Gly	Trp	Asp	Asn	Pro	Asn	Val	Phe	Gln	Ile	Cys	Thr	Leu	Lys							
			530				535							540								
Gln	Ser	Ser	Ala	Glu	Val	Arg	Lys	Arg	Gln	Glu	Val	Gly	Arg	Gly	Leu							
545							550							555				560				
Arg	Leu	Cys	Val	Asn	Gly	Gln	Gly	Asp	Arg	Met	Asp	Ala	Asn	Val	Leu							
			565							570							575					
Gly	Glu	Glu	Val	His	Arg	Val	Asn	Leu	Leu	Thr	Val	Ile	Ala	Ser	Glu							
			580							585							590					
Ser	Tyr	Glu	Ser	Phe	Ala	Lys	Gly	Leu	Gln	Thr	Glu	Met	Ala	Glu	Ala							
			595				600							605								
Ile	Ala	Asp	Arg	Pro	Gln	Lys	Val	Thr	Ile	Gln	Leu	Phe	Lys	Asp	Gln							
			610				615							620								
Ser	Leu	Arg	Leu	Ala	Asn	Gly	Glu	Thr	Ile	Ile	Ala	Thr	Glu	Asp	Ile							
625							630							635				640				
Al																						

Ala Asn Asp Gln Val Lys Tyr Asp Leu Leu Gly Lys Leu Thr Asp Ala
805 810 815
Thr Asn Leu Thr Arg Gln Ala Val Ala Gln Ile Leu Ser Arg Ile Lys
820 825 830
Pro Asn Val Phe Gly Gln Phe Lys Asn Asn Pro Glu Asp Phe Ile Ile
835 840 845
Lys Ala Ser Glu Leu Ile Asn Glu Glu Lys Ala Cys Leu Ile Val Lys
850 855 860
His Ile Glu Tyr Thr Pro Ile Asp Gln Tyr Tyr Asp Val Ser Val Phe
865 870 875 880
Thr Arg Ala Thr Ile Gln Gly Arg Leu Gly Val Asn Thr Ile Lys Ala
885 890 895
Asp Lys His Leu Tyr Asp His Val Arg Phe Asp Ser Gln Asn Glu Lys
900 905 910
Thr Phe Met Glu Arg Leu Glu Glu Asn Asp Glu Ile Glu Ala Tyr Val
915 920 925
Lys Leu Pro Gly Asn Phe Tyr Ile Pro Thr Pro Met Gly Lys Tyr His
930 935 940
Pro Asp Trp Ala Ile Val Phe Lys Gln Lys Leu Ser Lys Tyr Pro Tyr
945 950 955 960
Phe Ile Ala Glu Thr Lys Ala Ser Asp Ser Ser Leu Gln Asp Arg Arg
965 970 975
Ile Glu Glu Ala Lys Ile Glu Cys Ala Lys Lys His Phe Ala Lys Thr
980 985 990
Asn Gly Gly Lys Leu Lys Tyr Asn Lys Val Ser Ser Phe Glu Glu Leu
995 1000 1005
Leu Lys Ile Val Thr Gln Glu Ser Val
1010 1015

<210> 6110

<211> 416

<212> PRT

<213> B.fragilis

<400> 6110

Ser Gly Arg Glu Phe Ser Ala Asn Met Thr Lys Ala Glu Ile Gln Gln
1 5 10 15
Val Lys Leu Arg Phe Gly Ile Ile Gly Asn Thr Glu Ala Leu Thr Arg
20 25 30
Ala Ile Asp Val Ala Ile Gln Val Ala Pro Thr Asp Leu Ser Val Leu
35 40 45
Ile Thr Gly Glu Ser Gly Val Gly Lys Glu Ser Phe Pro Gln Ile Ile
50 55 60
His Gln Tyr Ser Arg Arg Lys His Gly Gln Tyr Ile Ala Val Asn Cys
65 70 75 80
Gly Ala Ile Pro Glu Gly Thr Ile Asp Ser Glu Leu Phe Gly His Glu
85 90 95
Lys Gly Ala Phe Thr Gly Ala Ile Gly Glu Arg Lys Gly Tyr Phe Gly
100 105 110
Glu Ala Asp Gly Gly Thr Ile Phe Leu Asp Glu Val Gly Glu Leu Pro
115 120 125
Leu Pro Thr Gln Ala Arg Leu Leu Arg Val Leu Glu Ser Gly Glu Phe
130 135 140
Ile Lys Val Gly Ser Ser Lys Val Gln Lys Thr Asp Val Arg Ile Val
145 150 155 160
Ala Ala Thr Asn Val Asn Leu Thr Gln Ala Ile Ala Glu Gly Arg Phe
165 170 175
Arg Glu Asp Leu Tyr Tyr Arg Leu Asn Thr Val Pro Ile Gln Ile Pro
180 185 190

Pro Leu Arg Glu Arg Gly Glu Asp Val Leu Leu Leu Phe Arg Lys Phe
 195 200 205
 Ala Ser Asp Phe Ala Glu Lys Tyr Arg Met Pro Ala Ile Gln Leu Thr
 210 215 220
 Glu Asp Ala Lys Arg Val Leu Leu Ser Tyr Ser Trp Pro Gly Asn Val
 225 230 235 240
 Arg Gln Leu Lys Asn Ile Thr Glu Gln Ile Ser Ile Ile Glu Thr Asn
 245 250 255
 Arg Glu Ile Asn Ala Pro Ile Leu Gln Ser Tyr Leu Pro Ala Gln Ser
 260 265 270
 Thr Gln Arg Leu Pro Ala Leu Phe Gly Val Lys Thr Gly Lys Ser Phe
 275 280 285
 Glu Ser Glu Arg Glu Ile Leu Tyr Gln Val Leu Phe Asp Met Arg Gln
 290 295 300
 Asp Val Thr Glu Leu Lys Lys Leu Val His Glu Ile Met Ser Glu Arg
 305 310 315 320
 Gly Ala Val Thr Ser Asn Val Gly Thr Phe Tyr Thr Pro Ala Pro Val
 325 330 335
 Val Ala Pro Thr Pro Ser Val Pro Ala Ile Ile His Pro Val Lys Pro
 340 345 350
 Asn Cys Pro Asp Asp Asp Asp Ile Gln Asp Thr Glu Glu Tyr Val Glu
 355 360 365
 Glu Ser Leu Ser Leu Asp Glu Val Glu Lys Glu Met Ile Arg Lys Ala
 370 375 380
 Leu Glu Lys His His Gly Lys Arg Lys Ser Ala Ala Lys Asp Leu Asn
 385 390 395 400
 Ile Ser Glu Arg Thr Leu Tyr Arg Lys Ile Lys Glu Tyr Gly Leu Glu
 405 410 415

<210> 6111

<211> 469

<212> PRT

<213> B.fragilis

<400> 6111

Phe Leu Ser Leu Asn Ile Thr Met Thr Glu Gln Leu Lys Asn Lys Leu
 1 5 10 15
 Ser Asp Ser Lys Thr Leu Arg Trp Ser Val Leu Ala Leu Val Ala Phe
 20 25 30
 Thr Met Leu Cys Gly Tyr Phe Leu Thr Asp Val Met Ser Pro Leu Lys
 35 40 45
 Pro Met Leu Glu Lys Glu Leu Leu Trp Asp Ser Leu Asp Tyr Gly Phe
 50 55 60
 Phe Thr Ser Ala Tyr Gly Trp Phe Asn Val Phe Leu Leu Met Leu Ile
 65 70 75 80
 Phe Gly Gly Ile Ile Leu Asp Lys Met Gly Val Arg Phe Thr Gly Met
 85 90 95
 Gly Ala Cys Ile Leu Met Val Leu Gly Cys Gly Leu Lys Tyr Tyr Ala
 100 105 110
 Ile Ser Thr Thr Phe Pro Glu Gly Ala Leu Ile Met Gly Phe Lys Thr
 115 120 125
 Gln Val Phe Leu Ala Ala Leu Gly Tyr Ala Ile Phe Gly Val Gly Val
 130 135 140
 Glu Ile Ala Gly Ile Thr Val Ser Lys Ile Ile Val Lys Trp Phe Lys
 145 150 155 160
 Gly Lys Glu Met Ala Leu Ala Met Gly Leu Glu Met Ala Thr Ala Arg
 165 170 175
 Ile Gly Thr Thr Leu Ala Met Val Leu Thr Val Pro Ile Ala Asp Tyr
 180 185 190

Phe Gly Tyr Thr Asp Glu Ser Gly Ser Phe His Thr Asn Ile Pro Met
 195 200 205
 Pro Ile Leu Leu Cys Leu Ile Met Leu Cys Ile Gly Thr Ile Ala Phe
 210 215 220
 Phe Ile Tyr Thr Phe Tyr Asp Lys Lys Leu Asp Ala Ser Leu Asp Ala
 225 230 235 240
 Gln Gly Glu Glu Pro Glu Glu Pro Phe Arg Met Lys Asp Val Met Leu
 245 250 255
 Ile Val Thr Asn Lys Gly Phe Trp Leu Ile Ala Leu Leu Cys Val Leu
 260 265 270
 Phe Tyr Ser Ala Val Phe Pro Phe Ile Lys Tyr Ala Thr Asp Leu Met
 275 280 285
 Val Gln Lys Tyr Asn Val Asp Pro Lys Leu Ala Gly Asn Ile Pro Gly
 290 295 300
 Leu Leu Pro Ile Gly Thr Ile Phe Leu Thr Pro Leu Phe Gly Thr Leu
 305 310 315 320
 Tyr Asp Arg Ile Gly Lys Gly Ala Thr Leu Met Ile Ile Gly Ala Val
 325 330 335
 Met Leu Ile Gly Val His Thr Leu Phe Ala Leu Pro Ile Leu Asn Val
 340 345 350
 Trp Trp Phe Ala Thr Val Ile Met Ile Val Leu Gly Ile Ala Phe Ser
 355 360 365
 Leu Val Pro Ser Ala Met Trp Pro Ser Val Pro Lys Ile Ile Pro Glu
 370 375 380
 Lys Gln Leu Gly Thr Ala Tyr Ala Leu Ile Phe Trp Val Gln Asn Trp
 385 390 395 400
 Gly Leu Met Gly Val Pro Leu Leu Ile Gly Trp Val Leu Asn Thr Tyr
 405 410 415
 Cys Lys Gly Pro Val Val Asp Gly Ala Gln Thr Tyr Asp Tyr Thr Leu
 420 425 430
 Pro Met Ala Ile Phe Ala Cys Phe Gly Val Leu Ala Leu Ile Val Ala
 435 440 445
 Leu Met Leu Lys Ala Glu Asp Lys Lys Lys Gly Tyr Gly Leu Gln Glu
 450 455 460
 Ala Asn Ile Lys Lys
 465

<210> 6112

<211> 270

<212> PRT

<213> B.fragilis

<400> 6112

Met Ile Ser Leu Thr Asp Asp Arg Lys Met Leu Gly Tyr Gly Leu Leu
 1 5 10 15
 Gly Ala Tyr Pro Asn Ile Ser His Phe Val Thr Thr Arg His Gly Gly
 20 25 30
 Tyr Ser Glu Gly Ala Tyr Ala Ser Phe Asn Cys Ser Pro Phe Ser Gly
 35 40 45
 Asp Glu Leu Glu Arg Val Glu Lys Asn Gln Thr Leu Leu Phe Gln Ser
 50 55 60
 Leu Ser Gln Ala Pro Arg His Leu Ile Ile Pro Phe Gln Thr His Gly
 65 70 75 80
 Thr Lys Ile Leu Pro Val Asp Glu Lys Phe Leu Gly Ala Ser Gly Gln
 85 90 95
 Gln Gln Gln Glu Met Leu Asn Gly Ile Asp Ala Leu Ile Thr Thr Glu
 100 105 110
 Pro Gly Cys Cys Ile Cys Ile Ser Thr Ala Asp Cys Ile Pro Val Leu
 115 120 125

Leu Tyr Asp Arg Val His His Ala Val Ala Ala Val His Ala Gly Trp
 130 135 140
 Arg Gly Thr Val Glu Tyr Ile Val Gly His Thr Leu Glu Lys Met Arg
 145 150 155 160
 Ala Val Phe Gly Thr Glu Gly Gln Asp Val Ile Ala Cys Ile Gly Pro
 165 170 175
 Gly Ile Ser Leu Gln Ser Phe Glu Val Gly Asp Glu Val Tyr Glu Ala
 180 185 190
 Phe Arg Leu Asn Gly Phe Asp Met Ser Arg Ile Ser Phe Arg His Ser
 195 200 205
 Val Thr His Lys Tyr His Ile Asp Leu Trp Glu Ala Asn Arg Gln Gln
 210 215 220
 Leu Leu Asp Phe Gly Val Pro Gly Val Gln Ile Glu Ile Ala Asp Ile
 225 230 235 240
 Cys Thr Tyr Ile Arg His Glu Asp Phe Phe Ser Ala Arg Arg Leu Gly
 245 250 255
 Ile Lys Ser Gly Arg Ile Leu Ser Gly Ile Met Ile Asn Ser
 260 265 270

<210> 6113

<211> 420

<212> PRT

<213> B.fragilis

<400> 6113

Cys Glu Ile Trp Val Tyr Phe Cys Phe Met Tyr Thr Lys Lys Phe Leu
 1 5 10 15
 Val Phe Asp Lys Asn Thr Ile Phe Ile Ile Leu Ile Leu Leu Phe Trp
 20 25 30
 Leu Phe Ala Pro Phe Leu Thr Ile Phe Leu Val Leu Leu Leu Phe Cys
 35 40 45
 Lys Arg Leu Ser Ile Cys Gln Tyr Lys Cys Met Phe Leu Val Ile Ser
 50 55 60
 Met Ser Phe Ala Leu Leu Ala Tyr Thr Gln Lys Ser Leu Phe Tyr Leu
 65 70 75 80
 Asp Thr Asp Ile Ile Arg Tyr Tyr Asn Ala Tyr Tyr Pro Phe Ile Asp
 85 90 95
 Gln Ser Phe Asp Leu Phe Ser Leu Met Phe Val Leu Glu Asn Asn Leu
 100 105 110
 Thr Phe Ser Phe Asn Leu Ile Asn Val Leu Leu Val Cys Thr Phe Ala
 115 120 125
 Asn Val Gln Ile Ile Ser Ile Phe Trp Val Phe Cys Ile Tyr Tyr Phe
 130 135 140
 Tyr Phe Leu Ser Leu Leu Lys Leu Phe Glu His Glu Gly Ile Ser Ile
 145 150 155 160
 Ser Pro Ile Asn Ile Leu Leu Val Thr Phe Ile Ser Ile Phe Gly Phe
 165 170 175
 Ile Leu Phe Thr Gln Val Thr Asp Thr Ile Lys Asn Ala Ala Ser Phe
 180 185 190
 Ala Ile Phe Phe Tyr Ala Phe Ile Cys Phe Ile Cys Asn Glu Asn Lys
 195 200 205
 Leu Lys Ile Ile Leu Leu Tyr Ile Ile Gly Val Gly Ile His Ser Ser
 210 215 220
 Ile Leu Met Leu Leu Pro Leu Phe Leu Tyr Lys Lys Ile Asn Thr Gln
 225 230 235 240
 Ile Leu Ile Leu Leu Phe Ile Leu Ala Val Leu Ile Ser Ser Arg Ile
 245 250 255
 Asn Ile Met Ser Leu Phe Ser Ile Ile Leu Pro Asp Val Gly Phe Gly
 260 265 270

Ser Leu Leu Leu Lys Lys Ala Glu Thr Tyr Ser Ile Val Gly Asp Ala
 275 280 285
 Gln Ser Ser Ile Arg Tyr Ile Gly Ile Ser Cys Val Met Leu Leu Ser
 290 295 300
 Ala Ile Tyr Leu Ser Ile Asn Lys Leu Phe Asn Val Ser Asn Lys Tyr
 305 310 315 320
 Met Asn Ile Ile Phe Ile Tyr Leu Ile Ile Met Tyr Leu Asn Tyr Asn
 325 330 335
 Asn Pro Asp Gly Tyr Ile Arg Phe Ala Asn Phe Ala His Phe Leu Phe
 340 345 350
 Leu Phe Glu Phe Ile Gln Leu Leu Arg Asp Lys Lys Arg Tyr Ser Leu
 355 360 365
 Val Ile Phe Leu Phe Ile Val Val Phe Ile Val Thr Asn Phe Gln Met
 370 375 380
 Thr Tyr Ser Arg Thr Leu Ser Gly Gly Tyr Cys Ser Ser Tyr Met Asn
 385 390 395 400
 Asn Ser Ile Phe Gln Ile Leu Phe Ser Asn Val Val Glu Tyr Leu Ser
 405 410 415
 Phe Lys Ala Tyr
 420

<210> 6114

<211> 396

<212> PRT

<213> B.fragilis

<400> 6114

Cys Phe Leu Cys Leu Arg Ser Thr Phe Tyr Asp Ile Leu Asp Asn Ile
 1 5 10 15
 Phe Ile Met Ile Arg Ile Leu Ile Thr Gly Asp Tyr Cys Pro Arg Asn
 20 25 30
 Arg Ile Asp Asp Leu Ile Asn Leu Gly Lys Tyr Gln Ser Val Phe Glu
 35 40 45
 Asp Ile Ile Pro Ile Val Lys Gly His Asp Tyr Ser Ile Val Asn Leu
 50 55 60
 Glu Cys Pro Val Val Glu His Asp Asp Cys Ala Ile Lys Lys Gln Gly
 65 70 75 80
 Pro Asn Leu Ser Ser Ser Leu Arg Ala Val Glu Ile Leu Lys Leu Leu
 85 90 95
 Asp Phe Asn Leu Leu Thr Leu Ala Asn Asn His Phe Tyr Asp Tyr Gly
 100 105 110
 Asp Gly Gly Val Lys His Thr Leu Glu Cys Cys Lys Asn Leu Asp Leu
 115 120 125
 Asp Phe Val Gly Gly Gly Glu Ser Leu Ser Ala Ala Arg Ala Ile Lys
 130 135 140
 Phe Lys Asn Leu Phe Gly Lys Arg Phe Ala Phe Ile Asn Val Cys Glu
 145 150 155 160
 His Glu Phe Ser Ile Ala Thr Gln Thr Thr Gly Gly Ser Asn Pro Leu
 165 170 175
 Asn Pro Ile Ser Asn Tyr Tyr Asp Ile Gln Lys Ala Arg Ala Thr Ala
 180 185 190
 Asp Tyr Val Ile Ile Ile Val His Gly Gly His Glu His Tyr Gln Leu
 195 200 205
 Pro Ser Leu Arg Met Gln Glu Thr Tyr Arg Phe Phe Ile Asp Ala Gly
 210 215 220
 Ala Asp Val Val Val Asn His His Gln His Cys Phe Ser Gly Tyr Glu
 225 230 235 240
 Ile Tyr Asn Asn Lys Tyr Ile Phe Tyr Gly Leu Gly Asn Phe Cys Phe
 245 250 255

Asp Asn Pro Val Lys Arg Asn Ser Ile Trp Asn Glu Gly Tyr Met Leu
 260 265 270
 Ser Leu Asn Phe Ser Asp Tyr Gly Lys Ile Asp Phe Ser Leu Ile Pro
 275 280 285
 Tyr Ile Gln Cys Asp Gln Leu Pro Lys Val Arg Leu Leu Lys Glu Ser
 290 295 300
 Glu Lys Ala Val Phe Phe Asp Lys Ile Ser Ser Leu Asn Lys Ile Ile
 305 310 315 320
 Gln Ser Pro Asp Met Leu Lys Asp Ser Phe Tyr Ala Phe Cys Met Thr
 325 330 335
 Lys Arg Arg Leu Tyr Leu Ser Leu Phe Glu Pro Tyr Pro Gly Arg Tyr
 340 345 350
 Leu Lys Tyr Ile Tyr Arg Met Gly Tyr Leu Pro Ser Phe Leu Phe Ser
 355 360 365
 Lys Thr Arg Leu Phe Ile Gln Asn Phe Met Asp Cys Glu Ser His His
 370 375 380
 Asp Ile Val Lys Glu Val Ile Lys Ile Asn Arg Lys
 385 390 395

<210> 6115
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 6115
 Glu Ile Leu Trp Gly Leu Thr Asp Glu Val Tyr Lys Gln Phe Ile Asp
 1 5 10 15
 Arg Gln Lys Thr Gly Lys Gly Ala Thr Leu Pro Val Phe Ile Leu Leu
 20 25 30
 Thr Asn Pro Val Asp Trp Ile Glu Arg Ile Thr Leu Ile Phe Ala Ile
 35 40 45
 Arg Lys Glu Asn Cys Asp Ala Glu Gly Leu Gln Arg
 50 55 60

<210> 6116
 <211> 524
 <212> PRT
 <213> B.fragilis

<400> 6116
 Met Lys Gly Leu Leu Thr Ser Ile Leu Thr Val Leu Thr Phe Thr Gly
 1 5 10 15
 Leu Gln Ala Gln Pro Leu Pro Ser Thr Pro Lys Leu Val Val Gly Leu
 20 25 30
 Thr Ile Asp Gln Leu Arg Thr Asp Tyr Leu Glu Ala Phe Ser Thr Leu
 35 40 45
 Tyr Gly Asp Arg Gly Phe Arg Arg Leu Trp Lys Glu Gly Arg Val Phe
 50 55 60
 Arg Asn Ala Glu Tyr Thr Phe Ser Gly Thr Asp Arg Ala Ser Ala Ile
 65 70 75 80
 Ala Ala Ile Tyr Thr Gly Thr Thr Pro Ser Val Asn Gly Ile Ile Gly
 85 90 95
 Lys Arg Trp Met Asp Val Ser Thr Leu Arg Thr Val Ser Cys Val Asp
 100 105 110
 Asp Pro Ala Phe Met Gly Asn Tyr Thr Asn Glu Ser Ser Pro Ser
 115 120 125
 His Leu Leu Thr Ser Thr Ile Ala Asp Glu Leu Lys Ile Ala Thr Arg
 130 135 140
 Asn Glu Gly Leu Val Tyr Ala Ile Ala Pro Phe Arg Asp Ala Ala Ile

145 150 155 160
 Leu Ala Ala Gly His Ala Gly Asn Gly Ala Phe Trp Leu Asn Asn Thr
 165 170 175
 Thr Gly Lys Trp Cys Gly Thr Thr Tyr Ser Glu Phe Pro Trp Trp
 180 185 190
 Val Ser Gln Tyr Asn Asp Arg Asn Ala Ile Asp Phe Arg Ile Ala Asp
 195 200 205
 Met Thr Trp Thr Pro Val His Pro Val Gln Ser Tyr Ser Phe Leu Pro
 210 215 220
 Glu Trp Arg Asp Ala Ala Phe Lys Tyr Lys Phe Asp Asp Asp Arg Val
 225 230 235 240
 Asn Lys Tyr Lys Arg Leu Ile Thr Ser Pro Phe Ile Asn Asp Glu Ile
 245 250 255
 Asn Thr Leu Thr Glu Glu Leu Leu Asp Lys Ser Thr Met Gly Lys Asp
 260 265 270
 His Val Pro Asp Met Leu Ala Leu Thr Tyr Tyr Ala Gly Asn Tyr Ala
 275 280 285
 His Lys Ser Val Gln Glu Cys Ala Met Glu Met Gln Asp Thr Tyr Val
 290 295 300
 Arg Leu Asp Arg Ser Ile Ala Ser Leu Leu Asp Ile Ile Asp Lys Lys
 305 310 315 320
 Val Gly Leu Gln Asn Val Val Phe Phe Ile Thr Ser Thr Gly Tyr Thr
 325 330 335
 Asp Thr Glu Ser Pro Asp Leu Gly Leu Tyr Arg Val Pro Thr Ser Glu
 340 345 350
 Phe His Leu Asn Arg Cys Ala Ala Leu Leu Asn Met Tyr Leu Met Ala
 355 360 365
 Thr Tyr Gly Gln Gly Gln Tyr Val Glu Ala Tyr Tyr Asp Gln Gln Ile
 370 375 380
 Tyr Leu Asn His Lys Leu Ile Glu Glu Lys Gln Leu Asn Leu Ala Asp
 385 390 395 400
 Ile Gln Glu Lys Ala Ala Glu Phe Leu Ile Gln Phe Ser Gly Val Asn
 405 410 415
 Glu Val Tyr Ser Gly Lys Arg Leu Leu Leu Gly Ser Trp Thr Pro Asp
 420 425 430
 Ile Ser Met Ile Arg Asn Ser Phe His Arg Lys Arg Ser Gly Asp Leu
 435 440 445
 Leu Ile Asp Val Leu Pro Gly Trp Ser Ile Val Asn Glu Asn Thr Ser
 450 455 460
 Asp His Lys Val Val Arg Lys Ala His Ile Pro Ser Pro Leu Ile Phe
 465 470 475 480
 Met Gly Ser Gly Val Lys Pro Ala Val Ile Asn Thr Pro Val Thr Ile
 485 490 495
 Asp His Ile Ala Pro Thr Val Ala His Ile Leu Arg Ile Arg Ser Pro
 500 505 510
 Asn Ala Cys Ser Ala Thr Pro Ile Thr Asp Ile Arg
 515 520

<210> 6117

<211> 182

<212> PRT

<213> B.fragilis

<400> 6117

Asn Cys Ser Arg Ser Asn Leu Met Asn Leu Ser Phe Ala Ala Ile Asp
 1 5 10 15
 Phe Glu Thr Ala Thr Gly Tyr Met Glu Ser Ala Cys Ala Val Gly Ile
 20 25 30
 Val Thr Val Thr Asp Gly Glu Ile Thr Asp Glu Tyr Tyr Ser Leu Ile

Val Thr Gly Lys Glu Asn Lys Gly Phe Ser Ala His Met Asn Leu Gln
 65 70 75 80
 Leu Tyr Thr Ser Cys Ala Ala Ser Phe Thr Glu Asn Glu Leu Asp Glu
 85 90 95
 Val Ala Phe Lys Leu Asn Arg Phe Lys Leu Glu Ile Ile Gly Asn Ile
 100 105 110
 Asn Arg Lys Phe Ser Tyr His Phe Arg Gln Ser Phe Asn Lys Tyr Ser
 115 120 125
 Asn Pro Phe Ala Leu Asp Asn Leu Ser Ser Ser Val Glu Tyr Ala Tyr
 130 135 140
 Leu Thr Tyr His Leu Ser Asp Arg Phe Ser Ile Thr Ala Gly Lys Gln
 145 150 155 160
 Phe Leu Met Leu Gly Gly Tyr Glu Tyr Tyr Val Asn Pro Ile Lys Val
 165 170 175
 Arg Glu Phe Ser Glu Phe Asn Asn Tyr Val Asn Cys Phe Leu Ala Gly
 180 185 190
 Val Ser Ala Thr Trp Asn Val Thr Pro Thr Gln Glu Leu Asn Phe Gln
 195 200 205
 Ile Val Asn Asn Arg Asn Gly Gly Asp Ala Asp Thr Tyr Leu His Gly
 210 215 220
 Leu Pro Thr Asp Val Glu Ala Thr Lys Val Pro Leu Ile Ser Thr Ile
 225 230 235 240
 Asn Trp Asn Ser Tyr Tyr Leu Asp Lys Ala Ile Gln Leu Arg Tyr Ala
 245 250 255
 Ala Ser Trp Gly Gln Gln Ala Lys Gly Arg Asn Ile Met Tyr Leu Thr
 260 265 270
 Ala Gly Asn Val Tyr Glu Lys Gly Pro Trp Ile Ala Tyr Met Asp Phe
 275 280 285
 Met Tyr Ser Arg Gln Gly Ile Asp Asn Lys Gly Ile Ile Ser Ala Leu
 290 295 300
 Pro Arg Ile Asp Leu Glu Asn Pro Gln Thr Ala Gln His Thr Glu Tyr
 305 310 315 320
 Phe Thr Thr Ile Ala Asn Val Asp Tyr Arg Phe His Pro Asn Trp Asn
 325 330 335
 Ala Tyr Leu Lys Gly Ile Tyr Glu Ser Gly Lys Ile Tyr Lys Ala Asn
 340 345 350
 Gly Ile Phe Glu Lys Gly Thr Tyr Arg Arg Thr Trp Cys Gly Gln Val
 355 360 365
 Cys Val Glu Tyr Tyr Pro Met Arg Asn Ser Glu Leu Leu Ile Phe Leu
 370 375 380
 His Tyr Gln Tyr Lys Arg Asn Lys Leu Leu Lys Pro Ala Arg Asn Leu
 385 390 395 400
 Asp Ala Ile Asp Pro Asn Thr Gln Arg Ile Ser Leu Gly Leu Val Tyr
 405 410 415
 Ser Ile Pro Val Phe
 420

<210> 6120

<211> 898

<212> PRT

<213> B.fragilis

<400> 6120

Gln Thr Asn Arg Met Lys Tyr Ile Ile Tyr Phe Met Met Met Leu Tyr
 1 5 10 15
 Gly Ser Leu Cys His Ala Ile Val Cys Lys His Ile Val Glu Arg Ser
 20 25 30
 Glu Thr Asn Thr Arg Lys Val Tyr Gln Ile Gln Arg Asp Ala Leu Gly
 35 40 45

Tyr Met Trp Phe Met Asn His Ala Gly Ile Ser Arg Phe Asp Gly Thr
 50 55 60
 Lys Leu Lys His Tyr Lys Leu Pro Ala Glu Gly Arg Thr Met Asp Tyr
 65 70 75 80
 Tyr Met Gly Asn Cys Arg Leu Leu Thr Asp Asn Arg Asn Gly Leu Trp
 85 90 95
 Val Val Thr Arg Asn Gly Tyr Leu Trp Met Tyr Asn Pro Ser Leu Asp
 100 105 110
 Lys Phe Glu Cys Arg Asn His Leu Val Ile Pro Asn Asp Val Ser Leu
 115 120 125
 His Phe Leu Cys Val Asp Asn Ser Ser His Ile Trp Phe Ser Val Gly
 130 135 140
 Asn Arg Leu Ile Ala Tyr Gln Ile Leu Ser Asn Thr Phe His Arg Val
 145 150 155 160
 Asp His Ser Leu Ala Ala Ile Ser Cys Met Val Glu Val Ala Pro Gly
 165 170 175
 Glu Tyr Phe Val Gly Ser Asp Glu Gly Leu Phe Gly Ile Thr Ile Lys
 180 185 190
 Asn Tyr Ala Val Asp Arg Gln Thr Gly Glu Leu Ser Gly Lys Arg Tyr
 195 200 205
 Ser Arg Ile His Glu Ile Leu Phe His Pro Tyr Thr Gln Arg Leu Val
 210 215 220
 Met Phe Asp Tyr Ser Glu Gly Leu Gly Val Trp Asp Met Lys Ser Glu
 225 230 235 240
 Gln Leu Val Gly Thr Trp Asn Arg Leu Leu Asn Ser Arg Val Ser Gly
 245 250 255
 Leu Arg Ile Trp Asp Asp Arg Thr Val Leu Val Ala Thr Asp Gly Glu
 260 265 270
 Gly Ile Phe Arg Met Asp Ile Val Asn Pro Asp Ile Thr Ser Phe Ile
 275 280 285
 Gln Thr Asp Phe Glu Asn Asp Asn Ser Ile Arg Thr Asn Arg Ile Ala
 290 295 300
 Asp Val Phe Val Asp Asp Gln Lys Leu Ile Trp Val Ala Asp Tyr Pro
 305 310 315 320
 Glu Gly Val Ser Met Ile Asp Val Glu Ser Pro Asp Asp Tyr Lys Trp
 325 330 335
 Tyr Arg Ala Arg Ser Gly Asp Ser His Ser Leu Thr Asn Asn Arg Val
 340 345 350
 Asn Ala Val Leu His Asp Ser Asp Gly Asp Val Trp Phe Ala Thr Asp
 355 360 365
 His Gly Ile Ser Cys Phe His Pro Ser Thr Gly Leu Trp Asn Arg Ile
 370 375 380
 Val Thr Pro Leu Pro Cys Gln Met Tyr Thr Ala Leu Cys Glu Val Lys
 385 390 395 400
 Pro Gly Glu Ile Cys Ala Gly Asn Tyr Val His Gly Leu Phe Phe Ile
 405 410 415
 Arg Lys Lys Ser Asn Tyr Ser Val Thr Pro Tyr Val Arg Ile Ser Gly
 420 425 430
 Val Asn Ala Leu Cys Arg Lys Asp Lys Asp Gly Phe Trp Ile Gly Thr
 435 440 445
 Asp Glu Gly Val Phe Phe Tyr Cys Pro Glu Asn Asp Ser Ile Val Glu
 450 455 460
 Val Lys Arg Leu Ser Gly Leu His Ile His Ala Leu His Gln Ser Asp
 465 470 475 480
 Asp Cys Leu Tyr Ile Gly Thr Glu Gly Asn Gly Leu Met Val Tyr His
 485 490 495
 Pro Glu His Glu Gln Met Asp Thr Val Ala Ala Leu Gly Thr Gly Asn
 500 505 510
 Val Tyr Ala Val Trp Ser Asp Asp Ser Arg Arg Leu Met Gly Ser Ser

515	520	525
Asp Gly Phe Ala Phe Ser Leu	Asp Leu Val Gln His Ser Tyr Tyr Arg	
530	535	540
Phe Leu Ser Lys Gly Ile Arg	Ile Thr Ser Gly Thr Phe Leu Gly Asn	
545	550	555
Gly Arg Tyr Ile Leu Gly Thr Tyr	Gln Gly Ala Ile Glu Tyr Asp Lys	
565	570	575
Gln Lys Ala Arg Pro Leu Arg Lys	Ala Cys Leu Gly Phe Tyr Leu Asp	
580	585	590
Glu Leu Arg Val Leu Asp Lys Glu	Val Thr Val Glu Thr Glu Asn Ser	
595	600	605
Pro Leu Lys Lys Ala Leu Asn Cys	Thr Ala Thr Leu Gln Leu Glu His	
610	615	620
Asn Glu Asn Thr Phe Ser Phe Thr	Ala Thr Ala Ile Arg Tyr Thr Glu	
625	630	635
Lys Gln Asp Ile Ala Tyr Ser Trp	Lys Leu Asp His Thr Asp Trp Ser	
645	650	655
Ala Pro Ser Val Asp Asn Arg Ile	Arg Phe Ser Asn Leu Pro Pro Gly	
660	665	670
Glu Tyr Ile Phe Ser Val Arg Ala	Leu Ser Ile Asp Asn Gly Arg Pro	
675	680	685
Phe Ala Gln Arg Asn Met His Ile	Ile Ile Arg Gln Pro Leu Trp Lys	
690	695	700
Thr Gly Gly Ala Phe Leu Cys Tyr	Gly Leu Leu Ala Leu Met Leu Gly	
705	710	715
Ser Leu Ala Val Arg Ser Trp Phe	Val Trp Gln Asp Arg Asn Leu Ser	
725	730	735
Arg Glu Gln Val Arg Leu Phe Ala	Asn Thr Thr Arg Asn Leu Cys Leu	
740	745	750
Pro Leu Thr Leu Ile Lys Val Pro	Leu Glu Tyr Leu Tyr Glu Lys Ser	
755	760	765
Ser Ser Glu Leu Val Ser Asn Val	Leu Gln Gln Ile Lys Gly Val Asn	
770	775	780
Asn Leu Leu Ala Glu Leu Glu Asn	Ile Ser Arg Val Ser Ala Ala Pro	
785	790	795
Gly Arg Leu Ser Leu Ala Asp Tyr	Glu Leu Ser Ile Phe Leu Lys Glu	
805	810	815
Thr Val Ala Arg Ile Arg Asp Tyr	Ile Ser Glu Lys Asp Ile Met Leu	
820	825	830
Arg Trp Thr Glu Glu Pro Ala Phe	Ala Thr Val Cys Leu Asp Lys Asp	
835	840	845
Lys Met Ser Ala Ile Leu Arg Asn	Leu Leu Met Ala Phe Thr Asp Ser	
850	855	860
Met Asp Arg Gly Asp Glu Ile Leu	Leu Ser Thr Ser Cys Asn Asn Gln	
865	870	875
Lys Trp Glu Leu Arg Leu Glu Ser	Glu Asp Asn Gly Phe Leu Lys Lys	
885	890	895
Lys Phe		

<210> 6121

<211> 260

<212> PRT

<213> B.fragilis

<400> 6121

Arg Asn Gly Ser Lys Leu Val Ile Arg	Met Ile Ser Ala Asn Leu Gln
1	5 10 15
Gln Trp Ile Gln His Pro Glu Thr	Leu Asn Lys Asp Thr Leu Tyr Glu

20 25 30
 Leu Arg Thr Leu Val Thr Arg Tyr Pro Tyr Phe Gln Ser Leu Arg Leu
 35 40 45
 Leu Tyr Leu Lys Asn Leu Tyr Leu Leu His Asp Ile Ser Phe Gly Ala
 50 55 60
 Glu Leu Arg Lys Ala Ile Leu His Val Ala Asp Arg Arg Lys Leu Phe
 65 70 75 80
 Tyr Leu Ile Glu Gly Glu Arg Tyr Ile Leu Lys Pro Arg Lys Lys Asn
 85 90 95
 Ala Leu Pro Glu Thr Glu Val Leu Glu Glu Glu Pro Ser Leu Asp Arg
 100 105 110
 Thr Leu Ser Leu Ile Asp Ala Phe Leu Ala Thr Val Pro Glu Glu Val
 115 120 125
 Ser Ala Gln Thr Ser Leu Asp Tyr Ala Thr Asp Tyr Thr Thr Tyr Leu
 130 135 140
 Leu Gln Glu Asp Asp Thr Pro Glu Leu Glu Glu Thr Pro Lys Leu Arg
 145 150 155 160
 Gly His Glu Leu Ile Asp Gly Phe Ile Glu Arg Ser Glu Glu Glu Thr
 165 170 175
 Ser Ile Arg Leu Gln Pro Ala Asp Glu Asn Lys Ala Ile Ser Glu Glu
 180 185 190
 Glu Glu Ser Glu Thr His His Glu Glu Asp Glu Asp Asp Ser Cys Phe
 195 200 205
 Thr Glu Thr Leu Ala Lys Ile Tyr Val Lys Gln His Arg Tyr Ser Lys
 210 215 220
 Ala Leu Glu Ile Ile Lys Lys Leu Ser Leu Lys Tyr Pro Lys Lys Asn
 225 230 235 240
 Ala Tyr Phe Ala Asp Gln Ile Arg Phe Leu Glu Lys Leu Ile Ile Asn
 245 250 255
 Ala Lys Ser Lys
 260

<210> 6122

<211> 83

<212> PRT

<213> B.fragilis

<400> 6122

Asn Ser Gly Ser Ile Phe Ser Asn Ser Ser Cys Cys Lys Arg Ala Asn
 1 5 10 15
 Arg Tyr Leu Tyr Gly Val Ser Pro Ile Trp Cys Met Gly Phe Ser Arg
 20 25 30
 Thr Val Leu Ser Ile Cys Phe Tyr Leu Asn Ser Phe Leu Leu Asp Ile
 35 40 45
 Phe Lys Met Asp Ala Ile Met Asp Phe Leu Tyr Thr Ile Ile Ser Gly
 50 55 60
 Val Ile Leu Phe Trp Ile Lys Ile Ile Ile Ser Trp Ser Phe Thr Tyr
 65 70 75 80
 Asn Leu Phe

<210> 6123

<211> 311

<212> PRT

<213> B.fragilis

<400> 6123

Tyr Cys Glu Arg Ser Asp Lys Asp Lys Ser Lys Met Asn Tyr Lys Arg
 1 5 10 15

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Ile Leu Lys Asn Gln Thr Thr Arg Leu Ala Met Leu Arg Ala Leu Ser
20 25 30
Phe Ile Pro Asp Ala Ile Met Leu Arg Leu Gln Tyr Trp Ile Lys Thr
35 40 45
Gly His Lys Leu Asn Leu Asn Lys Pro Gln Arg Tyr Thr Glu Lys Ile
50 55 60
Gln Ser Tyr Lys Cys Phe Tyr Arg Asn Pro Leu Leu Lys Val Cys Ser
65 70 75 80
Asp Lys Tyr Met Val Arg Asp Tyr Val Ala Ser Lys Gly Met Ala Lys
85 90 95
Tyr Leu Asn Glu Leu Tyr Gly Ile Tyr Asp Ser Ala Glu Asp Ile Cys
100 105 110
Phe Asp Ser Leu Pro Asn Glu Phe Val Ile Lys Ser Thr Asp Gly Gly
115 120 125
Gly Ser Asn Asn Ile Ile Ile Cys Lys Asn Lys Asp Glu Leu Asn Ile
130 135 140
Phe Glu Thr Ile Lys Thr Val Asn Ser Trp Leu Lys Leu Asn Arg Lys
145 150 155 160
Val Asn Pro Gly Arg Glu Trp Gly Tyr Leu Gly Gly Arg Pro Arg Val
165 170 175
Ile Ile Glu Lys Leu Ile Lys Asn Ile Asn Ser Glu Thr Ser Leu Thr
180 185 190
Asp Tyr Lys Met Tyr Cys Phe Cys Gly His Val His Ser Leu Phe Val
195 200 205
Leu Thr Asp Arg Asp Lys Gly Ala Lys Ile Asn Phe Phe Asp Arg Asn
210 215 220
Trp Asn Pro Leu Asn Val Lys Ser Asp Ser Tyr Pro Thr Ser Asn Gln
225 230 235 240
Leu Ile Leu Lys Pro Lys Asn Phe Asp Arg Met Ile Glu Ile Ala Glu
245 250 255
Val Leu Ser Glu Asp Phe Pro His Val Arg Ile Asp Leu Tyr Asn Ile
260 265 270
Asp Gly Asn Ile Ile Phe Gly Glu Met Thr Phe Tyr Ser Gly Ser Gly
275 280 285
Tyr Trp Gly Phe Val Pro Asp Ser Phe Asp Phe Glu Leu Gly Gln Gln
290 295 300
Phe Asp Ile Ser Ser Phe Ile
305 310

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<210> 6124

<211> 144

<212> PRT

<213> B.fragilis

<400> 6124

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Gly Thr Met Ser Leu His Lys Tyr Ser Ile Val Leu Leu Ala Leu Leu
1 5 10 15
Ala Leu Leu Cys Ser Cys His Asp Glu Asp Lys Gly Asp Ile Pro Gln
20 25 30
Ser Asp Glu Arg Thr Ala Asp Phe Ile Val Lys Tyr Lys Asp Asp Phe
35 40 45
Gly Ile His Thr Asp Tyr Lys Ala Lys Val Tyr Ile Tyr Tyr Gly Ile
50 55 60
Tyr Ser Met Asp Ile Val Gly Phe His Tyr Leu Pro Asp Gly Val Leu
65 70 75 80
Asp His Glu Gly Lys Glu Ile Thr Pro Asp Ile Arg Leu Ser Ala Asp
85 90 95
Gly Lys Glu Asp Ile Thr Leu Leu Leu Asp Asn Ala Glu Lys Val Thr
100 105 110

```

Val	Ile	Val	Glu	Ser	Ser	Tyr	Tyr	Glu	Gly	Arg	Val	Gly	Ile	Thr	Ser
	115						120					125			
Tyr	Ser	Ser	Gly	Asp	Thr	Pro	Ile	Lys	Gly	Asn	Ile	Thr	Phe	Gly	Glu
	130					135					140				

<210> 6125

<211> 303

<212> PRT

<213> B.fragilis

<400> 6125

Asp	Leu	Met	Arg	Val	Ser	Val	Val	Ile	Pro	Ser	Tyr	Asn	Arg	Ala	Lys
1			5						10					15	
Leu	Leu	Leu	Glu	Thr	Ile	Pro	Thr	Tyr	Leu	Gln	Glu	Asp	Val	Ile	Glu
			20					25					30		
Val	Ile	Ile	Val	Asp	Asp	Ala	Ser	Val	Asp	Asn	Thr	Ala	Glu	Val	Val
			35				40					45			
Lys	Lys	Ile	Gln	Glu	Lys	Tyr	Pro	Gln	Val	Lys	Tyr	Ile	Arg	Asn	Ala
	50					55					60				
Val	Asn	Lys	Lys	Gln	Thr	Tyr	Ser	Lys	Asn	Ile	Gly	Ile	Lys	Ile	Ser
65					70					75				80	
Lys	Gly	Asp	Tyr	Ile	Tyr	Leu	Gly	Asp	Asp	Ser	Ile	Leu	Met	Pro	
			85					90					95		
Asn	Ser	Ile	Arg	Tyr	Leu	Lys	Glu	Thr	Met	Tyr	Lys	Tyr	Asn	Ala	Asp
			100					105					110		
Ile	Cys	Gly	Ala	Lys	Ala	Leu	Tyr	Leu	Pro	Met	Glu	Tyr	Val	Asn	Lys
		115					120					125			
Ile	Asp	Glu	Tyr	Val	Gln	Leu	Asn	Asp	Ile	Gln	Leu	Val	Asp	Lys	Asn
	130					135					140				
Glu	Ile	Val	Asp	Ile	Lys	Lys	Ile	Lys	Ala	Ser	Phe	Asn	Tyr	Ser	Thr
145					150					155				160	
Ala	Leu	Pro	Ile	Val	Val	Pro	Phe	Cys	Gln	Ala	Cys	Ala	Leu	Val	Lys
			165					170					175		
Lys	Glu	Leu	Ala	Ile	Gln	Ile	Leu	Phe	Asp	Glu	Asn	Phe	Thr	Gly	Asn
			180					185					190		
Ala	Tyr	Arg	Glu	Glu	Thr	Asp	Phe	Phe	Ile	Arg	Cys	Thr	Leu	Gln	Gly
	195					200						205			
Ala	Lys	Val	Met	Tyr	Asp	Ser	Arg	Ala	Val	Gln	Val	Asn	Leu	Pro	Arg
	210					215					220				
Gln	Val	Ala	Thr	Gly	Gly	Ala	His	Ser	Arg	Gly	Arg	Ile	Lys	Trp	Tyr
225				230						235				240	
Leu	Ser	Thr	Ile	Ala	Asn	Asn	Trp	Tyr	Phe	Leu	Lys	Lys	Asn	Trp	Lys
			245						250					255	
Asn	Ile	Gln	Ser	Tyr	Tyr	Lys	Phe	Ser	Asp	Asn	Ile	Tyr	Lys	Arg	Gln
		260					265					270			
Leu	Met	Phe	Val	Leu	Lys	Asn	Ile	Cys	Phe	Ala	Ser	Lys	Ala	Val	Val
	275					280					285				
Lys	Ile	Leu	Met	Arg	Asn	Leu	Gly	Leu	Leu	Leu	Leu	Tyr	Val	Tyr	
	290					295					300				

<210> 6126

<211> 63

<212> PRT

<213> B.fragilis

<400> 6126

Cys	Ile	Arg	Ser	Gln	His	Phe	Arg	Ser	Asn	His	Phe	Gly	His	His	Tyr
1				5					10				15		
Arg	His	Leu	Tyr	Asn	Asp	Tyr	Thr	Leu	Phe	Ile	Asn	His	Arg	Val	Gly

	20		25		30									
Asp	Lys	Ile	Leu	Gly	Met	Thr	Ile	Glu	Asn	His	Ser	Val	Val	Ile
	35		40		45									
Gly	Asn	Pro	Glu	Arg	Leu	Lys	Ser	Ile	Val	Ile	His	Val	Phe	Leu
	50		55		60									

<210> 6127

<211> 79

<212> PRT

<213> B.fragilis

<400> 6127

Arg	Met	Arg	Ser	Val	Met	Glu	Gly	Ile	Ser	Lys	Gln	Ala	Gly	Gln	Phe
1			5					10					15		
Asp	Ala	Gly	Asn	Gly	Gly	Leu	Glu	Gly	Met	Lys	His	Ala	Thr	Leu	Leu
		20				25						30			
Asp	Leu	Asn	Gly	Phe	Leu	Cys	Asp	Asp	Phe	Gln	Glu	Phe	Phe	Glu	Gly
	35				40						45				
Ala	Tyr	Phe	Ile	Ile	Phe	Lys	Leu	Pro	Thr	Val	Cys	Leu	Arg	Lys	Met
	50				55						60				
Phe	Phe	Gly	Thr	Phe	Asp	Leu	Cys	Leu	Phe	Tyr	Ser	Pro	Ile	Leu	
65				70				75							

<210> 6128

<211> 375

<212> PRT

<213> B.fragilis

<400> 6128

Ser	Arg	Arg	Arg	Lys	Leu	Thr	Asn	Asn	Lys	Met	Glu	Asp	Asn	Lys	Ile
1				5					10					15	
Lys	Ile	Gly	Ile	Thr	Gln	Gly	Asp	Ile	Asn	Gly	Val	Gly	Tyr	Glu	Val
		20				25						30			
Ile	Leu	Lys	Thr	Phe	Ala	Asp	Pro	Val	Met	Leu	Glu	Leu	Cys	Thr	Pro
	35				40						45				
Val	Ile	Tyr	Gly	Ser	Pro	Lys	Val	Ala	Ala	Tyr	His	Arg	Lys	Ser	Leu
	50				55					60					
Asp	Leu	Pro	Thr	Asn	Phe	Ser	Ile	Val	Asn	Thr	Ala	Ala	Glu	Ala	Ala
65				70					75					80	
His	Asn	Arg	Leu	Ser	Val	Val	Asn	Cys	Thr	Asp	Asp	Glu	Val	Lys	Val
		85						90					95		
Glu	Phe	Ser	Lys	Pro	Asp	Pro	Glu	Ala	Gly	Lys	Ala	Ala	Leu	Gly	Ala
		100					105						110		
Leu	Glu	Lys	Ala	Ile	Glu	Glu	Phe	Arg	Glu	Gly	Leu	Ile	Asp	Val	Ile
	115					120						125			
Val	Thr	Ala	Pro	Ile	Asn	Lys	His	Thr	Ile	Gln	Ser	Glu	Gly	Phe	Ala
	130				135						140				
Phe	Pro	Gly	His	Thr	Glu	Tyr	Ile	Glu	Gln	Arg	Leu	Gly	Asn	Gly	Ser
145				150				155						160	
Lys	Ser	Leu	Met	Ile	Leu	Met	Lys	Glu	Asp	Phe	Arg	Val	Ala	Leu	Val
		165						170					175		
Thr	Gly	His	Ile	Pro	Val	Arg	Glu	Ile	Ala	Ser	Ser	Ile	Thr	Lys	Glu
	180					185						190			
Leu	Ile	Gln	Glu	Lys	Leu	Ala	Ile	Phe	Asn	Arg	Ser	Leu	Lys	Gln	Asp
	195				200						205				
Phe	Gly	Ile	Gly	Ala	Pro	Arg	Ile	Ala	Val	Leu	Ala	Leu	Asn	Pro	His
210				215						220					
Ala	Gly	Asp	Asp	Gly	Leu	Gly	Thr	Glu	Glu	Gln	Glu	Ile	Ile	Ser	
225				230				235					240		

Pro Ala Ile Gln Glu Met Ala Ala Lys Gly Ile Leu Cys Tyr Gly Pro
 245 250 255
 Tyr Pro Ala Asp Gly Phe Met Gly Ser Gly Asn Phe Thr His Phe Asp
 260 265 270
 Gly Val Leu Ala Met Tyr His Asp Gln Gly Leu Ala Pro Phe Lys Ala
 275 280 285
 Leu Ala Met Asp Glu Gly Val Asn Tyr Thr Ala Gly Leu Pro Val Ile
 290 295 300
 Arg Thr Ser Pro Ala His Gly Thr Ala Tyr Asp Ile Ala Gly Lys Gly
 305 310 315 320
 Val Ala Cys Glu Asp Ser Phe Arg Gln Ala Ile Tyr Val Ala Ile Asp
 325 330 335
 Val Phe Arg Asn Arg Gln Arg Glu Lys Glu Ala His Ala Asn Pro Leu
 340 345 350
 Arg Lys Gln Tyr Tyr Glu Lys Arg Asp Asp Ser Asp Lys Leu Lys Leu
 355 360 365
 Asp Thr Val Asp Asp Asp Ile
 370 375

<210> 6129

<211> 172

<212> PRT

<213> B.fragilis

<400> 6129

Met Pro Gly Arg Cys Val Leu Tyr Phe Pro Ala Val Gly Ile His Cys
 1 5 10 15
 Ile Leu Phe Phe Asn Leu Lys Ser Tyr Cys Val Met Phe Ser Leu Leu
 20 25 30
 Leu Ser Thr Phe Ala Met Met Gly Leu Thr Phe Val Ile Gly Phe Phe
 35 40 45
 Val Ala Gly Val Ile Lys Leu Ile Ala Ser Ala Ala Asp Ser Leu Ala
 50 55 60
 Phe Tyr Ser Ser His Gln Glu Glu Leu Ala Arg Leu Lys Arg Ile Arg
 65 70 75 80
 Lys Leu His Gln Lys Val Ala Thr Leu Ile Thr Glu Ser Ala Leu Ser
 85 90 95
 Asp Glu Glu Tyr Gly Ser Asp Gly Arg Glu Asp Phe Ser Arg Gly Val
 100 105 110
 Thr Lys His Pro Gly Asp Asn Arg Gly Phe Tyr His Gly Val Ser Pro
 115 120 125
 Gly Glu Ser Glu Arg Gly Leu Met Asp Tyr Phe Tyr Pro Glu Asp Thr
 130 135 140
 Arg Thr Met Phe Leu Arg Lys Glu Glu Gln Met Leu Gln His Asp Lys
 145 150 155 160
 Lys Asn Asn Lys Thr Ser Ser Thr Asn Lys Lys Gln
 165 170

<210> 6130

<211> 123

<212> PRT

<213> B.fragilis

<400> 6130

Asn Met Lys Gly Ile Tyr Ala Ile Ser Leu Leu Val Val Ser Asn Ile
 1 5 10 15
 Phe Met Thr Phe Ala Trp Tyr Gly His Leu Lys Leu Gln Glu Thr Lys
 20 25 30
 Ile Ile Ser Asn Trp Pro Leu Tyr Gly Val Val Leu Phe Ser Trp Val

```

      35              40              45
Ile Ala Leu Ala Glu Tyr Ser Cys Gln Val Pro Ala Asn Arg Leu Gly
  50              55              60
Phe Ser Gly Asn Gly Gly Pro Phe Ser Leu Met Gln Leu Lys Ile Ile
  65              70              75              80
Gln Glu Val Ile Thr Leu Ile Ile Phe Thr Val Phe Ser Thr Leu Leu
      85              90              95
Phe Lys Gly Glu Ser Leu His Trp Asn His Val Ala Ala Phe Val Cys
      100              105              110
Leu Ile Ala Ala Val Tyr Phe Val Phe Met Arg
      115              120

```

<210> 6131

<211> 440

<212> PRT

<213> B.fragilis

<400> 6131

```

Ser Ile Ile Met Lys Ile Ala Ile Val Gly Thr Gly Tyr Val Gly Leu
  1              5              10              15
Val Thr Gly Thr Cys Phe Ser Glu Met Gly Val Asp Val Thr Cys Val
      20              25              30
Asp Val Ile Glu Ser Lys Ile Asp Asn Leu Lys Lys Gly Ile Ile Pro
      35              40              45
Ile Tyr Glu Pro Gly Leu Glu Asp Met Val His Arg Asn Tyr Asn Ala
      50              55              60
Gly Arg Leu Lys Phe Thr Thr Ser Leu Ala Ser Cys Leu Asp Asp Val
      65              70              75              80
Glu Val Val Phe Ser Ala Val Gly Thr Pro Pro Asp Glu Asp Gly Ser
      85              90              95
Ala Asp Leu Lys Tyr Val Leu Glu Val Ala Arg Thr Ile Gly Lys Thr
      100              105              110
Met Asn His Tyr Val Leu Val Val Thr Lys Ser Thr Val Pro Val Gly
      115              120              125
Thr Ala Gln Gln Val Lys Ala Thr Ile Arg Gly Glu Leu Asp Lys Arg
      130              135              140
Gly Leu Asn Leu Glu Phe Asp Val Ala Ser Asn Pro Glu Phe Leu Lys
      145              150              155              160
Glu Gly Asp Ala Val Asp Asp Phe Met Lys Pro Asp Arg Val Val Val
      165              170              175
Gly Val Glu Ser Glu Arg Ala Lys Ser Ile Met Glu Arg Leu Tyr Lys
      180              185              190
Pro Phe Met Met Asn Asn Tyr Arg Leu Ile Phe Thr Asp Ile Pro Ser
      195              200              205
Ala Glu Met Ile Lys Tyr Ala Ala Asn Ser Met Leu Ala Thr Arg Ile
      210              215              220
Ser Phe Met Asn Asp Ile Ala Asn Leu Cys Glu Leu Val Gly Ala Asn
      225              230              235              240
Val Asn Met Val Arg Lys Gly Ile Gly Ala Asp Ser Arg Ile Gly Ser
      245              250              255
Lys Phe Leu Tyr Pro Gly Cys Gly Tyr Gly Gly Ser Cys Phe Pro Lys
      260              265              270
Asp Val Lys Ala Leu Ile Lys Thr Ala Asp Lys Asn Gly Tyr Ser Met
      275              280              285
Arg Val Leu Lys Ala Val Glu Val Asn Asn Ser Gln Lys Ser Ile
      290              295              300
Leu Phe Asn Lys Leu Ile Arg Tyr Phe Asp Gly Asn Leu Ser Gly Lys
      305              310              315              320
Arg Ile Ala Leu Trp Gly Leu Ser Phe Lys Pro Glu Thr Asp Asp Met

```

```

          325          330          335
Arg Glu Ala Pro Ala Leu Val Leu Ile Asp Lys Ile Leu Ser Cys Gly
          340          345          350
Gly Leu Val Lys Ala Tyr Asp Pro Ile Ala Val Glu Glu Cys Lys Arg
          355          360          365
Arg Ile Gly Asp Ser Ile Glu Tyr Ala Asn Asp Met Tyr Asp Ala Val
          370          375          380
Leu Asp Ala Asp Ala Leu Leu Leu Val Thr Glu Trp Lys Glu Phe Arg
          385          390          395          400
Met Pro Ser Trp Gly Val Leu Lys Lys Thr Met Asn Arg Ala Leu Ile
          405          410          415
Ile Asp Gly Arg Asn Ile Tyr Asp Lys Lys Glu Leu His Asp Met Gly
          420          425          430
Phe Glu Tyr Thr Cys Ile Gly Gln
          435          440

```

<210> 6132

<211> 699

<212> PRT

<213> B.fragilis

<400> 6132

```

Gly Pro Ser Ile Phe Ala Val Ser Lys Thr Lys Ile Met Met Lys Val
1          5          10          15
Lys Leu Ala Leu Leu Leu Thr Leu Ile Gly Thr Leu Pro Leu Ala Ala
          20          25          30
Gln Asn Val Arg Gln Glu Gln Asp Thr Val Ser Tyr Met Asn Asp Asp
          35          40          45
Pro Phe Asn Leu Glu Gln Ile Val Val Thr Ala Thr Arg Thr Glu Lys
          50          55          60
Lys Ile Lys Asn Thr Pro Val Ile Thr Gln Ile Ile Thr Ser Lys Gln
          65          70          75          80
Ile Glu Glu Arg Gly Thr Gly Asn Ile Gln Asp Leu Leu Thr Gln Glu
          85          90          95
Val Pro Gly Leu Asn Phe Gln Glu Val Gly Tyr Gly Thr Ser Ile Asp
          100          105          110
Ile Gln Gly Leu Gly Ser Lys His Ile Leu Phe Leu Ile Asp Gly Glu
          115          120          125
Arg Ile Ala Gly Glu Asn Gly Gly Asn Ile Asp Tyr Ser Arg Ile Asn
          130          135          140
Leu Tyr Asn Ile Asp His Ile Glu Ile Val Lys Gly Ala Ser Ser Ala
          145          150          155          160
Leu Tyr Gly Ser Gln Ala Met Gly Gly Val Ile Asn Ile Ile Thr Arg
          165          170          175
Lys Ala Lys Lys Lys Phe Glu Ala Ser Ala Gly Ile Arg Tyr Ala Gly
          180          185          190
Arg Asn Gln Gln Asn Tyr Lys Asp Thr Pro Lys Asp His Ser Gln Tyr
          195          200          205
Lys Tyr Arg Ile His Leu Asp Lys Pro Asn Leu Asn Thr Asn Leu Ser
          210          215          220
Leu Gly Leu Asn Leu Gly Lys Phe Thr Met Asn Thr Asp Val Leu Tyr
          225          230          235          240
Lys Ser Phe Asp Gly Tyr Gln Leu Phe Asp Lys Lys Pro Leu Val Lys
          245          250          255
Tyr Phe Pro Ala Tyr Asn Thr Thr Ile Thr Glu Glu Leu Ser Lys Thr
          260          265          270
Pro Thr Ser Ile Ser Gly Tyr Glu Asp Val Gln Val Ala His Lys Met
          275          280          285
Asp Tyr Arg Phe Ser Lys Arg Leu Lys Val Gln Leu Lys Gly Ser Tyr

```

290	295	300
Tyr Met Leu Asn Lys Tyr Asp Phe Gln Ala Asp Asn Ile Phe Glu Lys		
305	310	315
Ser Glu Asp Tyr Thr Tyr Gly Gly Ser Ile Asp Tyr Thr Ile Ser Asp		320
	325	330
Lys Ser Ser Leu Val Ala Ser Val His Thr Asp His Tyr Asn Arg Tyr		335
	340	345
Asp Lys Tyr Glu Leu Lys Ser Gly Arg Arg Leu Glu Tyr Lys Asn Asn		350
	355	360
Ile Ile Gln Pro Arg Ile Val Tyr Ser Thr Thr Ala Leu Asp Lys Gln		365
	370	375
Thr Ile Thr Gly Gly Leu Glu Tyr Tyr Arg Glu Ser Leu Phe Ser Asp		380
385	390	395
Lys Phe Glu Thr Gly Val Lys Glu Asn Lys Ser Gln Trp Tyr Ala Thr		400
	405	410
Ala Phe Leu Gln Asp Asp Trp Ser Ile Asn Lys Gln Phe Ser Val Ile		415
	420	425
Ala Gly Leu Arg Cys Asp Tyr His Glu Lys Tyr Gly Thr Asn Leu Thr		430
	435	440
Pro Lys Ala Ser Val Met Tyr Lys Ile Phe Pro Phe Thr Val Arg Phe		445
450	455	460
Asn Tyr Ala Arg Gly Tyr Arg Ser Pro Ser Ile Lys Glu Leu Tyr Met		465
465	470	475
Asn Trp Asp His Leu Gly Met Phe Trp Ile Tyr Gly Asn Ser Lys Leu		480
	485	490
Lys Pro Glu Thr Asn Asn Tyr Ile Ser Leu Ser Gly Glu Tyr Val Asn		495
	500	505
Ser Trp Ile Asn Ile Asn Ala Asn Val Tyr Ser Asn Trp Phe Arg Asn		510
	515	520
Lys Ile Glu Gly Met Trp Ser Asn Asp Gln Thr Glu Leu His Tyr Ile		525
530	535	540
Asn Ile Gly Lys Ser Arg Leu Ala Gly Val Glu Thr Met Cys Lys Ile		545
545	550	555
Gln Ile Asn Arg His Ile Asn Val His Gly Ala Tyr Asn Tyr Leu Tyr		560
	565	570
Thr Ser Lys Asp Ala Asp Gly Val Arg Leu Ser Ser Ser Ser Pro His		575
	580	585
Ser Gly Asn Ile Arg Ala Glu Tyr Asn Thr Arg Ile Pro Arg Tyr Ala		590
	595	600
Thr Val Val Asn Leu Ser Gly Asn Ile Met Gly Lys Lys Lys Phe Asp		605
610	615	620
Val Leu Asp Glu Leu Glu Ile Asp Gly Lys Lys Val Glu Ala Tyr Tyr		625
625	630	635
Gln Ala Lys Val Asn Pro Tyr Cys Leu Trp Asp Leu Thr Val Ser Gln		640
	645	650
Tyr Ile Met Gln Asn Leu Arg Ile Thr Ala Gly Ile Thr Asn Leu Phe		655
	660	665
Asp Tyr Thr Ser Asp Arg Val Thr Phe Asn Thr Ser Thr Ser Pro Gly		670
	675	680
Arg Asn Tyr Phe Ile Ala Cys Asn Tyr Thr Leu		685
690	695	

<210> 6133

<211> 392

<212> PRT

<213> B.fragilis

<400> 6133

Phe Ile Ser Ile Ala Lys Glu Met Thr Ile Ala Phe Val Tyr Arg Asn

```

1           5           10           15
Phe Pro Ser Leu Gly Gly Val Glu Arg Val Ile Val Ile Leu Ala Asn
20           25           30
Glu Met Val Lys Gln Gly Ser Lys Val Val Ile Tyr Ser Leu Glu Gln
35           40           45
Gly Leu Asn Ala Tyr Ser Leu Asp Ser Ser Ile Glu Ile Ile Cys Leu
50           55           60
Pro Gln Lys Lys Ile Leu Glu Ser Lys Glu Asn Val Asn Phe Leu Ile
65           70           75           80
Thr His Leu Cys Glu Tyr Lys Ile Glu Leu Leu Phe Asn His Asp Ser
85           90           95
Val Lys Asp Ser Ile Glu Leu Cys Arg Arg Val Lys Lys Lys Ile Asn
100          105          110
Ile Pro Val Val Thr Leu His His Gly Gln Ile Tyr Leu Pro Trp Lys
115          120          125
Ser Gln Trp Ala Ile Leu Lys Asp Lys Tyr Ser Leu Arg Val Cys Leu
130          135          140
Lys Lys Ile Phe Phe Pro Phe Phe Val Leu Ala Thr Lys Val Arg Asn
145          150          155          160
Asn Leu His His Arg Tyr Asn Ile Lys Val Cys Asp Val Tyr Val Phe
165          170          175
Leu Ala Glu Cys Tyr Lys Asp Gln Leu Gly Ile Asp Lys Lys Val Met
180          185          190
Ala Ile Pro Asn Pro Leu Ser Ser Phe Phe Phe Glu Asp Asp Cys
195          200          205
Tyr Gln Ser Lys Cys Asn Thr Val Val Met Val Gly Arg Ile Ser Asp
210          215          220
Phe His Lys Arg Ile Ile Leu Ala Leu Arg Ile Trp Lys Glu Ile Glu
225          230          235          240
Asn Cys Glu Gln Phe Asp Ser Trp Asn Phe Asp Ile Ala Gly Asp Gly
245          250          255
Pro Asp Phe Tyr Leu Ile Gln Asp Thr Ile Cys Ser Leu Gly Leu Lys
260          265          270
Arg Val Arg Leu Leu Gly Gln Val Asn Ser Phe Asp Val Tyr Lys Lys
275          280          285
Ala Lys Ile Leu Leu Leu Thr Ser Ala Phe Glu Gly Phe Pro Leu Val
290          295          300
Leu Asn Glu Ala Lys Gln Cys Ala Cys Val Pro Ile Ala Met Asp Ser
305          310          315          320
Phe Glu Ser Val His Glu Leu Ile Asn Asn Gly Glu Asp Gly Leu Ile
325          330          335
Ile Ser Asn Asn Asp Leu Asn Thr Phe Leu Glu Gly Leu Lys Tyr Leu
340          345          350
Met Ser His Asn Asp Ile Leu Arg Glu Met Ser Lys Lys Ser Val Leu
355          360          365
Asn Thr Arg Lys Tyr Glu Val Ser Arg Leu Cys Asn Ile Trp Met Asp
370          375          380
Leu Phe Lys Ser Ile Val Asn Asn
385          390

```

<210> 6134

<211> 262

<212> PRT

<213> B.fragilis

<400> 6134

```

Thr Leu Tyr Ile Ser Asn Gln Met Gln Leu Thr Leu Met Glu Gln Lys
1           5           10           15
Ile Ser Lys Tyr Ser Thr Ala Thr Ile Val Ser Leu Leu Cys Leu Leu

```

```

      20              25              30
Phe Ser Leu Pro Leu Gln Ala Gln Gln Arg Pro Gly Ala Arg Pro
      35              40              45
Ala Val Lys Gln Lys Ala Lys Glu Glu Ile Lys Ala Asp Thr Ile Pro
      50              55              60
Phe Tyr Asn Gly Thr Tyr Val Gly Val Asp Leu Phe Gly Leu Gly Ser
      65              70              75              80
Lys Leu Leu Gly Gly Asp Phe Leu Ser Ser Glu Val Asn Val Arg Val
      85              90              95
Asn Leu Lys Lys Lys Phe Ile Pro Thr Val Glu Ile Gly Phe Gly Gln
      100              105              110
Thr Asp Thr Trp Ser Asp Thr Gly Ile His Tyr Lys Ser Ala Ala Pro
      115              120              125
Tyr Phe Arg Val Gly Ala Asp Tyr Asn Val Val Lys Glu Tyr Leu Tyr
      130              135              140
Val Gly Leu Arg Tyr Gly Phe Ser Ser Phe Lys Tyr Asp Ile Ser Ser
      145              150              155              160
Thr Pro Phe Ser Asp Pro Ile Tyr Gly Gly Ser Met Ala Asn Pro Gly
      165              170              175
Leu Ile Asp Gly Ile Trp Gly Gly Ser Val Pro Tyr His Tyr Asn Gly
      180              185              190
Leu Lys Ser Asn Met Gln Trp Leu Glu Leu Val Ala Gly Val Asn Val
      195              200              205
Gln Ile Tyr Lys Ser Phe Tyr Met Gly Trp Thr Leu Arg Phe Lys Phe
      210              215              220
Lys Thr Ala Gly Ser Ile Ser Glu His Gly Asn Pro Trp Tyr Val Pro
      225              230              235              240
Gly Phe Gly Glu Tyr Asp Ser Ser Asn Ile Gly Ile Thr Tyr Thr Leu
      245              250              255
Ile Tyr Lys Leu Pro Phe
      260

```

<210> 6135

<211> 344

<212> PRT

<213> B.fragilis

<400> 6135

```

Asn Pro Asn Ile His Leu Lys Ser Ser Thr Ile Met Asn Val Glu Pro
1              5              10              15
Met Tyr Leu Thr Ile Phe Leu Ile Ala Gly Gly Ile Ile Phe Leu Val
      20              25              30
Leu Phe Phe His Tyr Val Pro Phe Phe Leu Trp Leu Ser Ala Lys Val
      35              40              45
Ser Gly Val Asn Ile Ser Leu Val Gln Leu Phe Leu Met Arg Ile Arg
      50              55              60
Asn Val Pro Pro Tyr Ile Ile Val Pro Gly Met Ile Glu Ala His Lys
      65              70              75              80
Ala Gly Leu Ser Asn Ile Thr Arg Asp Glu Leu Glu Ala His Tyr Leu
      85              90              95
Ala Gly Gly His Val Glu Arg Val Val His Ala Leu Val Ser Ala Ser
      100              105              110
Lys Ala Asn Ile Glu Leu Pro Phe Gln Ile Ala Thr Ala Ile Asp Leu
      115              120              125
Ala Gly Arg Asp Val Phe Glu Ala Val Gln Met Ser Val Asn Pro Lys
      130              135              140
Val Ile Asp Thr Pro Pro Val Thr Ala Val Ala Lys Asp Gly Ile Gln
      145              150              155              160
Leu Ile Ala Lys Ala Arg Val Thr Val Arg Ala Asn Ile Arg Gln Leu

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<210> 6137
<211> 248
<212> PRT
<213> B.fragilis
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```
<210> 6138
<211> 67
<212> PRT
<213> B.fragilis
```

```

<400> 6138
Ser Val Cys Ile Pro Lys Ser Ser Leu Tyr Phe Thr Ile Lys Ser Ala
1          5          10          15
Val Arg Ser Ser Asp Cys Gly Ile Ser Pro Leu Ser Ser Ser Trp Gln
20          25          30
Leu Gln Ser Asn Ala Asn Asn Ala Asn Lys Thr Ile Glu Tyr Leu Cys
35          40          45
Lys Leu Ile Val Pro Tyr Asn Leu Leu Val Leu Asn Met Ile Leu Leu
50          55          60
Pro Asn Ile
65

```

<210> 6139
 <211> 385
 <212> PRT
 <213> B.fragilis

<400> 6139

Tyr	Phe	Ile	Phe	Tyr	Leu	Ile	Ile	Leu	Met	Tyr	Asn	Leu	Phe	Ile	Val
1				5					10					15	
Val	Asn	Val	Asp	Trp	Phe	Phe	Leu	Ser	His	Arg	Lys	Asp	Ile	Ala	Leu
			20					25					30		
Thr	Ala	Gln	Lys	Ser	Gly	Tyr	Asn	Val	Thr	Ile	Val	Thr	Lys	Asp	Thr
		35					40					45			
Gly	Lys	Lys	Lys	Asp	Ile	Glu	Ser	Leu	Gly	Leu	Lys	Val	Ile	Asp	Leu
	50					55					60				
Pro	Met	Asn	Arg	Ser	Gly	Gln	Asn	Leu	Leu	Glu	Glu	Leu	His	Thr	Cys
65				70						75				80	
Trp	Phe	Leu	Tyr	His	Leu	Tyr	Arg	Arg	Glu	Asn	Pro	Asp	Ile	Val	His
				85					90					95	
His	Val	Gly	Leu	Lys	Thr	Ile	Leu	Trp	Gly	Thr	Leu	Ala	Ala	Lys	Leu
			100					105						110	
Ala	Asn	Ile	His	Gly	Ile	Val	Asn	Ala	Val	Ser	Gly	Leu	Gly	Ile	Phe
		115					120					125			
Phe	Ser	Glu	Gly	Asn	Arg	Ser	Ile	Ile	Ser	Lys	Leu	Leu	Pro	Lys	Val
	130					135					140				
Leu	Arg	Phe	Ser	His	Tyr	Arg	Asn	Asn	Val	Ala	Val	Ile	Phe	Gln	Asn
145				150						155				160	
Asp	Glu	Asp	Lys	Ser	Leu	Phe	Leu	Lys	His	Gln	Ile	Ile	Lys	Glu	Ser
				165					170					175	
Gln	Ala	Tyr	Lys	Ile	Lys	Gly	Ser	Gly	Val	Asp	Leu	Lys	Gln	Tyr	Asn
		180						185					190		
Tyr	Thr	Pro	Glu	Pro	Glu	Glu	Gly	Lys	Ile	Lys	Val	Leu	Leu	Thr	Ala
		195					200					205			
Arg	Met	Ile	Val	Glu	Lys	Gly	Ile	Phe	Ile	Leu	Thr	Asp	Ser	Ala	Ile
	210					215						220			
Lys	Leu	Arg	Lys	Gln	Tyr	Gln	Gly	Lys	Val	Gln	Phe	Leu	Leu	Cys	Gly
225				230						235				240	
Gly	Leu	Asp	Asp	Asn	Pro	Met	Ala	Ile	Lys	Glu	Ser	Glu	Leu	Gln	Ala
				245					250					255	
Val	Cys	Asp	Gly	Lys	Tyr	Ile	Lys	Trp	Leu	Gly	Tyr	Arg	Thr	Asp	Val
			260					265					270		
Leu	Asp	Leu	Leu	Lys	Asp	Cys	His	Ile	Val	Ala	Phe	Pro	Ser	Tyr	Tyr
	275					280						285			
Lys	Glu	Gly	Leu	Pro	Lys	Ser	Leu	Ile	Glu	Ala	Thr	Ala	Ile	Gly	Arg
	290					295					300				
Pro	Ile	Ile	Thr	Thr	Asn	Ser	Ile	Gly	Cys	Lys	Glu	Thr	Val	Ile	Asp
305					310					315				320	
Gly	Tyr	Asn	Gly	Tyr	Leu	Ile	Pro	Ile	Lys	Asp	Ser	Asp	Met	Leu	Ala
			325						330					335	
Ser	Arg	Leu	Ser	Phe	Leu	Phe	Glu	Asn	Lys	Asp	Val	Arg	Gln	Ser	Met
		340					345						350		
Gly	Arg	Asn	Ser	Arg	Lys	Leu	Ala	Glu	Lys	Asp	Phe	Ser	Ile	Asp	Asp
	355					360						365			
Val	Ile	Lys	Lys	His	Leu	Asp	Ile	Tyr	Arg	Thr	Leu	Val	Ile	Gly	Thr
	370					375					380				
Leu															
385															

<210> 6140

<211> 473
 <212> PRT
 <213> B.fragilis

<400> 6140

Trp	Ser	Ile	Phe	Arg	Ile	Thr	Leu	Leu	Thr	Val	Gly	Glu	Arg	Thr	Ile
1			5						10					15	
Leu	Ser	Leu	Arg	Phe	Arg	Val	Glu	Thr	Leu	Thr	Ala	Asp	Asn	Ala	Phe
			20					25					30		
Ile	Lys	Arg	Tyr	Trp	Glu	Thr	Ser	Tyr	Lys	Arg	Ile	Gly	Tyr	Cys	Asn
		35					40					45			
Arg	Phe	Leu	Val	Gly	Ile	Gln	Asn	Asn	Ser	Glu	Ser	Glu	Lys	Lys	Thr
	50					55					60				
Arg	Met	Ile	Ala	Glu	Ala	Arg	Phe	Leu	Arg	Ala	Thr	Gln	Tyr	Phe	Tyr
65				70					75					80	
Leu	Ala	Ser	Tyr	Phe	Lys	Asn	Val	Pro	Leu	Val	Glu	Asn	Val	Leu	Thr
				85				90						95	
Gly	Glu	Glu	Ala	Asn	Asn	Val	Thr	Lys	Thr	Ser	Gln	Ala	Asp	Ile	Leu
			100					105					110		
Lys	Trp	Cys	Val	Thr	Glu	Phe	Thr	Ala	Ala	Ala	Ala	Asp	Leu	Pro	Arg
		115					120					125			
Phe	Ser	Ala	Ile	Pro	Ala	Gly	Glu	Ala	Gly	Arg	Ala	Cys	Lys	Gln	Ala
		130				135					140				
Ala	Leu	Ala	Phe	Leu	Gly	Arg	Thr	Cys	Met	Leu	Gln	Lys	Asp	Trp	Lys
145				150					155					160	
Ser	Gly	Ala	Lys	Ala	Phe	His	Asp	Ile	Met	Glu	Leu	Gly	Asp	Asn	Ala
			165					170						175	
Ile	Asn	Ala	Asn	Tyr	Gln	Glu	Leu	Phe	Tyr	Pro	Ser	Thr	Gly	Thr	Ser
			180					185					190		
Asn	Lys	Glu	Asn	Ile	Phe	Tyr	Ile	Gln	Tyr	Leu	Glu	Asn	Tyr	Leu	Gly
		195					200					205			
Thr	Gly	Leu	Pro	Gln	His	Ala	Leu	Ser	Ala	Lys	Asp	Gly	Gly	Trp	Ser
		210				215					220				
Leu	Val	Asn	Pro	Ala	Ala	Asp	Leu	Tyr	Glu	Ser	Tyr	Glu	Phe	Lys	Asp
225				230					235					240	
Gly	Thr	Pro	Phe	Ser	Tyr	Asp	Asp	Pro	Arg	Tyr	Asp	Pro	Ser	Asn	Leu
			245					250						255	
Gly	Lys	Asp	Arg	Asp	Pro	Arg	Leu	Asp	Tyr	Thr	Ile	Tyr	Tyr	Asn	Gly
		260					265						270		
Ala	Ile	Phe	Met	Gly	Thr	Glu	Tyr	Lys	Met	Ser	Pro	Asp	Tyr	Ser	Ala
		275				280						285			
Ala	Lys	Lys	Glu	Lys	Leu	Asp	Tyr	Thr	Ser	Glu	Ala	Ser	Arg	Thr	Gly
		290				295					300				
Phe	Met	Met	Arg	Lys	Tyr	Phe	Glu	Glu	Ser	Thr	Pro	Ile	Asn	Asp	Val
305				310					315					320	
Gln	Ser	Ala	Asn	Gly	Leu	Thr	Pro	Val	Ile	Arg	Tyr	Ala	Glu	Val	Leu
			325					330						335	
Leu	Gly	Tyr	Leu	Glu	Cys	Leu	Val	Glu	Asp	Asn	Gln	Thr	Ile	Thr	Gln
		340						345					350		
Gly	Ile	Leu	Asp	Glu	Thr	Ile	Asn	Ala	Val	Arg	Gly	Arg	Ala	Ser	Val
		355				360					365				
Asn	Met	Pro	Pro	Val	Thr	Glu	Val	Thr	Pro	Ala	Lys	Leu	Arg	Glu	Ile
		370				375					380				
Val	Arg	His	Glu	Arg	Arg	Ile	Glu	Leu	Ala	Met	Glu	Gly	Ile	Arg	Tyr
385				390					395					400	
Trp	Asp	Ile	Met	Arg	Trp	Gly	Ile	Ala	His	Glu	Val	Leu	Ser	Gln	Lys
			405					410						415	
Ile	Trp	Gly	Ala	Pro	Tyr	Pro	Gly	Ser	Thr	Gln	Tyr	Ala	Thr	Thr	Thr
			420					425					430		

Lys Glu Val Asp Pro Thr Gly Asn Tyr Arg Trp Tyr Val Gly Lys Arg
 435 440 445
 Ala Phe Arg Asn Pro Thr Asp Tyr Thr Trp Pro Ile Pro Gln Ser Glu
 450 455 460
 Gln Asn Ile Asn Pro Asn Leu Arg Asp
 465 470

<210> 6141

<211> 955

<212> PRT

<213> B.fragilis

<400> 6141

Asn Gln Leu Met Leu Lys Ser Lys Tyr Leu Phe Leu Ser Leu Ile Cys
 1 5 10 15
 Leu Leu Thr Ser Phe Arg Leu His Ala Gln Phe Met Asp Tyr Gly Ser
 20 25 30
 Asp Pro Ala Lys Phe Lys Trp Asn Ile Ala Arg Leu Pro His Tyr Asn
 35 40 45
 Leu Val Tyr Pro Gln Gly Asn Asp Ser Met Ala Tyr Arg Tyr Ala Leu
 50 55 60
 Phe Leu Glu Asn Val Tyr Pro His Met Ser Lys Thr Ile Gly Lys Pro
 65 70 75 80
 Ile Lys Ala Lys Phe Pro Val Ile Leu His Pro Gly Asn Met Gln Ser
 85 90 95
 Asn Gly Met Val Ser Trp Ala Pro Arg Arg Met Glu Leu Ile Thr Thr
 100 105 110
 Pro Ser Ser Asp Leu Asn Asn Gln Ser Trp Asp Lys His Leu Val Leu
 115 120 125
 His Glu Ser Arg His Val Phe Gln Thr Gly Lys Val Met His Gly Ile
 130 135 140
 Phe Lys Pro Leu Tyr Tyr Ile Ile Gly Glu Gln Ala Ala Gly Val Ala
 145 150 155 160
 Ser Phe Phe Leu Pro Val Trp Phe Leu Glu Gly Asp Ala Val Ser Thr
 165 170 175
 Glu Thr Ala Met Ser Asn Gly Gly Arg Gly Arg Leu Pro Glu Phe Asn
 180 185 190
 Met Val Tyr Arg Ala Gln Met Leu Gly Gly Lys Lys Asn Tyr Ser Phe
 195 200 205
 Asp Lys Trp Leu Met Gly Ser Tyr Lys Asn Tyr Thr Gly Thr Tyr Tyr
 210 215 220
 Ala Leu Gly Phe Asp Met Thr Ser Tyr Ala Arg Gln Arg Tyr Gly Ala
 225 230 235 240
 Asp Ile Trp Asp Lys Ser Thr Ser Arg Tyr Ile Arg Asn Leu Leu Phe
 245 250 255
 Glu Gly Ser Phe Lys His Tyr Thr Gly Ser Ser Phe Lys Arg Leu Gln
 260 265 270
 His Asp Thr Phe Asp Phe Leu Arg Ala Glu Trp Glu Lys Gln Asp Thr
 275 280 285
 Cys Thr Gln Ser Pro Gln Tyr Leu Ser Pro Thr Lys Glu Thr Tyr Thr
 290 295 300
 Ser Tyr Arg Tyr Pro Gln Pro Ile Asn Asp Ser Ile Val Ile Thr Val
 305 310 315 320
 Lys Ser Gly Leu Lys Asp Ile Asn Ser Leu Val Ile Ile Asn Asn Gly
 325 330 335
 Arg Glu Lys His Leu Asp Tyr Ile Gly Ser Ile Asn Ser Arg Leu Ser
 340 345 350
 Tyr Arg Asn Gly Arg Val Tyr Trp Ser Glu Leu Val Pro Gly Leu Arg
 355 360 365

Trp Thr His Gln Asn Tyr Ser Ile Ile Lys Tyr Tyr Asp Leu Asp Lys
 370 375 380
 Lys Asn Ile Lys Ala Leu Thr Pro Arg Gln Arg Tyr Leu Ser Pro Ala
 385 390 395 400
 Ile Asp Glu Gln Gly Gln His Ile Ala Val Ser Arg Pro Thr Val Glu
 405 410 415
 Gly Lys Asn Gln Leu Val Leu Ile Gln Ala Glu Lys Gly Asn Glu Leu
 420 425 430
 Ala Ala Phe Asp Val Pro Asp Asn Ala Phe Ile Lys Glu Leu Thr Phe
 435 440 445
 Ala Gly Gly Asp Thr Ile Ile Ser Ile Ala Val Ala Asp Ser Gly Ile
 450 455 460
 Arg Leu Leu Gln Phe Asn Phe Gly Asn Gly Ile Trp Lys Glu Leu Leu
 465 470 475 480
 Lys Thr Ala Ser Ala Asn Ile Thr Ser Pro Val Trp Lys Asp Gly Lys
 485 490 495
 Ile Phe Phe Glu Ser Gly Ala Asn Gly Ile Asn Asn Ile Tyr Ser Leu
 500 505 510
 Asn Pro Ala Asp Gly Gln Val Arg Arg Met Thr Ala Ala Arg Phe Gly
 515 520 525
 Ala Phe Asp Pro Ser Phe Gly Ser Ser Asp Gly Arg Leu Phe Phe Ser
 530 535 540
 Asp Tyr Gln Ala Asp Gly Tyr Arg Ile Ala Ser Leu Pro Thr Asp Ser
 545 550 555 560
 Met Leu Phe Glu Lys Ala Asp Leu Asn Arg Pro Ala Ser Met Pro Phe
 565 570 575
 Val Glu Thr Leu Ala Ala Gln Glu Gln Phe Asn Leu Asp Ser Ala Arg
 580 585 590
 Leu Thr Ser Val Asp Phe Asn Pro Lys Arg Tyr Arg Lys Ala Glu His
 595 600 605
 Thr Phe Lys Ile His Ser Trp Ala Pro Phe Tyr Tyr Asp Val Ala Glu
 610 615 620
 Ala Met Asn Ser Gly Ala Ser Asp Leu Ser Thr Ile Val Lys Pro Gly
 625 630 635 640
 Ala Thr Leu Met Ser Gln Asn Thr Leu Asn Thr Ala Ile Met Gln Ala
 645 650 655
 Gly Trp Tyr Ile Asp Lys Gly Tyr His His Gly Lys Leu Ser Phe Ile
 660 665 670
 Tyr Gln Gly Trp Phe Pro Val Ile Asn Leu Ser Val Asp Tyr Gly Asp
 675 680 685
 Lys Ala Phe Asn Val Asp Trp Thr Gln Asn Asp Lys Gly Gln Asp Ile
 690 695 700
 Thr Gln Gly His Tyr Thr Gln Arg Asn Leu Val Glu Ala Glu Ala Arg
 705 710 715 720
 Val Tyr Leu Pro Phe Asn Leu Thr His Asn Gln Arg Ile Arg Gly Ile
 725 730 735
 Gln Pro Ala Leu Thr Tyr Tyr Phe Thr Asn Asn Lys Tyr Gln Glu Tyr
 740 745 750
 His Ser Arg Lys Phe His Asn Phe Gln Tyr Ile Leu Pro Glu Ile Leu
 755 760 765
 Phe Tyr Asp Tyr Arg Arg Lys Ala Gln Arg Asp Ile Leu Pro Arg Thr
 770 775 780
 Gly Tyr Gln Leu Arg Leu Gln Tyr Leu Lys Thr Pro Phe Asn Ser Glu
 785 790 795 800
 Asn Tyr Gly Ser Leu Tyr Ala Ala Arg Leu Thr Thr Tyr Trp Pro Gly
 805 810 815
 Ile Ile Arg Asn His Gly Leu Met Ile Arg Val Gly Tyr Gln Tyr Gln
 820 825 830
 Asp Leu Asp Asn Lys Ala Leu Tyr Leu Pro Lys His Leu Leu Glu Lys

835 840 845
 Pro Arg Gly Tyr His Phe Gln Tyr Gln Thr Arg Gln Gln Trp Ala Phe
 850 855 860
 Lys Thr Asp Tyr Ala Leu Pro Leu Leu Ser Pro Asp Trp Ser Ile Gly
 865 870 875 880
 Ser Leu Ile Tyr Ile Arg Arg Leu Arg Ala Asn Leu Phe Tyr Asp Leu
 885 890 895
 Ser Arg Asn Gln Ala Ser Ser Lys Ser Arg Trp Ser Asn Gln Ser Ser
 900 905 910
 Tyr Gly Gly Asp Leu Ile Phe Asp Trp Asn Val Leu Arg Met Ser Tyr
 915 920 925
 Pro Leu Thr Thr Gly Ile Arg Leu Ile Gln Pro Ile Asp Tyr Gly Lys
 930 935 940
 Phe Gln Val Glu Ala Leu Phe Ser Ile Ser Phe
 945 950 955

<210> 6142
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 6142
 Leu Phe Ile Met Asn Gly Leu Tyr Lys Arg Ser Met Ile Asp Leu Ala
 1 5 10 15
 Leu Ser Asp Ser Thr Pro Thr Thr Thr Arg Ser Gly Phe Met Lys Ser
 20 25 30
 Ser Thr Ala Ser Pro Ser Phe Arg Asn Ser Gly Leu Glu Ala Thr Ser
 35 40 45
 Asn Ser Arg Phe Lys Pro Arg Leu Ser Asn Ser Pro Arg Ile Val Ala
 50 55 60
 Phe Thr Cys Cys Ala Val Pro Thr Gly Thr Val Leu Phe Val Thr Thr
 65 70 75 80
 Ser Thr

<210> 6143
 <211> 506
 <212> PRT
 <213> B.fragilis

<400> 6143
 Lys Phe Thr Met Lys Ile Phe Pro Ser Ser Ser Ile Lys Lys Leu Asp
 1 5 10 15
 Ala Tyr Thr Ile Glu His Glu Pro Ile Ala Ser Ile Asp Leu Met Glu
 20 25 30
 Arg Ala Ala Gln Ala Leu Thr Lys Ala Ile Thr Glu Arg Trp Asp Ile
 35 40 45
 Thr Thr Pro Val Thr Val Phe Ala Gly Pro Gly Asn Asn Gly Gly Asp
 50 55 60
 Ala Leu Ala Val Ala Arg Met Leu Ala Glu Lys Glu Tyr Lys Val Glu
 65 70 75 80
 Ala Tyr Leu Phe Asn Pro Lys Gly Glu Leu Ser Ala Asp Cys Gln Thr
 85 90 95
 Asn Lys Glu Leu Val Glu Thr Met Asp Asn Val Lys Phe Ser Glu Val
 100 105 110
 Ser Thr Gln Phe Val Pro Pro Ala Leu Thr Met Asp His Leu Val Val
 115 120 125
 Asp Gly Leu Phe Gly Ser Gly Leu Asn Lys Pro Leu Ser Gly Gly Phe
 130 135 140

Ala Ala Val Val Lys Tyr Ile Asn Ala Ser Pro Ala Thr Val Val Ala
 145 150 155 160
 Ile Asp Ile Pro Ser Gly Leu Met Gly Glu Glu Asn Thr Phe Asn Val
 165 170 175
 Lys Ala Asn Ile Ile Arg Ala Gln Leu Thr Leu Ser Leu Gln Leu Pro
 180 185 190
 Lys Leu Ala Phe Leu Phe Ala Glu Asn Ser Glu Phe Val Gly Glu Trp
 195 200 205
 Lys Leu Leu Asp Ile Asn Leu Ser Arg Glu Ala Ile Glu Glu Thr Glu
 210 215 220
 Ser Asn Tyr Ala Leu Leu Glu Ala Glu Glu Ile His Ala Leu Ile Lys
 225 230 235 240
 Pro Arg Asn Thr Phe Ser His Lys Gly Asn Phe Gly His Ala Leu Leu
 245 250 255
 Ile Ala Gly Ser Tyr Gly Met Ala Gly Ala Ser Ile Leu Ala Ala Arg
 260 265 270
 Ala Cys Met Arg Ser Gly Val Gly Leu Leu Thr Val His Ala Pro Ile
 275 280 285
 Arg Asn Asn Asp Ile Leu Gln Ile Ser Val Pro Glu Ala Ile Ile Glu
 290 295 300
 Ser Asp Ala Ser Asp Thr Tyr Phe Ala Cys Pro Thr Asp Thr Asp Asp
 305 310 315 320
 Tyr Gln Ala Val Gly Ile Gly Pro Gly Ile Gly Arg Ser Glu Glu Thr
 325 330 335
 Glu Ala Ala Leu Leu Glu Gln Leu Ser Gly Cys Gln Thr Pro Leu Val
 340 345 350
 Leu Asp Ala Asp Ala Leu Asn Ile Leu Ala Asn His Arg His Ala Leu
 355 360 365
 Thr Thr Leu Pro Lys Gly Ser Ile Leu Thr Pro His Pro Lys Glu Leu
 370 375 380
 Glu Arg Met Val Gly Lys Cys Gln Asn Ser Tyr Glu Arg Leu Met Lys
 385 390 395 400
 Ala Cys Glu Leu Ala Arg Thr Ala Lys Val His Ile Ile Leu Lys Gly
 405 410 415
 Ala Tyr Ser Ala Ile Ile Thr Pro Ser Gly Lys Cys Tyr Phe Asn Ser
 420 425 430
 Thr Gly Asn Pro Gly Met Ala Thr Ala Gly Ser Gly Asp Val Leu Thr
 435 440 445
 Gly Val Val Leu Ala Leu Leu Ala Gln Gly Tyr Pro Ala Glu Glu Ala
 450 455 460
 Ala Lys Ile Gly Thr Tyr Val His Gly Leu Ala Gly Asp Phe Ala Arg
 465 470 475 480
 Lys Lys Gln Gly Val Ile Ser Met Thr Ala Gly Asp Ile Ile Ser Asn
 485 490 495
 Leu Pro Leu Ala Trp Arg Leu Val Ser Glu
 500 505

<210> 6144

<211> 717

<212> PRT

<213> B.fragilis

<400> 6144

Ile Val Leu Ile Lys Met Ala Thr Leu Gln Asn Ile Arg Ser Lys Gly
 1 5 10 15
 Pro Leu Leu Val Ile Val Ile Gly Leu Ala Leu Phe Ala Phe Ile Ala
 20 25 30
 Gly Asp Ala Trp Lys Val Leu Gln Pro His Gln Ser His Asp Val Gly
 35 40 45

Glu	Val	Asn	Gly	Glu	Thr	Leu	Ser	Ala	Gln	Asp	Tyr	Gln	Asn	Met	Val
50						55					60				
Glu	Glu	Tyr	Thr	Glu	Val	Ile	Lys	Phe	Ser	Ser	Gly	Met	Ser	Ser	Leu
65					70					75					80
Asn	Asp	Glu	Gln	Thr	Asn	Gln	Val	Lys	Asp	Glu	Val	Trp	Arg	Ser	Tyr
				85					90					95	
Val	Asn	Asn	Lys	Leu	Ile	Glu	Lys	Glu	Ala	Lys	Lys	Leu	Gly	Ile	Thr
			100					105					110		
Val	Ser	Lys	Ala	Glu	Ile	Gln	Ser	Ile	Ile	Asn	Glu	Gly	Val	Asn	Pro
		115					120					125			
Leu	Leu	Gln	Gln	Thr	Pro	Phe	Arg	Asn	Pro	Gln	Thr	Gly	Ala	Phe	Asp
		130				135					140				
Lys	Asp	Met	Leu	Lys	Lys	Phe	Leu	Ala	Asp	Tyr	Ser	Lys	Met	Asp	Lys
145					150					155					160
Thr	Lys	Met	Pro	Ser	Gln	Tyr	Val	Glu	Tyr	Tyr	Glu	Gly	Met	His	Lys
				165					170					175	
Leu	Trp	Ser	Phe	Val	Glu	Lys	Thr	Leu	Ile	Gln	Ser	Arg	Leu	Ala	Glu
			180					185					190		
Lys	Tyr	Gln	Ala	Leu	Val	Thr	Lys	Ala	Leu	Phe	Ser	Asn	Pro	Val	Glu
		195					200					205			
Ala	Gln	Asp	Ala	Phe	Asp	Ala	Arg	Val	Asn	Gln	Ser	Asp	Val	Leu	Leu
		210					215				220				
Ala	Ala	Val	Pro	Tyr	Ser	Ser	Ile	Val	Asp	Ser	Thr	Ile	Thr	Val	Lys
225						230				235					240
Glu	Ser	Glu	Leu	Lys	Asp	Leu	Tyr	Asn	Lys	Lys	Lys	Glu	Gln	Phe	Lys
				245					250					255	
Gln	Tyr	Val	Glu	Thr	Arg	Asn	Ile	Lys	Tyr	Ile	Asp	Val	Gln	Val	Thr
			260					265					270		
Ala	Ser	Ala	Glu	Asp	Arg	Ala	Ala	Ile	Gln	Gln	Glu	Val	Thr	Asp	Tyr
		275					280					285			
Thr	Asn	Gln	Leu	Ala	Thr	Ala	Asn	Gly	Asp	Tyr	Thr	Thr	Phe	Ile	Arg
		290					295				300				
Ser	Thr	Gly	Ser	Glu	Tyr	Pro	Tyr	Val	Asp	Leu	Tyr	Tyr	Thr	Lys	Lys
305					310					315					320
Ala	Phe	Pro	Ser	Asp	Val	Val	Ala	Arg	Met	Asp	Ser	Ala	Ser	Ile	Gly
			325						330					335	
Gln	Val	Tyr	Gly	Pro	Tyr	Tyr	Asn	Ala	Gly	Asp	Asn	Thr	Ile	Asn	Ser
			340					345					350		
Phe	Lys	Val	Leu	Ser	Lys	Val	Ala	Ala	Ala	Asp	Ser	Val	Gln	Phe	Arg
		355					360					365			
Gln	Ile	Gln	Val	Tyr	Thr	Glu	Asp	Ala	Ala	Lys	Thr	Lys	Ala	Leu	Ala
			370				375				380				
Asp	Ser	Ile	Tyr	Thr	Ala	Ile	Lys	Gly	Gly	Ala	Asp	Phe	Thr	Ala	Leu
385					390					395					400
Ala	Lys	Lys	Tyr	Gly	Gln	Thr	Gly	Glu	Ser	Asn	Trp	Ile	Ser	Ser	Ala
			405						410					415	
Asn	Tyr	Glu	Asn	Ala	Gln	Val	Asp	Gly	Asp	Asn	Leu	Lys	Phe	Ile	Ser
			420					425					430		
Thr	Ile	Asn	Asn	Leu	Gly	Val	Asn	Glu	Leu	Ser	Asn	Val	Ala	Leu	Gly
		435					440					445			
Gln	Gly	Asn	Ile	Ile	Leu	Gln	Val	Thr	Asp	Lys	Lys	Ala	Val	Lys	Asp
		450					455				460				
Lys	Tyr	Lys	Val	Ala	Val	Ile	Lys	Arg	Ala	Val	Glu	Phe	Ser	Lys	Glu
465					470					475					480
Thr	Tyr	Asn	Lys	Ala	Tyr	Asn	Glu	Phe	Ser	Gln	Phe	Ile	Ala	Ala	Asn
			485						490					495	
Pro	Thr	Val	Asp	Lys	Val	Ala	Ala	Asn	Ala	Glu	Glu	Ser	Gly	Tyr	Lys
			500					505					510		
Leu	Leu	Glu	Arg	Asn	Asp	Leu	Tyr	Ser	Ser	Glu	His	Gly	Ile	Gly	Gly

515 520 525
 Ile Arg Gly Thr Lys Glu Ala Leu Lys Trp Ala Phe Ala Ala Lys Pro
 530 535 540
 Gly Glu Val Ser Gly Leu Tyr Glu Cys Gly Glu Ser Asp Arg Met Leu
 545 550 555 560
 Val Val Gly Leu Val Ser Val Ile Glu Glu Gly Tyr Arg Pro Leu Ala
 565 570 575
 Gln Val Gln Asp Gln Leu Arg Ala Glu Ile Ile Arg Asp Lys Lys Ala
 580 585 590
 Glu Lys Ile Met Ala Asp Met Lys Ala Ala Asn Ala Thr Thr Ile Ala
 595 600 605
 Gln Tyr Thr Ser Met Ala Asn Ala Val Ser Asp Ser Val Lys His Val
 610 615 620
 Thr Phe Ala Ala Pro Ala Tyr Val Ala Ala Leu Arg Ser Ser Glu Pro
 625 630 635 640
 Leu Val Gly Ala Tyr Ala Ser Val Ser Asp Ile Asn Lys Leu Ser Ala
 645 650 655
 Pro Ile Lys Gly Asn Gly Gly Val Phe Val Leu Gln Val Tyr Ala Lys
 660 665 670
 Asp Lys Leu Asn Glu Thr Phe Asp Ala Gln Ser Glu Glu Ala Thr Leu
 675 680 685
 Glu Asn Met His Ala Arg Leu Ala Ser Arg Phe Met Asn Asp Leu Tyr
 690 695 700
 Leu Lys Gly Asp Val Lys Asp Lys Arg Tyr Leu Phe Phe
 705 710 715

<210> 6145
 <211> 427
 <212> PRT
 <213> B.fragilis

<400> 6145
 Thr Ile Ile Met Val Gly Tyr Lys Gln Thr Leu Cys Ala Leu Leu Leu
 1 5 10 15
 Thr Ile Leu Leu Pro Gly Val Ala Ile Ala Gln Asn Asn Thr Asn Ser
 20 25 30
 Pro Tyr Thr Arg Tyr Gly Tyr Gly Gln Leu Ala Asp Gln Ser Phe Ala
 35 40 45
 Asn Ser Lys Ala Met Gly Gly Ile Ala Tyr Gly Leu Arg Asp Gly Ser
 50 55 60
 His Ile Asn Pro Leu Asn Pro Ala Ser Tyr Thr Ala Ile Asp Ser Leu
 65 70 75 80
 Thr Phe Leu Phe Asp Gly Gly Phe Ser Met Gln Asn Thr Asn Phe Ser
 85 90 95
 Ser Glu Gly Thr Lys Leu Asn Ala Lys Asn Ser Ser Phe Asp Tyr Ile
 100 105 110
 Ala Met Gln Phe Arg Leu His Gln Arg Val Ala Met Ser Ile Gly Leu
 115 120 125
 Leu Pro Tyr Ser Ser Val Gly Tyr Asn Met Ala Lys Ala Asn Asn Asp
 130 135 140
 Val Ala Ser Glu Glu Ala Arg Ser Val Thr Ser Phe Ala Gly Asp Gly
 145 150 155 160
 Gly Leu His Gln Leu Tyr Val Gly Leu Gly Val Lys Val Leu Lys Asn
 165 170 175
 Leu Ser Val Gly Ala Asn Val Ser Tyr Phe Trp Gly Glu Ile Thr Arg
 180 185 190
 Gln Ala Arg Ile Thr Phe Pro Tyr Asn Asp Asn Ala Phe Ala Phe Gln
 195 200 205
 His Val Asp Tyr Leu Ser Val Arg Asp Tyr Lys Leu Asp Phe Gly Ala

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      210                      215                      220
Gln Tyr Thr Gln Gln Leu Gly Arg Lys His Ala Val Thr Leu Gly Val
225                      230                      235                      240
Val Phe Ser Pro Lys Lys Asp Leu His Asn Glu Ala Tyr Val Gln Arg
      245                      250                      255
Ser Thr Leu Thr Asn Ser Asn Ser Thr Gln Ala Val Thr Thr Asn Thr
      260                      265                      270
Val Asp Thr Val Ala Thr Phe Gly Met Pro Asn Ser Phe Gly Val Gly
      275                      280                      285
Leu Thr Tyr Glu Tyr Asp Lys Arg Leu Ile Val Gly Ala Asp Phe Asn
      290                      295                      300
Leu Gln Lys Trp Gly Asp Val Thr Tyr Met Asn Gln Pro Asn Ala Phe
305                      310                      315                      320
Cys Asp Ala Met Lys Ile Ser Val Gly Ala Glu Tyr Met Pro Ser Arg
      325                      330                      335
Phe Ser Arg Ser Tyr Leu Ala His Ile Lys Tyr Arg Val Gly Gly Tyr
      340                      345                      350
Tyr Ser Glu Pro Tyr Tyr Lys Ile Gly Gly Glu Arg Ala Ser Arg Glu
      355                      360                      365
Tyr Gly Val Thr Ala Gly Leu Gly Leu Pro Leu Pro Gly Ser Arg Ser
      370                      375                      380
Leu Ile Asn Val Ser Ala Gln Tyr Ile Lys Val His Gly Leu Lys Ala
385                      390                      395                      400
Gly Met Val Asp Glu Asn Thr Leu Arg Leu Ser Ile Gly Ile Thr Phe
      405                      410                      415
Asn Glu Gly Trp Phe Phe Lys Arg Lys Val Lys
      420                      425

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<210> 6146
<211> 218
<212> PRT
<213> B.fragilis

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<400> 6146
Thr Lys Thr Ile Met Asn Asn Lys Asn Lys Phe Arg Phe Ala Ile Leu
1          5          10          15
Leu Phe Gly Val Leu Ser Ala Phe Ile Thr Thr Ala Cys Ser Asp Asn
20          25          30
Asn Ser Pro Asp Asp Pro Ala Gln Gly Glu Asn Thr Leu Pro Val Lys
35          40          45
Gln Val Ser Leu Ser Arg Lys Thr Ala Tyr Gly Asn Asp Trp Ile Tyr
50          55          60
Tyr Ser Leu Glu Lys Gly Lys Glu Val Ser Val Ser Glu Glu Ser His
65          70          75          80
Ala Glu Asn Thr Asp Trp Asp Ile Ala Phe Asn Arg Tyr Asn Val Arg
85          90          95
Thr Asn Ser Gly Ala Ser Gly Lys Gly Lys Gly Gly Ala Leu Leu Thr
100         105         110
Asn Ile Lys Asp Leu Ala Ala Cys Thr Thr Val Pro Gln Gly Thr Phe
115         120         125
Thr Val Asp Ala Ala Tyr Thr Ile Thr Ala Pro Gly Thr Gly Phe Pro
130         135         140
Pro Pro Thr Met Glu Ser Thr Ala Asn Glu Val Leu Cys Lys Ala Ile
145         150         155         160
Thr Phe Ala Gly Pro Pro Pro Thr Tyr Thr Pro Ser Asp Tyr Val Phe
165         170         175
Ile Val Arg Thr Ala Ser Gly Lys Tyr Ala Lys Leu Lys Ala Lys Ser
180         185         190
Phe Tyr Asp Asp Glu Gly Lys Ser Gly Ile Tyr Ser Phe Glu Tyr Ala

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195 200 205
 Ile Gln Pro Asp Gly Ser Thr Asn Leu Asn
 210 215

<210> 6147
 <211> 485
 <212> PRT
 <213> B.fragilis

<400> 6147

Leu Tyr Met Met Ile Lys Asn Leu Lys Leu Ala Ala Leu Asn Ser Leu
 1 5 10 15
 Met Trp Asn Ala Val Glu Lys Met Ser Gly Gln Ala Leu Arg Phe Ile
 20 25 30
 Leu Thr Ile Val Ile Ala Arg Leu Val Ser Pro Ala Asp Phe Gly Leu
 35 40 45
 Ile Ala Met Leu Ser Ile Phe Leu Ser Val Ala Gln Ser Phe Ile Asp
 50 55 60
 Cys Gly Phe Tyr Asn Ala Leu Val Gln Lys Gln Asp Arg Thr Glu Val
 65 70 75 80
 Asp Tyr Ser Thr Met Phe Tyr Ser Asn Val Leu Ile Ser Val Val Val
 85 90 95
 Tyr Phe Phe Leu Tyr Trp Ser Ala Pro Tyr Ile Ala Ser Phe Tyr Ser
 100 105 110
 Gln Pro Glu Leu Lys Gln Ile Thr Arg Val Met Gly Val Ser Leu Ile
 115 120 125
 Ile Ser Ala Phe Arg Ile Val Gln Gln Ala Lys Leu Val Ile Ala Leu
 130 135 140
 Asn Phe Arg Ile Gln Ala Val Phe Ser Val Ile Ala Val Val Val Ser
 145 150 155 160
 Gly Leu Ile Gly Ile Tyr Met Ala Tyr His Gln Phe Gly Val Trp Ala
 165 170 175
 Leu Val Val Gln Ser Leu Val Ser Ala Phe Ile Ser Thr Val Ser Phe
 180 185 190
 Trp Ile Tyr Ser Arg Trp Met Pro Leu Trp Thr Phe Ser Ile Gln Ser
 195 200 205
 Phe Gln Glu Leu Phe Ser Phe Gly Ser Lys Leu Leu Ala Gly Val
 210 215 220
 Leu His Thr Ile Tyr Ser Asn Leu Tyr Thr Ile Val Ile Gly Arg Lys
 225 230 235 240
 Phe Ser Ser Val Asp Leu Gly Phe Phe Ser Arg Gly Gln Thr Met Ala
 245 250 255
 Tyr Phe Val Pro Ser Asn Met Thr Asn Ile Val Thr Met Ala Met Tyr
 260 265 270
 Pro Ile Leu Cys Ser Ile Gln Asp Asp Tyr Val Lys Leu Lys Lys Thr
 275 280 285
 Phe Lys Val Tyr Ile Arg Leu Val Cys Phe Ile Phe Phe Pro Ile Met
 290 295 300
 Ile Ile Leu Ala Val Leu Ser Glu Pro Ile Ile Lys Ile Val Leu Thr
 305 310 315 320
 Asp Lys Trp Leu Pro Ser Val Phe Tyr Val Gln Ile Leu Cys Ile Ala
 325 330 335
 Tyr Met Trp Asp Pro Leu Met Arg Ile Asn Ala Asn Ile Leu Ser Val
 340 345 350
 Val Gly Arg Thr Asp Tyr Ser Leu Lys Ser Glu Ile Ile Lys Lys Val
 355 360 365
 Ile Ser Val Ile Val Leu Phe Ile Thr Ile Pro Phe Gly Ile Asp Val
 370 375 380
 Met Cys Ile Gly Leu Ala Leu Tyr Cys Ile Ile Asp Leu Leu Val Ser

385 390 395 400
 Thr Tyr Tyr Val Lys Arg Ile Ile Gly Leu Gly Phe Trp Asp Glu Met
 405 410 415
 Arg Asn Ile Tyr Ala Phe Phe Ile Leu Ser Leu Val Ile Gly Gly Val
 420 425 430
 Val Phe Val Val Asn Ile Phe Val Glu Ser Asp Leu Leu Lys Ile Phe
 435 440 445
 Ile Gly Thr Leu Val Gly Ile Gly Leu Tyr Ile Ser Met Cys Ile Ile
 450 455 460
 Phe Arg Ile Lys Glu Val Phe Asp Phe Trp Ser Ile Ile Asn Ser Tyr
 465 470 475 480
 Leu Leu Gln Lys Lys
 485

<210> 6148
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 6148
 Ile Asn Lys Met Leu Asn Ile Val Ile Phe Gly Ala Pro Gly Ser Gly
 1 5 10 15
 Lys Gly Thr Gln Ser Glu Arg Ile Val Glu Lys Tyr Gly Ile Asn His
 20 25 30
 Ile Ser Thr Gly Asp Val Leu Arg Ala Glu Ile Lys Asn Gly Thr Glu
 35 40 45
 Leu Gly Lys Thr Ala Lys Gly Tyr Ile Asp Gln Gly Gln Leu Ile Pro
 50 55 60
 Asp Glu Leu Met Val Asp Ile Leu Ala Ser Val Phe Asp Ser Phe Lys
 65 70 75 80
 Asp Ser Lys Gly Val Ile Phe Asp Gly Phe Pro Arg Thr Ile Pro Gln
 85 90 95
 Ala Glu Ala Leu Lys Val Met Leu Lys Glu Arg Gly Gln Asp Ile Ser
 100 105 110
 Val Met Leu Asp Leu Asp Val Pro Glu Glu Glu Leu Met Thr Arg Leu
 115 120 125
 Ile Lys Arg Gly Lys Glu Ser Gly Arg Ala Asp Asp Asn Glu Glu Thr
 130 135 140
 Ile Lys Lys Arg Leu Val Tyr Asn Thr Gln Thr Ser Pro Leu Lys
 145 150 155 160
 Glu Tyr Tyr Lys Gly Glu Gly Lys Tyr Gln His Ile Asn Gly Leu Gly
 165 170 175
 Thr Met Glu Gly Ile Phe Glu Asp Ile Cys Lys Ala Val Asp Thr Leu
 180 185 190

<210> 6149
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 6149
 Phe Tyr Trp Ile Leu Leu Phe Tyr Thr Asn Lys Asn Arg Lys Glu
 1 5 10 15
 Ser Thr Asn His Asn Ser Phe Leu Phe Lys Met Lys Asn Ser Leu Cys
 20 25 30
 Asn Ser Val Ser Ser Val Val Lys Leu Leu Glu Tyr Gly Glu Asp
 35 40 45
 Gly Thr Pro Val Tyr Val Asn Glu Leu Thr Ala Leu Asn Gln Glu Leu
 50 55 60

Arg Asn Leu Cys Ala Asp Leu Leu Leu Gln Lys Gly Glu Ser Pro Glu
65 70 75 80
Glu Glu Ala Glu Ile Leu Val Thr Leu Phe Lys Gly Tyr Asp Thr Met
85 90 95
Leu Phe Asn Phe Ser Ser Glu Asn Glu Gln Val Ile Gln Glu Leu Leu
100 105 110
Asp Arg Ser Met Thr Val Leu Glu Lys Leu Pro Ala Ser Val Leu Lys
115 120 125
Cys Gln Leu Leu Leu Glu Cys Phe Glu Gln Thr Gly Asp Glu Glu Leu
130 135 140
Ile Arg Glu Val Lys Phe Thr Phe Glu Ser Cys Gly Ile
145 150 155

<210> 6150

<211> 654

<212> PRT

<213> B.fragilis

<400> 6150

Lys Leu Tyr Phe Ile Ile Leu Ser Leu Phe Ala Tyr Ser Lys Thr Asn
1 5 10 15
Phe Met Ala Met Ala His Thr Leu Asp Ser Phe Pro Asp Thr Gly Asp
20 25 30
Leu Glu Asn Leu Lys Asp Asn Tyr Gln Lys Ile Thr Ser Val Leu Ala
35 40 45
Gly His Gln Ile Ala Phe Trp Glu Tyr Asp Ile Pro Thr Gly Glu Cys
50 55 60
Asn Phe Thr Asp Glu Tyr Phe His Ile Leu Gly Leu Lys Glu Ala Gly
65 70 75 80
Ile Ile Phe Arg Asp Ile Asn Asp Phe Tyr Arg Phe Ala His Pro Glu
85 90 95
Asp Val Ile Ser Tyr Gln Thr Thr Phe Ala Arg Met Leu Glu Ser Glu
100 105 110
Thr Lys Ile Ser Gln Ile Val Val Arg Cys Val Gly Arg Gln Gly Glu
115 120 125
Thr Ile Trp Leu Glu Asp Asn Phe Ile Ala Tyr Lys Lys Asn Lys Glu
130 135 140
Asn Gly Ser Asp Lys Ile Ala Tyr Thr Ala Asn Ile Thr Ser Arg
145 150 155 160
Cys Glu Lys Glu Val Gln Ile Arg Gln Leu Glu Glu Arg Asn Arg Lys
165 170 175
Ile Ile Glu Ala Leu Pro Glu Phe Ile Phe Ile Phe Asp Asp Asn Phe
180 185 190
Phe Ile Thr Asp Val Leu Met Ala Pro Asp Thr Glu Leu Leu His Pro
195 200 205
Val Glu Val Leu Thr Gly Ala Asp Gly Arg Ser Ile Tyr Ser Ser Glu
210 215 220
Val Ser Asp Leu Phe Ile Ser Ser Ile His Glu Cys Leu Lys Ser Gly
225 230 235 240
Lys Leu Lys Glu Ile Glu Tyr Pro Val Asp Val Glu Ala Gly Arg His
245 250 255
Phe Phe Gln Ala Arg Ile Ala Pro Phe Glu Gly Asn Lys Val Leu Ala
260 265 270
Leu Ile His Asp Ile Gly Asp Arg Met Arg Arg Ser Gln Glu Leu Leu
275 280 285
Glu Ala Lys Gln Arg Ala Glu Glu Ala Asp Arg Met Lys Ser Val Phe
290 295 300
Leu Ala Asn Met Ser His Glu Ile Arg Thr Pro Leu Asn Ala Ile Val
305 310 315 320

Gly Phe Ser Glu Ile Ile Ala Leu Thr Glu Asp Glu Lys Glu Lys Glu
 325 330 335
 Glu Tyr Leu Gly Ile Ile Gln Gln Asn Ser Asn Leu Leu Leu Gln Leu
 340 345 350
 Ile Asn Asp Ile Leu Asp Leu Ser Arg Ile Glu Ser Gly Lys Ser Glu
 355 360 365
 Met His Cys Gln Leu Thr Glu Met Ser Gly Leu Val Asp Glu Val Asp
 370 375 380
 Lys Val His Arg Leu Lys Met Lys Lys Gly Val Lys Leu Asn Val Ile
 385 390 395 400
 Arg Pro Ser Glu Glu Ile Trp Ile Ser Thr Asp Arg Asn Arg Val Thr
 405 410 415
 Gln Val Leu Phe Asn Phe Leu Ser Asn Ala Ile Lys Asn Thr Ile Glu
 420 425 430
 Gly Ser Ile Thr Phe Gly Leu Val Lys Glu Glu Glu Trp Val Lys Leu
 435 440 445
 Tyr Val Thr Asp Thr Gly Cys Gly Ile Ser Lys Glu Lys Leu Pro Leu
 450 455 460
 Ile Phe Thr Arg Phe Glu Lys Leu Asn Asp Phe Val Gln Gly Thr Gly
 465 470 475 480
 Leu Gly Leu Pro Ile Cys Lys Ser Ile Val Glu Arg Leu Gly Gly Arg
 485 490 495
 Ile Glu Val Glu Ser Glu Leu Gly Gln Gly Ser Thr Phe Ile Leu Tyr
 500 505 510
 Leu Pro Asn Arg Gln Val Gln Glu Val Val Val Gly Glu Arg Glu Asn
 515 520 525
 Ala Ala Gly Asn Met Gly Val Glu Asn Arg Gln Lys Lys Ile Leu Ile
 530 535 540
 Ala Glu Asp Val Glu Ser Ser Tyr Leu Gln Ile Asn Ala Phe Leu Lys
 545 550 555 560
 Lys Glu Tyr Thr Ile Leu Trp Val Pro Asn Gly Glu Glu Ala Val Lys
 565 570 575
 Ser Phe Ile Arg Glu Lys Pro Asp Leu Ile Leu Met Asp Ile Arg Met
 580 585 590
 Pro Val Met Asn Gly Ile Gln Ala Thr Ala Lys Ile Arg Ala Ile Ser
 595 600 605
 Gln Glu Ile Pro Ile Ile Ala Ile Thr Ala Tyr Ala Phe Cys Pro Glu
 610 615 620
 Gly Glu Arg Ala Leu Glu Ala Gly Cys Asn Glu Val Ile Ala Lys Pro
 625 630 635 640
 Tyr Pro Leu Glu Lys Leu Lys Glu Thr Ile Glu Thr Tyr Leu
 645 650

<210> 6151

<211> 210

<212> PRT

<213> B.fragilis

<400> 6151

Pro Asp Ser Phe Ile Asn Phe Asn Arg His Lys Phe His Thr Lys Gln
 1 5 10 15
 Tyr Tyr Leu Tyr Leu Cys Ala Leu Phe Ile Asn Lys Met Thr Glu Ser
 20 25 30
 Arg Ser Asn Leu Gln Lys Tyr Ala Met His Phe Gly Thr Tyr Met Gly
 35 40 45
 Val Tyr Trp Ile Leu Lys Phe Ile Leu Phe Pro Leu Gly Leu Ser Ile
 50 55 60
 Pro Phe Leu Leu Phe Leu Phe Phe Gly Leu Thr Leu Gly Val Pro Phe
 65 70 75 80

Met Gly Tyr Tyr Tyr Ala Arg Thr Tyr Arg Asp Lys Val Cys Gly Gly
 85 90 95
 Ser Ile Arg Phe Leu Gln Ala Trp Val Phe Ile Val Phe Met Tyr Met
 100 105 110
 Phe Ala Ala Leu Leu Thr Ala Val Ala His Tyr Ile Tyr Phe Arg Phe
 115 120 125
 Ile Asp His Gly Phe Ile Val Asn Thr Tyr Met Gly Met Phe Asp Glu
 130 135 140
 Leu Thr Asn Lys Glu Val Pro Gly Ile Glu Gly Tyr Ile Ser Gln Leu
 145 150 155 160
 Lys Glu Val Met Glu Met Ile Ser Arg Leu Thr Pro Ile Asp Ile Thr
 165 170 175
 Met Gln Leu Met Ser Gln Asn Val Phe Tyr Gly Ser Ile Leu Ala Val
 180 185 190
 Pro Thr Ala Leu Phe Val Met Arg Lys Pro Lys Ser Pro Glu Val Gln
 195 200 205
 Pro Leu
 210

<210> 6152

<211> 1294

<212> PRT

<213> B.fragilis

<400> 6152

Asn Phe Ile Val Lys Ile Met Lys Asn Ala Ile Gly Asn Cys Arg Gln
 1 5 10 15
 Arg Lys Ala Val Leu Phe Ala Leu Ala Leu Pro Leu Met Phe Ser Gly
 20 25 30
 Ser Pro Ala Gln Ala Met His Arg Ser Glu Ile Val Arg Glu Val Thr
 35 40 45
 Gln Gln Asn Leu Lys Ile Val Ser Ala Lys Lys Ile Asn Pro Thr Thr
 50 55 60
 Ile Glu Val Leu Phe Ser Asn Asn Gln Arg Met Thr Phe Asp Phe Tyr
 65 70 75 80
 Gly Glu Asn Ile Phe Arg Val Phe Gln Asp Asn Ala Gly Gly Ile Ile
 85 90 95
 Arg Asp Pro Glu Ala Lys Pro Glu Ala Gln Ile Leu Val Asn Asn Pro
 100 105 110
 Arg Asn Thr Val Ser Thr Leu Asn Leu Asn Asp Gly Ser Asn Leu Ile
 115 120 125
 Ser Ile Thr Thr Gly Lys Ile Lys Val Glu Ile Asp Lys Asn Thr Ser
 130 135 140
 Leu Met Lys Val Ile Asp Leu Glu Lys Asn Thr Val Ala Phe Glu Glu
 145 150 155 160
 Val Glu Pro Val Leu Phe Asp Lys Gly Lys Val Thr Val Thr Leu Lys
 165 170 175
 Glu Asn Pro Asn Glu Tyr Phe Tyr Gly Gly Gly Val Gln Asn Gly Arg
 180 185 190
 Phe Ser His Lys Gly Lys Ala Ile Asn Ile Val Asn Glu Asn Ser Trp
 195 200 205
 Thr Asp Gly Gly Val Ala Ser Pro Ala Pro Phe Tyr Trp Ser Thr Asn
 210 215 220
 Gly Tyr Gly Met Met Trp Tyr Thr Phe Lys Pro Gly Lys Tyr Asp Phe
 225 230 235 240
 Gly Ala Asp Glu Lys Gly Lys Val Lys Leu Thr His Asp Ser Pro Tyr
 245 250 255
 Leu Asp Leu Phe Tyr Met Val Ser Asp Gly Ala Val Gly Val Leu Asn
 260 265 270

Asp Phe Tyr Gln Leu Thr Gly Asn Pro Val Leu Leu Pro Lys Phe Gly
 275 280 285
 Phe Tyr Gln Gly His Leu Asn Ala Tyr Asn Arg Asp Tyr Trp Lys Glu
 290 295 300
 Asp Glu Lys Gly Ile Leu Phe Glu Asp Gly Lys Arg Tyr Lys Glu Ser
 305 310 315 320
 Gln Lys Asp Asn Gly Gly Ile Lys Glu Ser Leu Asn Gly Glu Lys Asn
 325 330 335
 Asn Tyr Gln Phe Ser Ala Arg Ala Val Ile Asp Arg Tyr Lys Asn His
 340 345 350
 Asp Met Pro Leu Gly Trp Leu Leu Pro Asn Asp Gly Tyr Gly Ala Gly
 355 360 365
 Tyr Gly Gln Thr Glu Thr Leu Asp Gly Asn Ile Gln Asn Leu Lys Ser
 370 375 380
 Leu Gly Asp Tyr Ala Arg Lys Asn Gly Val Glu Ile Gly Leu Trp Thr
 385 390 395 400
 Gln Ser Asp Leu His Pro Lys Glu Gly Val Ser Ala Leu Leu Gln Arg
 405 410 415
 Asp Ile Val Lys Glu Val Arg Asp Ala Gly Val Arg Val Leu Lys Thr
 420 425 430
 Asp Val Ala Trp Val Gly Trp Gly Tyr Ser Phe Gly Leu Asn Gly Val
 435 440 445
 Ala Asp Val Gly His Ile Met Pro Tyr Tyr Gly Asn Asp Ala Arg Pro
 450 455 460
 Phe Ile Ile Ser Leu Asp Gly Trp Ala Gly Thr Gln Arg Tyr Ala Gly
 465 470 475 480
 Ile Trp Ser Gly Asp Gln Thr Gly Gly Val Trp Glu Tyr Ile Arg Phe
 485 490 495
 His Ile Pro Thr Tyr Ile Gly Ser Gly Leu Ser Gly Gln Pro Asn Ile
 500 505 510
 Ser Ser Asp Met Asp Gly Ile Phe Gly Gly Lys Asn Met Ile Val Asn
 515 520 525
 Thr Arg Asp Phe Gln Trp Lys Thr Phe Thr Pro Met Gln Leu Asn Met
 530 535 540
 Asp Gly Trp Gly Ser Asn Glu Lys Tyr Pro His Ala Leu Gly Glu Pro
 545 550 555 560
 Ala Thr Ser Ile Asn Arg Trp Tyr Leu Lys Leu Lys Ser Glu Leu Leu
 565 570 575
 Pro Tyr Thr Tyr Ser Phe Ala Lys Glu Ala Val Thr Gly Met Pro Leu
 580 585 590
 Ile Arg Ala Met Phe Leu Glu Tyr Pro Asn Ala Tyr Thr Leu Gly Thr
 595 600 605
 Ala Thr Gln Tyr Gln Phe Met Tyr Gly Thr Asp Phe Leu Val Ala Pro
 610 615 620
 Ile Tyr Lys Ala Thr Lys Ala Asp Ala Lys Gly Asn Asp Ile Arg Asp
 625 630 635 640
 Gly Ile Tyr Leu Pro Glu Gly Glu Trp Ile Asp Tyr Phe Thr Gly Glu
 645 650 655
 Lys Tyr Gln Gly Asn Cys Val Leu Asn Asn Phe Ala Ala Pro Leu Trp
 660 665 670
 Lys Leu Pro Val Phe Val Lys Asn Gly Ala Ile Ile Pro Met Thr Asn
 675 680 685
 Pro Asn Asn Asn Val Ala Glu Ile Asn Lys Gly Leu Arg Ile Tyr Glu
 690 695 700
 Ile Tyr Pro Tyr Lys His Met Met Thr Val Glu Tyr Asp Asp Asp Gly
 705 710 715 720
 Ile Ser Glu Ala Tyr Lys Glu Gly Lys Gly Thr Thr Thr Phe Ile Glu
 725 730 735
 Ser Asn Val Asp Ser Lys Asn Asn Val Lys Ile Ser Ile Arg Pro Thr

Val Gly Val Glu Pro Leu Asn Leu Lys Ala Met Glu Asn Leu Thr Tyr
 1220 1225 1230
 Asp Arg Leu His Thr Asn Gly Thr Lys Ala Leu Tyr Pro Thr Phe Val
 1235 1240 1245
 Asn Leu Gly Ala Lys Glu Ala Leu Glu Gly Thr Asn Asp Leu Phe Ile
 1250 1255 1260
 Leu Lys Leu Lys Ala Lys Arg Ala Val Lys Phe Asp Leu Lys Ala Ile
 1265 1270 1275 1280
 Asp Gly Val Leu Val Asp Lys Asn Leu Asn Thr Arg Lys Phe
 1285 1290

<210> 6153
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 6153
 Ile Phe Val Val Asn Met Pro Lys Tyr Pro Leu Leu Gly Met Thr Leu
 1 5 10 15
 Thr Glu Leu Gln Ser Val Thr Lys Asp Leu Gly Met Pro Ala Phe Ala
 20 25 30
 Ala Lys Gln Ile Ala Ser Trp Leu Tyr Asp Lys Lys Val Thr Ser Ile
 35 40 45
 Asp Glu Met Thr Asn Leu Ser Leu Lys His Arg Glu Leu Leu Lys Gly
 50 55 60
 Glu Tyr Asp Leu Gly Ile Ser Ala Pro Val Asp Glu Met Arg Ser Val
 65 70 75 80
 Asp Gly Thr Val Lys Tyr Leu Tyr Gln Val Ser Asp Asn His Phe Val
 85 90 95
 Glu Ala Val Tyr Ile Pro Asp Glu Asp Arg Ala Thr Leu Cys Val Ser
 100 105 110
 Ser Gln Val Gly Cys Lys Met Asn Cys Lys Phe Cys Met Thr Gly Lys
 115 120 125
 Gln Gly Phe Thr Ala Ser Leu Thr Ala Asn Gln Ile Leu Asn Gln Ile
 130 135 140
 Ala Ala Leu Pro Glu Arg Asp Lys Leu Thr Asn Val Val Met Met Gly
 145 150 155 160
 Met Gly Glu Pro Ile Asp Asn Leu Asp Glu Val Leu Lys Ala Leu His
 165 170 175
 Ile Leu Thr Ala Ser Tyr Gly Tyr Gly Trp Ser Pro Lys Arg Ile Thr
 180 185 190
 Leu Ser Ser Val Gly Leu Arg Lys Gly Leu Gln Arg Phe Ile Glu Glu
 195 200 205
 Ser Glu Cys His Leu Ala Ile Ser Leu His Ser Pro Phe Pro Ser Gln
 210 215 220
 Arg Ser Glu Leu Met Pro Ala Glu Arg Ala Phe Ser Ile Lys Glu Met
 225 230 235 240
 Val Asp Leu Leu Lys Asn Tyr Asp Phe Ser Lys Gln Arg Arg Leu Ser
 245 250 255
 Phe Glu Tyr Ile Val Phe Lys Gly Val Asn Asp Ser Leu Ile Tyr Ala
 260 265 270
 Lys Glu Leu Leu Lys Leu Leu Arg Gly Leu Asp Cys Arg Val Asn Leu
 275 280 285
 Ile Arg Phe His Ala Ile Pro Gly Val Asp Leu Glu Gly Ala Gly Met
 290 295 300
 Glu Thr Met Thr Ser Phe Arg Asp Tyr Leu Thr Ser His Gly Leu Phe
 305 310 315 320
 Thr Thr Ile Arg Ala Ser Arg Gly Glu Asp Ile Phe Ala Ala Cys Gly
 325 330 335

Met Leu Ser Thr Ala Lys Gln Glu Glu Ser Asn Lys Asn
 340 345

<210> 6154
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 6154
 Asn Cys Ala Val Gln Gln Met Ile Pro Ala Phe Ala Ser Leu Ser Phe
 1 5 10 15
 Ile Val Tyr Lys Glu Arg Glu Ala Glu Gln Met Pro Arg Met Glu Asp
 20 25 30
 Lys Gln Gln Val Ile Gly Ala Tyr Arg Gly Val Phe Gly Glu Lys Ser
 35 40 45
 Lys Glu Ser Asp Asp Ala Ser Cys Asp Thr Arg Cys Arg Lys His Cys
 50 55 60
 Asp Ile Gln Ser Pro Lys Thr Leu Phe Leu Ala
 65 70 75

<210> 6155
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 6155
 Asn Glu Glu Val Val Thr Thr Tyr Val Gly Ala Lys Ile Asp Asn Ile
 1 5 10 15
 Arg His Ile Glu Arg Lys Arg Gly Trp Ile Leu Asp Ile Leu Phe Ile
 20 25 30
 Pro Glu Arg Asn Thr Gly Asp Tyr Thr Asn Phe Val Phe Ser Glu Cys
 35 40 45
 Asn Lys Asp Asn Gln Gln Asn Leu Lys Thr Thr Ser Ile His Tyr Gly
 50 55 60
 Gln Glu Asn His
 65

<210> 6156
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6156
 Arg Thr Lys Val Gln Ile Ile Leu Phe Gly Met Glu Phe Met Pro Val
 1 5 10 15
 Lys Val Asn Lys Ala Ile Arg Ser Glu Lys Lys His Phe Phe Phe Asp
 20 25 30
 Phe Lys Tyr Leu Lys Ser Arg Ser Leu Pro Val Lys His Ala Lys Lys
 35 40 45
 Tyr Arg Ser Pro Ile Ala Gly Leu Ile Lys Ile Pro Thr Phe Ala Pro
 50 55 60
 Gly
 65

<210> 6157
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 6157

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Phe Phe Leu Phe Ser Leu Phe Leu Leu Phe Phe Ser Leu Cys Lys Phe
1          5          10          15
Thr His Leu Trp Glu Ala Glu Glu Ser Leu Leu Ile Gly Ile Pro Phe
          20          25          30
Gly Phe Leu Pro Tyr Lys Ser Val Ser Leu Leu Leu Tyr Tyr Lys Thr
          35          40          45
Lys Lys Arg Glu Glu Arg Phe Asn Arg Leu Leu Phe
          50          55          60

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<210> 6158

<211> 63

<212> PRT

<213> B.fragilis

<400> 6158

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Arg Glu Gln Phe Ser Ile Thr Gly Asn Ala Gly Pro Tyr Lys Thr Ala
1          5          10          15
Thr His Val Val Met Glu Phe Leu Phe Gly Thr Ser Cys Arg Ser Leu
          20          25          30
Leu Phe Pro Ile Leu Arg Cys Phe Phe Arg Ser Ile Arg Phe Tyr Phe
          35          40          45
Arg Pro Ser Ala Asn Val Asn Pro Tyr Phe Gly Ile Tyr Arg Ile
          50          55          60

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<210> 6159

<211> 65

<212> PRT

<213> B.fragilis

<400> 6159

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Glu Val Phe Phe Thr Ser Ala Tyr Ile Ala Ala Pro Ala Lys Thr Gly
1          5          10          15
His Ala Ser Phe Asn Ser Phe Asp Thr Ile Met Val Tyr Ile Ile Asn
          20          25          30
Gln Asn Phe Ile Tyr Gln Leu Phe Ile Ile Met Pro Asp Lys Ile Arg
          35          40          45
Pro Asp Phe Met Pro Asn Leu Arg Ala Glu Lys Lys Ser Ser Cys Arg
          50          55          60
Met
65

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<210> 6160

<211> 419

<212> PRT

<213> B.fragilis

<400> 6160

```

Ile Phe Tyr Ser Phe Arg Lys Glu Thr Gln Glu Ile Ile Leu Thr Leu
1          5          10          15
Tyr Phe Gln Asn Val Thr Lys Thr Thr Asn Lys Ile Ser Lys Gln His
          20          25          30
Leu Phe Ile Met Val Lys Lys Ile Ile Ser Ile Cys Ala Ala Gly Met
          35          40          45
Ile Val Ala Ser Cys Ser Pro Lys Lys Thr Thr Ala Gln Pro Thr Asp
          50          55          60
Pro Ser Thr Thr Asp Ser Glu Leu Thr Met Leu Val Gly Thr Tyr Thr
          65          70          75          80
Ser Gly Asn Ser Lys Gly Ile Tyr Thr Phe Arg Phe Asn Glu Glu Thr

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<210> 6161
<211> 598
<212> PRT
<213> B.fragilis
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<400> 6161																
Thr	Met	Cys	Ser	Lys	Ile	Lys	His	Ile	Leu	Leu	Thr	Ala	Cys	Cys	Phe	
1				5					10					15		
Thr	Gly	Ala	Gly	Leu	Met	Thr	Ser	Cys	Asn	Asp	Gly	Phe	Met	Asp	Arg	
			20					25					30			
Phe	Pro	Glu	Thr	Ser	Ile	Thr	Glu	Lys	Val	Phe	Phe	Ser	Ser	Pro	Ala	
		35					40					45				
Asp	Leu	Glu	Thr	Tyr	Thr	Asn	Gly	Met	Tyr	Gly	Tyr	Ile	Gly	Ala	Ser	
	50					55					60					
Tyr	Ser	Asp	Thr	Pro	Ser	Asp	Asn	Met	Leu	Tyr	Pro	Glu	Asp	Thr	Asp	

Glu Gly Asn Thr Ile Gly Leu Thr Glu Gly Thr Lys Gly Tyr Ile Tyr
 545 550 555 560
 Leu Val Ala Gln His Asn Lys Tyr Thr Phe Val Ser Pro Lys Tyr Tyr
 565 570 575
 Tyr Tyr Pro Val Ala Thr Lys Asp Ile Thr Val Asn Glu Asn Leu Tyr
 580 585 590
 Gln Asn Pro Phe Trp Glu
 595

<210> 6162
 <211> 131
 <212> PRT
 <213> B.fragilis

<400> 6162
 Tyr Ser Glu Ser Ala Gly Ser Cys Ile Met Pro Thr Thr Gly Phe Cys
 1 5 10 15
 Pro Gly Ser Pro Cys Ser Pro Leu Phe Pro Leu Val Pro Ser Thr Pro
 20 25 30
 Ser Leu Pro Ser Val Pro Ser Thr Pro Ser Leu Pro Ser Val Pro Phe
 35 40 45
 Val Pro Ser Ala Pro Ser Leu Pro Ser Val Pro Phe Ser Pro Ser Phe
 50 55 60
 Pro Ser Val Pro Ser Val Pro Ser Thr Pro Ser Leu Pro Ser Val Pro
 65 70 75 80
 Ser Thr Pro Ser Leu Pro Ser Val Pro Ser Met Pro Ser Phe Pro Ala
 85 90 95
 Ser Pro Ser Gly Pro Val Ser Pro Phe Phe Pro Leu Arg Ile Val Ile
 100 105 110
 Gly Ala Leu Leu Glu Lys Glu Ile Val Tyr Pro Ala Pro Ser Ala Ser
 115 120 125
 Ser Ser Ile
 130

<210> 6163
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 6163
 Gly Ile Gly Pro Ser Tyr Leu Val Asn Ser Phe Lys Phe Ala Ser Pro
 1 5 10 15
 Asn Tyr Pro Phe Leu Tyr Ile Arg Ser Asn Ile Phe Phe Lys Pro Leu
 20 25 30
 Arg Asp Phe Thr Ser Gln Cys Pro Pro Tyr Arg Ile Asp Thr Phe Cys
 35 40 45
 Tyr Leu Ser Ile Leu Glu Ser Tyr Thr Cys Trp Asn Met Phe Ile Pro
 50 55 60
 Lys Lys Met
 65

<210> 6164
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 6164
 Asp Ile Gly Thr Phe Leu Phe Phe Tyr Asn Ile His Gln Pro Met Lys
 1 5 10 15

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Thr Leu Ile Glu Asn Leu Thr Ser Asp Leu Leu Pro Asn Gln Ile Phe
      20              25              30
Gln Thr Gly Phe Ser Phe Leu Ile Ile Leu Lys Gly Asn Ser Leu Leu
      35              40              45
Lys Leu Asp Ser Asn Val Leu Ile Phe Ile Met Ser Gly Thr Met Lys
      50              55              60
Val Ser Ser Ala Gln Gln Glu Leu Ala Thr Val Arg Glu Arg His Ile
      65              70              75              80
Phe Phe Trp Asp Lys Glu Asp Asp Tyr Thr Cys Glu Met Leu Ser Asp
      85              90              95
Ser Gln Val Ile Leu Phe Ala Phe Gly Asp Leu Ile Val His Asp Leu
      100             105             110
Leu Thr Phe Arg Pro Phe Gly Ala Ile Ser Asp Ser Ser Val Ser Lys
      115             120             125
Asp Val Gly Leu Lys Phe Ala Glu Pro Leu Asn Ser Phe Leu Gln Leu
      130             135             140
Leu Ala Gln Tyr Met Glu Met Asn Leu Tyr Asp Leu Ser Leu Tyr Ile
      145             150             155             160
Ala Lys Gln Arg Glu Leu Phe Tyr Ile Leu Asn Ser Val Tyr Asn Glu
      165             170             175
Gln Glu Leu Ala Ile Leu Phe Ser Ser Leu Thr Glu Gln Ser Ser Arg
      180             185             190
Phe Lys Glu Gln Ile Leu Glu Asn Tyr Leu Ser Ala Lys Asn Val Gly
      195             200             205
Glu Leu Ala Ser Leu Leu Gly Tyr Gly Val Thr Asn Phe Arg Ala Lys
      210             215             220
Phe Lys Glu Gln Phe Gly Val Ser Val Tyr Arg Trp Leu Leu Asn Arg
      225             230             235             240
Lys Ser Gln His Ile Ile Tyr Arg Ile Thr Val Tyr Gly Asp Glu Phe
      245             250             255
Ser Gln Ile Ile Asp Asp Phe Gly Phe Ser Ser Pro Ser His Phe Asn
      260             265             270
Lys Phe Cys Arg Ser Gln Tyr Gly Leu Thr Pro Cys Glu Leu Arg Lys
      275             280             285
Lys Leu Lys Thr Asn Asn Asn Ser
      290             295

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<210> 6165

<211> 330

<212> PRT

<213> B.fragilis

<400> 6165

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Gln Glu Val Thr Ser Val Ile Ser Pro Cys Ile Ile Phe Asn Asn Arg
1              5              10              15
Ile Gly Met Asn Lys Phe Ile Tyr Ile Phe Val Ala Ile Val Ala Ile
      20              25              30
Ser Phe Ala Ser Cys Thr Gln Glu Arg Ala Lys Glu Lys Glu Leu Lys
      35              40              45
Val Leu Ser Trp Asn Val Trp His Ala Gly His Ala Lys Asn Tyr Pro
      50              55              60
Glu Lys Gly Cys Glu Gly Thr Ile Gly Ile Leu Arg Lys Ser Gln Ala
      65              70              75              80
Asp Val Ile Leu Met Ile Glu Thr Tyr Gly Ala Ala Pro Met Val Ala
      85              90              95
Asp Ser Leu Gly Tyr Asp Tyr Val Leu Ser Asp Asn Leu Cys Ile
      100             105             110
Tyr Ser Arg Tyr Pro Ile Lys Lys Thr Tyr Leu Phe Pro Asp Ser Ile
      115             120             125

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Ser Thr Phe Asn Phe Gly Gly Val Glu Ile Asp Met Asp Gly Thr Pro
 130 135 140
 Val Arg Leu Phe Asp Thr Trp Leu His Tyr Leu Pro Asp Met Arg Leu
 145 150 155 160
 Val Pro Thr Glu Gln Ser Glu Thr Asp Ile Leu Ala Trp Asp Asp Ala
 165 170 175
 Gly Thr Arg Asp Asn Glu Ile Arg Arg Ile Leu Ser Val Leu Gln Pro
 180 185 190
 Met Ile Arg Gln Thr Asp Ser Ile Pro Met Ile Met Gly Gly Asp Phe
 195 200 205
 Asn Val His Ser His Leu Asp Trp Thr Asp Ala Thr Lys Asp Met Tyr
 210 215 220
 His His Gly Gly Ala Val Val Glu Trp Thr Val Ser Lys Glu Met Gln
 225 230 235 240
 Asn Ala Gly Phe Lys Asp Ser Phe Arg Glu Ile His Pro Glu Pro Glu
 245 250 255
 Lys Asn Ile Gly Thr Thr Trp Ile Tyr Asp Asn Glu Asp Lys Pro Leu
 260 265 270
 Arg Ser Asp Arg Ile Asp Phe Ile Tyr Tyr Gln Gly Lys Thr Ile Arg
 275 280 285
 Ala Ile Thr Ser Glu Ser Tyr Asn Gln Glu Leu Thr Lys Pro Leu Lys
 290 295 300
 Phe Met Gly Glu Glu Phe Phe Tyr Pro Ser Asp His Gly Phe Val Met
 305 310 315 320
 Thr Thr Phe Lys Ile Ser Pro Leu Glu Lys
 325 330

<210> 6166

<211> 431

<212> PRT

<213> B.fragilis

<400> 6166

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205

Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 6167

<211> 83

<212> PRT

<213> B.fragilis

<400> 6167

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 6168

<211> 179

<212> PRT

<213> B.fragilis

<400> 6168

Arg Thr Ile Asn Ala Val Tyr Met Lys Lys His Phe Val Trp Leu Leu
 1 5 10 15
 Leu Leu Phe Pro Leu Leu Leu Thr Gly Cys Tyr Gly Glu Glu Asp Lys
 20 25 30
 Glu Lys Asp Gln Gly Asp Tyr Ile Trp Asp Phe Ile Asn Tyr Asn Ile

35 40 45
 Tyr Phe Ser Val Lys Asp Ala Gly Asn Asn Leu Leu Asp Pro Gln
 50 55 60
 Val Ala Ser Asn Ile Leu Gly Asn Glu Ile Thr Val Glu Tyr Gly Asp
 65 70 75 80
 Lys Ser Phe Pro Leu Glu Asn Ser Val Asp Thr Arg Phe Asn Met Pro
 85 90 95
 Arg Pro Leu Gly Leu Arg Lys Glu Val Leu Gly Glu Ala Lys Glu Arg
 100 105 110
 Val Leu Ser Phe Gly Glu Phe Ser Pro Glu His Gln Tyr Lys Gly Glu
 115 120 125
 Thr Phe Thr Ile His Trp Gly Asp Gly Thr Lys Asp Val Val Lys Phe
 130 135 140
 Asp Leu Tyr Ile Thr Trp Lys Lys Gln Asn Pro Thr Ile His Lys Arg
 145 150 155 160
 Leu Tyr Leu Asn Asp Lys Glu Tyr Ser Lys Asp Ser Phe Leu Ile Lys
 165 170 175
 Ile Val Lys

<210> 6169
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 6169
 Asn Leu Ser Asn Ile Ser Ala Phe His Phe Ile Thr Leu Gln Asn Gln
 1 5 10 15
 Lys Leu Phe Phe Ile Ile Lys Ile Ser Pro Asn His Lys Thr Arg Glu
 20 25 30
 Leu His Tyr Arg Lys Ile His Thr Phe Leu Phe Ser Pro Ser Pro Ser
 35 40 45
 Asp Arg Lys Lys Glu Phe Leu His Ile Phe Lys Ile Gln Asn Asp Arg
 50 55 60
 Ile Val Ser Asp His Glu Lys Thr Ser Cys Asp Thr Tyr Tyr Val Arg
 65 70 75 80
 Phe Leu Leu Pro Ser Gly Ile Leu Tyr Gln Phe Phe
 85 90

<210> 6170
 <211> 711
 <212> PRT
 <213> B.fragilis

<400> 6170
 Ile Phe Tyr Lys Asp Met Asn Lys Phe Lys Trp Arg Ser Phe Leu Ser
 1 5 10 15
 Phe Phe Leu Thr Glu Arg Asn Ile Arg Leu Val Arg Leu Met Ser Phe
 20 25 30
 Ile Leu Phe Leu Phe Val Phe Gln Gly Val Tyr Ala Gln Gln Thr Arg
 35 40 45
 Ile Asn Leu His Val Lys Gln Val Pro Leu Lys Gln Val Leu Lys Ser
 50 55 60
 Ile Glu Ser Lys Ser Glu Tyr Thr Phe Phe Tyr Asn Asp Ala Glu Ile
 65 70 75 80
 Asp Met Asn Arg Lys Val Thr Val Gln Ala Asn Asn Glu Arg Ile Asp
 85 90 95
 Val Ile Leu Ser Lys Ile Leu Pro Asp Cys Lys Cys Val Val Glu Asn
 100 105 110

Arg Lys Ile Ile Leu Val Pro Gly Ala Glu Lys Gln Asn Thr Pro Asn
 115 120 125
 Asp Asn Thr Ala Lys Thr Lys Glu Ile Thr Gly Thr Val Thr Asp Thr
 130 135 140
 Arg Gly Glu Thr Leu Ile Gly Val Asn Val Thr Val Leu Gly Thr Thr
 145 150 155 160
 Thr Gly Val Ile Thr Asn Ile Asp Gly Lys Tyr Ser Leu Lys Val Pro
 165 170 175
 Ala Gly Lys Ser Leu Lys Phe Ser Tyr Val Gly Tyr Ile Ala Gln Thr
 180 185 190
 Val Lys Val Gly Asp Lys Ser Val Ile Asp Ile Val Leu Glu Glu Asn
 195 200 205
 Ser Lys Ala Leu Asp Glu Val Val Val Val Gly Tyr Ala Val Gln Lys
 210 215 220
 Lys Val Asn Leu Ser Gly Ser Val Ala Thr Val Ser Thr Lys Ala Ile
 225 230 235 240
 Glu Asp Arg Pro Val Leu Asn Met Gly Gln Ala Leu Gln Gly Ala Val
 245 250 255
 Ala Asn Leu Asn Val Ser Val Gly Asp Gly Glu Ala Asp Asp Ser Pro
 260 265 270
 Ser Tyr Asn Ile Arg Gly Thr Thr Ser Leu Asn Gly Gly Ser Pro Leu
 275 280 285
 Val Val Ile Asp Gly Val Val Ser Thr Ser Asp Gln Leu Asn Arg Met
 290 295 300
 Asn Pro Val Asp Ile Ala Asn Ile Ser Val Leu Lys Asp Ala Ala Ser
 305 310 315 320
 Ser Ala Ile Tyr Gly Ser Arg Ala Ala Phe Gly Val Ile Leu Val Thr
 325 330 335
 Thr Lys Asp Gly Ser Asn Glu Lys Leu Thr Val Asn Tyr Asn Asn Asn
 340 345 350
 Phe Val Leu Arg Thr Asn Thr Arg Met Pro Glu Ile Ile Thr Asp Pro
 355 360 365
 Tyr Leu Val Ala Thr Thr Arg Asn Thr Met Ala Tyr Pro Trp Tyr Asn
 370 375 380
 Leu Tyr Asn Glu Glu Gln Leu Ala Tyr Ala Lys Lys Cys Ser Glu Asp
 385 390 395 400
 Pro Ser Thr Ser Pro Tyr Phe Leu Asn Pro Asp Gly Phe Tyr Thr Tyr
 405 410 415
 Phe Gly Arg Thr Asn Trp Val Asp Glu Ala Tyr Asn Asp Val Gly Phe
 420 425 430
 Ser Thr Ile His Asn Ile Asp Ile Ser Gly Lys Thr Asp Arg Ile Ser
 435 440 445
 Tyr Tyr Phe Ser Gly Gly Tyr Asn Arg Gln Asn Gly Met Phe Lys Tyr
 450 455 460
 Gly Asn Asp Ile Tyr Asn Arg Tyr Asn Leu Arg Thr Lys Leu Gln Phe
 465 470 475 480
 Lys Leu Thr Asp Trp Trp Ser Leu Asn Ser Asn Val Ser Leu Thr Thr
 485 490 495
 Ser Asp Tyr Asp Tyr Ala Asn Ala Met Thr Asn Thr Tyr Lys Gln Met
 500 505 510
 Tyr Arg Lys Asn Pro Met Asp Met Val Lys Asn Pro Asp Gly Thr Trp
 515 520 525
 Thr Asp Ala Ser Val Gly Thr Leu Gly Ala Leu Ala Glu Gly Gly Arg
 530 535 540
 Ala Thr Asp Trp Lys Thr Asn Thr Asn Ile Asn Leu Ser Thr Lys Ile
 545 550 555 560
 Asp Val Ile Lys Asp Val Phe Phe Val Gln Gly Thr Phe Ala Phe Ser
 565 570 575
 Asn Thr Lys Thr Arg Ser Asn Trp Tyr Asn Leu Pro Val Thr Tyr Arg

580	585	590
Asn Gly Pro Glu Leu Pro Val Leu Thr Phe Asn Pro Ile Ser Thr Val		
595	600	605
Ser Asp Ala Ser Ser Ser Asn Ser Asp Thr Lys His Ile Leu Phe Asp		
610	615	620
Val Tyr Gly Thr Phe Gln Lys Thr Phe Ala Lys Lys His Ala Val Thr		
625	630	635
Ala Val Val Gly Phe Asn Gln Glu Glu Tyr Lys Tyr Asp Tyr Val Lys		
645	650	655
Ala Asn Arg Lys Glu Leu Ile Ser Ser Ser Leu Pro Thr Ile Asn Leu		
660	665	670
Ala Thr Gly Asp Met Asn Met Ser Gln Ser Ile Thr Thr Trp Ala Leu		
675	680	685
Arg Gly Ala Phe Ala Arg Leu Gly Tyr Ile Tyr Asn Asp Lys Tyr Ile		
690	695	700
Phe Glu Phe Asn Gly Arg Leu		
705	710	

<210> 6171

<211> 511

<212> PRT

<213> B.fragilis

<400> 6171

Leu Phe Met Lys Lys Asn Leu Leu Tyr Leu Phe Ala Leu Ile Cys Ser	
1 5 10 15	
Val Ser Leu Leu Val Ala Cys Asn Asp Asp Asp Pro Glu Tyr Ile Gln	
20 25 30	
Asp Gly Glu Phe Asp Gly Val Tyr Leu Gly Thr Leu Asp Val Asp Ala	
35 40 45	
Ala Gly Val Ile Lys Val Asp Asp Ile Pro Gln Lys Val Tyr Ile Thr	
50 55 60	
Lys Thr Gly Glu Asn Gln Phe Lys Met Glu Leu Lys Asn Phe Ser Phe	
65 70 75 80	
Gln Thr Met Glu Leu Gly Asn Ile Ser Val Asp Asn Ile Ala Val Ile	
85 90 95	
Lys Lys Gly Asn Ser Cys Thr Phe Ser Gly Lys Ala Asn Leu Thr Leu	
100 105 110	
Ala Val Gly Ala Cys Asp Val Thr Val Ser Gly Thr Ile Glu Asp Asn	
115 120 125	
Lys Leu Asp Met Asp Ile Ala Val Val Ala Ala Gly Thr Leu Asn Val	
130 135 140	
Ala Val Asp Phe Glu Gly Thr Lys Leu Ala Ala Asp Lys Ser Ser Glu	
145 150 155 160	
Ala Lys Ile Leu Thr Phe Thr Phe Ala Asn Glu Phe Val Thr Ser Gln	
165 170 175	
Pro Val Ile Asp Ser Glu Asn Lys Thr Ile Thr Phe Val Val Ser Asp	
180 185 190	
Gln Met Pro Glu Glu Gln Leu Lys Ala Leu Ile Pro Glu Phe Thr Ile	
195 200 205	
Ser Glu Gly Ala Ser Val Asp Lys Lys Ser Gly Val Ala Gln Asp Phe	
210 215 220	
Ser Gln Pro Val Thr Tyr Thr Val Thr Ser Glu Asp Gly Ile Val Lys	
225 230 235 240	
Met Val Tyr Thr Val Ser Val Ser Gly Lys Glu Lys Tyr Leu Ser Phe	
245 250 255	
Asn Glu Trp Glu Thr Ile Lys Ser Ser Thr Ser Gly Ser Leu Glu Gln	
260 265 270	
Tyr Gln Asn Pro Lys Gly Thr Tyr Gly Thr Ser Asn Pro Gly Val Met	

275 280 285
 Thr Ile Asn Glu Met Phe Gly Gln Val Gly Ile Pro Ser Phe Glu Tyr
 290 295 300
 Cys Val Ala Pro Val Asp Gly Arg Val Gly Lys Ala Ala Gln Leu Lys
 305 310 315 320
 Thr Leu His Thr Ala Ile Val Ala Asn Gly Ile Asp Tyr Asn Ala Ala
 325 330 335
 Phe Gly Gly Leu Ile Pro Tyr Ile Thr Ala Gly Ser Leu Phe Thr Gly
 340 345 350
 Thr Phe Lys Thr Asp Met Phe Asn Pro Leu Asn Ser Thr Lys Phe Gly
 355 360 365
 Val Pro Phe Val Gly Glu Pro Val Thr Phe Thr Gly Trp Tyr Lys Tyr
 370 375 380
 Ala Pro Gly Glu Ile Tyr Tyr Asp Asn Thr Asn Lys Ile Val Glu Gly
 385 390 395 400
 Gln Thr Asp Lys Cys Ser Ile Tyr Ala Val Leu Tyr Glu Glu Ser Leu
 405 410 415
 Asp Ser Lys Gly Asn Asn Ile Pro Leu Thr Gly Asp Tyr Lys Asn Lys
 420 425 430
 Glu Val Tyr Ile Gly Ser Ser Ser Arg Val Val Met Lys Ala Glu Leu
 435 440 445
 Ser Asp Gly Ser Ala Lys Ala Glu Trp Thr Gln Phe Ser Val Pro Phe
 450 455 460
 Lys Pro Val Gly Asp Asn Lys Tyr Asp Ala Asn Lys Lys Tyr Tyr Val
 465 470 475 480
 Ala Val Ile Cys Ser Ser Ser Phe Glu Gly Asp Tyr Tyr Lys Gly Ala
 485 490 495
 Pro Gly Ser Thr Leu Ile Val Asp Asp Phe Ser Ile Leu Ser Lys
 500 505 510

<210> 6172

<211> 267

<212> PRT

<213> B.fragilis

<400> 6172

Leu Leu Lys Lys Gln Met Lys Lys Tyr Lys Phe Phe Ile Ala Ile Leu
 1 5 10 15
 Thr Phe Ser Ile Leu His Ser Ile Ser Val Lys Ala Gln Glu Arg
 20 25 30
 Asn Lys Gly Ile Ile Trp Ser Ser Leu Arg Gly Leu Glu Tyr Glu Val
 35 40 45
 Lys Ala Gly Phe Ser Ile Gly Gly Thr Ser Pro Leu Pro Leu Pro Lys
 50 55 60
 Glu Ile Arg Ser Ile Asp Ser Tyr Asn Pro Asn Met Ala Ile Ala Ile
 65 70 75 80
 Glu Gly Asn Ala Thr Lys Trp Phe Gly Ser Asp Lys Lys Trp Gly Met
 85 90 95
 Leu Leu Gly Leu Arg Leu Glu Asn Lys Ser Met Thr Thr Lys Ala Thr
 100 105 110
 Val Lys Asn Tyr Asn Met Glu Ile Ile Gly Asp Gly Gly Glu Lys Val
 115 120 125
 Ser Gly Val Trp Thr Gly Gly Val Lys Thr Lys Val Lys Asn Ser Tyr
 130 135 140
 Leu Thr Ile Pro Ile Leu Ala Lys Tyr Lys Leu Thr Lys Arg Trp Asn
 145 150 155 160
 Leu Thr Val Gly Pro Tyr Phe Ser Tyr Met Leu Glu Gly Asp Phe Ser
 165 170 175
 Gly Asn Val Tyr Glu Gly Tyr Leu Arg Lys Thr Asp Pro Thr Gly Pro

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<210> 6173
<211> 415
<212> PRT
<213> B.fragilis
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<400>	6173														
Lys	Val	Tyr	Glu	Pro	Met	Thr	Glu	Trp	Tyr	Ser	Phe	Leu	Lys	Leu	Arg
1				5					10					15	
Gly	Ser	Tyr	Gly	Ser	Leu	Gly	Asn	Gln	Asp	Val	Asp	Ala	Tyr	Ala	Tyr
			20					25					30		
Leu	Ala	Thr	Met	Gly	Ser	Gly	Lys	Ile	Ser	Gln	Ile	Leu	Asp	Lys	Gln
			35				40					45			
Gln	Pro	Val	Tyr	Val	Gly	Ala	Pro	Gly	Leu	Val	Ala	Gly	Asn	Leu	Thr
	50					55					60				
Trp	Glu	Lys	Val	Thr	Thr	Thr	Asn	Leu	Ala	Leu	Asp	Ala	Asn	Phe	Phe
65				70						75					80
Asp	Asn	Arg	Leu	Ser	Ile	Thr	Gly	Glu	Val	Tyr	Val	Arg	Arg	Thr	Lys
				85					90					95	
Asp	Met	Leu	Thr	Pro	Gly	Val	Thr	Leu	Pro	Ser	Val	Leu	Gly	Thr	Asp
			100					105					110		
Val	Pro	Lys	Gln	Asn	Ala	Ala	Asp	Leu	Lys	Thr	Glu	Gly	Trp	Glu	Leu
		115					120					125			
Thr	Val	Gly	Trp	Lys	Asp	Gln	Phe	Lys	Leu	Ala	Gly	Lys	Pro	Phe	Tyr
	130					135					140				
Tyr	Asp	Val	Asn	Phe	Asn	Leu	Ala	Asp	Ser	Arg	Ala	Tyr	Ile	Thr	Lys
145				150						155					160
Tyr	Glu	Asn	Pro	Lys	Gly	Leu	Leu	Gly	Asp	Tyr	Tyr	Val	Gly	Lys	Glu
				165				170						175	
Ile	Gly	Glu	Ile	Trp	Gly	Val	Glu	Thr	Leu	Gly	Phe	Phe	Thr	Ser	Glu
			180					185					190		
Glu	Asp	Ile	Lys	Asn	His	Ala	Asp	Gln	Ser	Trp	Cys	Thr	Ser	Tyr	Pro
		195					200					205			
Gly	Thr	Arg	Pro	Leu	Ala	Pro	Gly	Asp	Leu	Lys	Phe	Lys	Asp	Glu	Asn
	210					215					220				
Lys	Asp	Gly	Lys	Ile	Thr	Asp	Gly	Ala	Trp	Thr	Leu	Glu	Asp	His	Gly
225				230						235					240
Asp	Tyr	Lys	Ile	Ile	Gly	Asn	Ser	Arg	Ala	Arg	Tyr	Thr	Phe	Gly	Leu
				245					250					255	
Ser	Ala	Asn	Ala	Gln	Trp	Asn	Gly	Phe	Asp	Leu	Ser	Leu	Phe	Ala	Gln
			260					265					270		
Gly	Val	Gly	Lys	Lys	Asp	Tyr	Tyr	Pro	Gly	Thr	Gly	Asp	Leu	Tyr	Phe
		275					280					285			
Trp	Gly	Ile	Tyr	Ala	Gln	Pro	Trp	Thr	Asn	Ile	Thr	Lys	Gly	Asn	Met
	290					295					300				
Tyr	Asp	His	Trp	Thr	Glu	Asn	Pro	Asp	Ala	Tyr	Phe	Pro	Arg	Met	
305				310					315						320
Lys	Ala	Tyr	Val	Ala	Glu	Asn	Thr	Asp	Arg	Glu	Cys	Gly	Val	Val	Gln

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          325          330          335
Thr Arg Tyr Leu Gln Asn Ala Ala Tyr Met Arg Leu Lys Asn Leu Thr
          340          345          350
Val Gly Tyr Thr Leu Pro Lys Val Leu Leu Asn Lys Ile Gly Ile Glu
          355          360          365
Arg Leu Arg Ile Phe Phe Ser Gly Asp Asn Leu Cys Glu Phe Ser Gly
          370          375          380
Leu Tyr Lys His Tyr Lys Val Asp Pro Glu Ser Leu Gly Asp Ile Val
          385          390          395          400
Tyr Pro Leu Gln Arg Ser Tyr Ser Phe Gly Leu Asn Val Thr Phe
          405          410          415

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<210> 6174
 <211> 201
 <212> PRT
 <213> B.fragilis

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<400> 6174
His Tyr Lys Glu Gln Met Glu Thr Ala Glu Asn Lys Tyr Ile Thr Val
1          5          10          15
Ala Tyr Lys Leu Tyr Thr Thr Glu Asp Gly Lys Arg Asp Leu Val Glu
          20          25          30
Glu Thr Ala Ala Glu His Pro Phe Gln Phe Ile Ser Gly Leu Gly Thr
          35          40          45
Thr Leu Glu Ala Phe Glu Ser Gln Ile Val Asn Leu His Lys Gly Asp
          50          55          60
Lys Phe Glu Phe Thr Ile Pro Phe Ala Glu Ala Tyr Gly Glu Tyr Asp
65          70          75          80
Glu Glu His Val Ile Asp Leu Pro Lys Asn Ile Phe Glu Ile Asp Gly
          85          90          95
Lys Phe Asp Asn Glu His Ile Tyr Pro Gly Asn Ile Ile Pro Leu Met
          100          105          110
Asn Ser Glu Gly Gln Arg Leu Asn Gly Ser Val Val Glu Val Lys Ala
          115          120          125
Asp Thr Val Val Met Asp Met Asn His Pro Leu Ala Gly Glu Asp Leu
          130          135          140
Thr Phe Val Gly Glu Val Thr Glu Ser Arg Pro Ala Thr Asn Glu Glu
145          150          155          160
Ile Gln Glu Met Ile Lys Met Met Thr Gly Glu Gly Gly Cys Ser Cys
          165          170          175
Gly Ser Cys Gly Asp Gly Cys Gly Asp Asp Cys Gly Asp Ser Cys Gly
          180          185          190
Asp Ser Cys Gly Cys Gly His Cys His
          195          200

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<210> 6175
 <211> 460
 <212> PRT
 <213> B.fragilis

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<400> 6175
Asn His Ser Leu Ile Arg Ile Gly Tyr Ser Leu Val Lys Trp Met Val
1          5          10          15
Tyr Lys Ser Ile Phe Pro Thr Phe Val Gln Asn Ile Asn Leu Gly Gln
          20          25          30
Met Thr Glu Ser Glu Arg Lys Gln Ile Ile Ala Leu Ile Gln Arg Glu
          35          40          45
Val Ile Pro Ala Ile Gly Cys Thr Glu Pro Ile Ala Val Ala Leu Cys
          50          55          60

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Val Ala Lys Ala Thr Glu Thr Leu Gly Ala Lys Pro Glu Lys Ile Lys
 65 70 75 80
 Val Leu Leu Ser Ala Asn Ile Leu Lys Asn Ala Met Gly Val Gly Ile
 85 90 95
 Pro Gly Thr Gly Met Ile Gly Leu Pro Ile Ala Met Ala Leu Gly Ala
 100 105 110
 Leu Ile Gly Lys Ser Asp Tyr Gln Leu Glu Val Leu Lys Asp Ser Thr
 115 120 125
 Pro Glu Ala Val Glu Glu Gly Lys Lys Leu Ile Asp Glu Lys Arg Ile
 130 135 140
 Cys Ile Ser Leu Lys Glu Asp Ile Thr Glu Lys Leu Tyr Ile Glu Val
 145 150 155 160
 Thr Cys Glu Ala Gly Gly Glu Gln Ala Thr Ala Ile Ile Ser Gly Gly
 165 170 175
 His Thr Thr Phe Val Tyr Val Ala Lys Gly Asp Glu Val Leu Leu Asn
 180 185 190
 Lys Gln Gln Thr Ser Gly Glu Glu Glu Glu Glu Thr Leu Glu Leu
 195 200 205
 Thr Leu Arg Lys Val Tyr Asp Phe Ala Leu Thr Ala Pro Leu Asp Glu
 210 215 220
 Ile Arg Phe Ile Leu Glu Thr Ala Arg Leu Asn Lys Lys Ala Ala Glu
 225 230 235 240
 Gln Ser Phe Gln Gly Asp Tyr Gly His Ala Leu Gly Lys Met Leu Arg
 245 250 255
 Gly Thr Tyr Glu His Lys Ile Met Gly Asp Ser Val Phe Ser His Ile
 260 265 270
 Leu Ser Tyr Thr Ser Ala Ala Cys Asp Ala Arg Met Ala Gly Ala Met
 275 280 285
 Ile Pro Val Met Ser Asn Ser Gly Ser Gly Asn Gln Gly Ile Ser Ala
 290 295 300
 Thr Leu Pro Val Val Val Tyr Ala Glu Glu Asn Gly Lys Ser Glu Glu
 305 310 315 320
 Glu Leu Ile Arg Ala Leu Met Met Ser His Leu Thr Val Ile Tyr Ile
 325 330 335
 Lys Gln Ser Leu Gly Arg Leu Ser Ala Leu Cys Gly Cys Val Val Ala
 340 345 350
 Ala Thr Gly Ser Ser Cys Gly Ile Thr Trp Leu Met Gly Gly Ser Tyr
 355 360 365
 Lys Gln Val Ala Phe Ala Val Gln Asn Met Ile Ala Asn Leu Thr Gly
 370 375 380
 Met Ile Cys Asp Gly Ala Lys Pro Ser Cys Ala Leu Lys Val Thr Thr
 385 390 395 400
 Gly Val Ser Thr Ala Val Leu Ser Ala Val Met Ala Met Glu Asn Arg
 405 410 415
 Cys Val Thr Ser Val Glu Gly Ile Ile Asp Glu Asp Val Asp Gln Ser
 420 425 430
 Ile Arg Asn Leu Thr Arg Ile Gly Ser Gln Gly Met Asn Glu Thr Asp
 435 440 445
 Arg Val Val Leu Asp Ile Met Thr His Lys Gly Cys
 450 455 460

<210> 6176

<211> 354

<212> PRT

<213> B.fragilis

<400> 6176

Ile Arg Gly Leu Ile Ala Val Ser Gly Leu Trp Glu His Leu Tyr Ser
 1 5 10 15

Gln Ala Trp Gln Leu Val Val Thr Val Cys Leu Leu Pro Ile Leu Ala
 20 25 30
 Val Ile Phe Ile Ile Leu Ser Tyr Thr Ile Lys Cys Ile Tyr Lys Met
 35 40 45
 Lys Lys Ile Ser Ile Leu Phe Ile Phe Ser Leu Ile Leu Gly Leu Phe
 50 55 60
 Val Ser Glu Val Ser Ala Ala Gly Pro Arg Leu Lys Gln Arg Pro Lys
 65 70 75 80
 His Val Val Leu Val Ala Phe Asp Gly Leu Ser Ala Val Ala Ile Arg
 85 90 95
 Asn His Pro Met Pro Asn Phe Asn Arg Leu Met Lys Glu Gly Ala Ser
 100 105 110
 Thr Leu Asn Asn Arg Ser Ile Leu Pro Ser Ser Ser Ala Pro Asn Trp
 115 120 125
 Ala Ser Met Phe Thr Gly Val Gly Pro Glu Leu His Gly Tyr Thr Thr
 130 135 140
 Trp Gly Ser Lys Thr Pro Glu Ile Pro Pro Phe Ile Thr Asn Gln Tyr
 145 150 155 160
 Gly Arg Phe Pro Gly Leu Tyr Gly Leu Leu Arg Asp Thr His Pro Lys
 165 170 175
 Ala Glu Leu Gly Tyr Ile Tyr Glu Trp Asp Gly Met Lys Tyr Leu Val
 180 185 190
 Asp Ser Leu Ala Ile Asn His Phe Val His Ala Pro Gln Thr Lys Asp
 195 200 205
 His Pro Lys Gly Ala Thr Gln Phe Ala Val Asn Tyr Leu Lys Glu Lys
 210 215 220
 Lys Pro Met Tyr Cys Ala Val Ile Phe Glu Tyr Pro Asp His Thr Gly
 225 230 235 240
 His Thr Tyr Lys Trp Glu Ser Lys Glu Tyr Tyr Glu Lys Leu Asp Glu
 245 250 255
 Leu Asp Gly Tyr Leu Gly Glu Ile Val Ala Ala Ile Glu Glu Ala Asp
 260 265 270
 Met Met Asp Glu Thr Val Ile Ile Leu Thr Ala Asp His Gly Gly Ile
 275 280 285
 Gly Thr Asn His Gly Gly Lys Thr Leu Asn Glu Met Glu Thr Pro Leu
 290 295 300
 Val Phe Tyr Gly Lys Gly Val Lys Lys Asn Tyr Lys Ile Thr Glu Ser
 305 310 315 320
 Thr Met Val Ile Asp Val Pro Ala Thr Glu Ala Trp Leu Leu Gly Val
 325 330 335
 Glu Pro His Glu Ala Trp Leu Gly Asn Pro Val Thr Thr Ala Phe Phe
 340 345 350
 Thr Lys

<210> 6177

<211> 63

<212> PRT

<213> B.fragilis

<400> 6177

Leu Val Ile Phe Asn Phe His Ser Lys Thr Glu Gln Ser Asn Ser Phe
 1 5 10 15
 Ile Ser Ile Gln Thr Arg Ser Ile Leu Arg Ile Leu Cys Ser Lys Phe
 20 25 30
 Lys Ile Lys Leu Val Ile Glu Arg Asn Arg Ile Lys Lys Lys Leu Ile
 35 40 45
 Tyr Asp Ser Asn Arg Ala Asn Ile Ile Tyr Leu His His His Leu
 50 55 60

<210> 6178
 <211> 559
 <212> PRT
 <213> B.fragilis

<400> 6178

Ser	Gly	Ser	Leu	Gln	Ser	Ser	Gly	Glu	Tyr	Ser	Asn	Ile	Ile	Ile	Thr
1				5					10					15	
Ser	Ala	Tyr	Ala	Asp	Leu	Thr	Gly	Leu	Asp	Asn	Pro	Trp	Pro	Ala	Val
			20					25					30		
Ser	Asp	Glu	Leu	Lys	Ser	Ala	Gln	Asn	Asn	Val	Lys	Thr	Ile	Pro	Thr
		35					40					45			
Ile	Gly	Tyr	His	Ala	Gly	Ser	Ala	Thr	Leu	Ser	Arg	Trp	Ser	Leu	Tyr
	50					55					60				
Lys	Gln	Ile	Arg	Gln	Ala	Asn	Glu	Phe	Ile	Ala	Tyr	Ala	His	Val	Ile
65					70				75						80
Pro	Gln	Asn	Gly	Asp	Val	Ala	Asp	Phe	Ile	Asp	Glu	Lys	Glu	Leu	Ala
				85				90						95	
Leu	Leu	Lys	Asn	Glu	Ala	Arg	Phe	Leu	Arg	Ala	Tyr	Tyr	His	Tyr	Leu
			100					105					110		
Leu	Phe	Glu	Leu	Tyr	Gly	Pro	Ile	Pro	Ile	Met	Thr	Glu	Ile	Ala	Asp
		115					120					125			
Pro	Ser	Ala	Ala	Asp	Leu	Asp	Tyr	Tyr	Arg	Asn	Leu	Val	Asp	Glu	Val
						135					140				
Val	Ala	Phe	Ile	Asp	Lys	Glu	Leu	Asn	Glu	Cys	Tyr	Asp	Leu	Leu	Pro
145					150				155						160
Glu	Lys	Glu	Leu	Asn	Pro	Asp	Gly	Thr	Ile	Asn	Asn	Glu	Arg	Ala	Ala
				165					170					175	
Ala	Pro	Thr	Lys	Gly	Ala	Ala	Leu	Ala	Ile	Leu	Ala	Lys	Leu	His	Val
			180					185					190		
Tyr	Ala	Ala	Ser	Pro	Leu	Phe	Asn	Gly	Gly	Tyr	Pro	Glu	Ala	Ile	Ala
			195				200					205			
Leu	Lys	Asp	Asn	Gln	Gly	Lys	Gln	Leu	Phe	Pro	Ala	Lys	Asp	Asp	Thr
		210				215					220				
Lys	Trp	Lys	Thr	Ala	Leu	Asp	Ala	Leu	Gln	Arg	Phe	Ile	Asp	Tyr	Ser
225					230					235					240
Lys	Gly	Arg	Tyr	Ser	Leu	Tyr	Gln	Val	Met	Lys	Asn	Gly	Glu	Ile	Asp
				245					250					255	
Pro	Ala	Glu	Ser	Leu	Tyr	Gln	Leu	Phe	Gln	Val	Ser	Val	Asn	Asn	Ser
			260					265					270		
Glu	Ala	Val	Trp	Gln	Ser	Ser	Lys	Asn	Ser	Trp	Gly	Gly	Val	Asn	Gly
		275					280					285			
Glu	Gly	Arg	Glu	Arg	Arg	Cys	Thr	Pro	Arg	Ala	Ile	Phe	Ser	Gly	Phe
	290					295				300					
Ser	Cys	Val	Gly	Val	Leu	Gln	Glu	Ala	Ile	Asp	Asp	Phe	Leu	Met	Ser
305					310					315					320
Asp	Gly	Lys	Ser	Ile	Glu	Glu	Ser	Gly	Leu	Tyr	Lys	Glu	Glu	Gly	Ile
				325					330					335	
Gly	Glu	Asp	Gly	Ile	Pro	Asn	Met	Tyr	Lys	Asn	Arg	Glu	Pro	Arg	Phe
			340					345					350		
Tyr	Gln	Asp	Ile	Thr	Tyr	Ser	Gly	Lys	Val	Trp	Gln	Lys	Thr	Asp	Lys
		355					360					365			
Lys	Ile	Tyr	Phe	Tyr	Lys	Gly	Met	Pro	Asp	Asp	Asn	Ser	Lys	Ala	Asp
	370					375					380				
Met	Ser	Tyr	Ser	Gly	Tyr	Leu	Leu	Tyr	Lys	Gly	Met	Asn	Arg	Asp	Leu
385					390					395					400
Leu	Asn	Gln	Gly	Asn	Asn	Pro	Lys	Ser	Lys	Tyr	Arg	Ala	Gly	Met	Leu
				405					410					415	

Phe Arg Leu Ala Asp Phe Tyr Leu Leu Tyr Ala Glu Ala Leu Asn His
 420 425 430
 Val Asn Pro Gly Asp Ala Arg Ile Ile Gln Tyr Val Asp Ser Val Arg
 435 440 445
 Tyr Arg Ala Gly Ile Pro Leu Leu Lys Asp Ile Lys Pro Gly Ile Ile
 450 455 460
 Gly Asn Arg Glu Leu Gln Glu Lys Ala Ile Arg His Glu Arg Arg Ile
 465 470 475 480
 Glu Leu Phe Ala Glu Gly Gln Arg Tyr Phe Asp Val Arg Arg Trp Met
 485 490 495
 Cys Ala Glu Glu Glu Gly Tyr Lys Gln Gly Gly Pro Val His Gly Met
 500 505 510
 Asp Met Asn Ala Thr Asp Leu Glu Gly Phe Met Lys Arg Thr Ala Phe
 515 520 525
 Glu Thr Arg Ile Phe Glu Lys Arg Met Tyr Leu Tyr Pro Ile Pro Leu
 530 535 540
 Ala Glu Ile Gln Lys Ser Lys Lys Leu Val Gln Asn Pro Gly Trp
 545 550 555

<210> 6179

<211> 378

<212> PRT

<213> B.fragilis

<400> 6179

Lys Arg Val Met Asn Lys Gly Phe Ile Leu Lys Ala Leu Phe Leu Leu
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 Cys Phe Leu Phe Ser Gln Thr Ala Gln Gly Gln Ser Phe Thr Pro Gly
 20 25 30
 Glu Ile Trp Pro Asp Asn His Gln Val His Ile Asn Ala His Gly Gly
 35 40 45
 Gly Ile Leu Tyr Glu Asn Gly Thr Tyr Tyr Trp Phe Gly Glu His Lys
 50 55 60
 Thr Glu Gly Glu Ala Gly Asn Leu Ala Asn Val Gly Val His Cys Tyr
 65 70 75 80
 Ser Ser Asp Asp Leu Tyr His Trp Lys Asp Cys Gly Ile Ala Leu Ser
 85 90 95
 Val Ile Glu Asn Asp Pro Gly His Pro Ile Ser Lys Gly Cys Ile Leu
 100 105 110
 Glu Arg Pro Lys Val Ile Tyr Asn Pro Leu Thr Lys Lys Tyr Val Met
 115 120 125
 Trp Phe His Leu Glu Pro Lys Gly Ala Gly Tyr Ser Gly Ala Leu Ser
 130 135 140
 Gly Ile Ala Leu Ser Asp Arg Val Thr Gly Pro Tyr Thr Phe Leu Lys
 145 150 155 160
 Ala Val Arg Pro Asn Ala Gly Ser Trp Pro Ile Asn Val Leu Pro Ile
 165 170 175
 His Lys Thr Thr Arg Arg Pro Ser Ala Glu Glu Glu Arg Gln Cys Thr
 180 185 190
 Gly Gly Ser Leu Pro Ala His Pro Asp Ser Leu Asn Ile Leu Gly Arg
 195 200 205
 Asp Met Glu Gln Gly Gln Met Ala Arg Asp Met Asn Leu Phe Val Asp
 210 215 220
 Asp Asp Gly Lys Ala Tyr His Ile Tyr Ser Ser Glu Glu Asn Ser Thr
 225 230 235 240
 Leu His Ile Ala Glu Leu Asp Pro Thr Tyr Thr Gly Tyr Thr Gly Lys
 245 250 255
 Tyr Ile Arg Ala Phe Ile Asn Arg Phe Met Glu Ala Pro Ala Met Phe
 260 265 270

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<210> 6180
<211> 452
<212> PRT
<213> B.fragilis
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<400>	6180														
Lys 1	Gln	Thr	Ile	Ile 5	Leu	Lys	Leu	Lys	Leu 10	Met	Leu	Lys	Asn 15	His	Cys
Cys	Met	Gly	Thr 20	Gly	Cys	Arg	Arg	Ala 25	Ile	Leu	Phe	Leu 30	Leu	Phe	Phe
Pro	Leu	Phe 35	Gly	Thr	Gly	Phe	Ala 40	Gln	Thr	Glu	Thr	Pro 45	Val	Lys	Val
Asp	Lys 50	Pro	Leu	Lys	Ser	Tyr 55	Ser	His	Trp	Tyr	Phe 60	Gly	Ala	Glu	Tyr
Gly 65	Val	Pro	Phe	Leu	Phe 70	Gly	Asp	Phe	Thr	Ser 75	Phe	Ser	Ala	Asp	Lys 80
Asn	Tyr	Val	Gly	Ser 85	Gln	Phe	Gly	Gly	Phe 90	Ala	Gly	Tyr	Gln	Val	Asn 95
Ser	Trp	Ile	Gly 100	Ile	Glu	Ala	Ser	Ala 105	Arg	Thr	Gly	Tyr	Thr 110	Arg	Met
Gly	Ala	Lys 115	Ser	Tyr	Ala	Gly	Asp 120	Tyr	Leu	Met	Asn 125	Ala	Asp	Gly	Met
Thr	Tyr 130	Tyr	Thr	Asn	Gln	Asp 135	Phe	Asn	Thr	Trp	Lys 140	Tyr	Lys	Asp	Val
Phe 145	Ser	Lys	Val	His	Phe 150	Thr	Asn	Ile	Gly	Leu	Gln 155	Met	Asn	Leu	Asn 160
Val	Asn	Asn	Phe	Phe 165	Gly	Pro	Asn	Arg	Gly	Asn 170	Arg	Arg	Trp	Thr	Val
Leu	Leu	Ser	Pro 180	Ala	Val	Tyr	Ala	Gln 185	His	Phe	Ser	Thr 190	Glu	Leu	Ile
Asn	Lys 195	Ala	Asp	Lys	Ser	Pro	Leu 200	Ser	Gly	Lys	Lys 205	Thr	Asp	Lys	Trp
Asn	Ile 210	Gly	Ile	Gly	Gly	Asp 215	Val	Ser	Leu	Arg	Tyr 220	Lys	Ile	Ser	Arg
Ala 225	Phe	Asp	Val	Gln	Leu	Arg 230	Thr	Gly	Ile	Ile 235	Trp	Val	Asn	Asn	Asn 240
Lys	Met	Asp	Gly	Ile 245	Ser	Thr	Leu	Ile	Lys 250	Ser	Lys	Asp	His	Phe	Met 255
Thr	Ser	Ala	Gly 260	Leu	Ser	Leu	Ile 265	Trp	Lys	Val	Gly	Lys	Lys 270	Lys	Glu
Asp	Asn	Val 275	Leu	Tyr	Ala	Ser	Arg 280	Arg	Ala	Ala	Asp	Val	Glu	Ile	Arg
Tyr	Ile 290	Glu	Glu	Arg	Ala	Val 295	Ser	Leu	Pro	Thr	Pro	Ala	Cys	Cys	Val

Glu Asp Ser Ile Glu Lys Glu Arg Met Lys Arg Glu Ile Ala Ser Leu
 305 310 315 320
 Asn Met Gln Leu Gln Gln Ala His Thr Val Val Lys Glu Lys Thr Gly
 325 330 335
 Ser Asp Pro Ile Leu Gly Phe Asn Glu Leu Pro Pro Val Tyr Phe Lys
 340 345 350
 Arg Gly Ser Ala Tyr Leu Asn Val Ala Leu Tyr Lys Asn Glu Leu Cys
 355 360 365
 Arg Ile Val Gln Thr Leu Lys Lys Tyr Pro Glu Leu Lys Val Ile Leu
 370 375 380
 Ser Gly His Ala Asp His Thr Gly Asn Pro Asp Ile Asn Gln Lys Ile
 385 390 395 400
 Ser Leu Gln Arg Ala Glu Ala Leu Ala Ala Tyr Leu Glu Lys Lys Gly
 405 410 415
 Ile Asp Gly Lys Arg Ile Ala Val Lys Gly Glu Cys Ile Asp Met Leu
 420 425 430
 Thr Ser Asp Pro Asn Asn Tyr Ser Val Leu Ala Arg Arg Val Ile Val
 435 440 445
 Glu Ile Gln Lys
 450

<210> 6181
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 6181
 Tyr Phe Lys Met Lys Glu Asn Thr Met Tyr Ser Asn Leu Glu Ser Val
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 Glu Gln Leu Phe Arg Gln Tyr Tyr Lys Val Leu Arg Val Tyr Ala Phe
 20 25 30
 Arg Phe Val Asn Asp Trp Asp Ile Ala Glu Asp Val Val Gln Asp Val
 35 40 45
 Phe Val Ala Leu Trp Asn Lys Arg Thr Asp Ile Glu Phe Asp Gly Ala
 50 55 60
 Val Lys Ala Tyr Leu Phe Lys Ala Val Tyr Asn Lys Ser Leu Asn Ile
 65 70 75 80
 Leu Ser Ser Lys Lys Tyr Thr Glu Glu Glu Ser Val Glu Gln Phe Ser
 85 90 95
 Asp Gln Ile Glu Ala Leu Gln Ile Leu Glu Asn Asn Gln Glu Asn Ser
 100 105 110
 Leu Phe Met Lys Glu Leu Gln Ser Glu Ile Glu Thr Phe Ile Glu Thr
 115 120 125
 Leu Pro Thr Gln Val Lys Lys Val Phe Ile Leu Ser Arg Ser Tyr Gly
 130 135 140
 Leu Lys Ile Lys Glu Ile Ser Val Gln Leu Asp Leu Ser Pro Lys Thr
 145 150 155 160
 Val Glu Lys Tyr Leu Thr Arg Ala Leu Leu Glu Leu Arg Thr His Leu
 165 170 175
 Lys Asn Lys Asp Leu Met Ser Leu Leu Phe Leu Leu Tyr Leu Cys Leu
 180 185 190
 Lys

<210> 6182
 <211> 377
 <212> PRT
 <213> B.fragilis

<400> 6182

Asn Pro Lys Met Lys Thr Met Ile Arg Lys Lys Ile Tyr Leu Leu Leu
 1 5 10 15
 Leu Leu Ile Pro Leu Leu His Gly Cys Lys Glu Ser Asp Phe Asn Asp
 20 25 30
 Leu Leu Asp Arg Gln Gly Asp Gln Arg Lys Glu Leu Gln Glu Leu Thr
 35 40 45
 Asp Leu Cys Lys Lys Leu Asn Glu Asp Ile Tyr Asn Leu Gln Val Ile
 50 55 60
 Val Asn Thr Asp Arg Ile Gly Asp Asn Ile Thr His Ile Glu Glu Leu
 65 70 75 80
 Ala Asp Gly Ala Gly Tyr Thr Ile Ser Phe Ser Lys Ser Ala Pro Ile
 85 90 95
 Thr Ile Arg Asn Gly Lys Lys Gly Asp Thr Gly Pro Asp Gly Asp Ala
 100 105 110
 Gly Lys Asp Gly Ile Asp Gly Thr Asp Gly Lys Asp Gly Val Asp Gly
 115 120 125
 Thr Asp Gly Lys Asp Gly Val Asp Gly Thr Asp Gly Thr Asp Gly Lys
 130 135 140
 Asp Gly Glu Asn Gly Thr Asp Gly Lys Asp Gly Ala Asp Gly Thr Asn
 145 150 155 160
 Gly Thr Asp Gly Lys Asp Gly Val Asp Gly Thr Asp Gly Lys Asp Gly
 165 170 175
 Val Asp Gly Thr Asn Gly Asn Lys Gly Glu Gln Gly Asp Pro Gly Gln
 180 185 190
 Asn Pro Val Val Gly Ile Met Gln Asp Pro Ala Asp Ser Glu Tyr Tyr
 195 200 205
 Trp Thr Ile Lys Ile Gly Ser Gly Glu Pro Tyr Tyr Leu Ala Asp Asn
 210 215 220
 Asp Gly Asn Arg Ile Lys Ala Thr Ser Thr Val His Asp Gly Gln Thr
 225 230 235 240
 Pro Gln Leu Gly Val Lys Gln Trp Glu Thr Ser Ala Gly Gly Asp Asp
 245 250 255
 Asn Tyr Tyr Trp Thr Gln Lys Ile Gly Thr Gly Pro Glu Thr Trp Ile
 260 265 270
 Glu Ala Asp Gly Lys Lys Ile Val Ala Asn Ala Lys Asn Ala Val Ser
 275 280 285
 Val Phe Glu Lys Val Asp Leu Lys Glu Pro Asp Tyr Val Glu Phe Thr
 290 295 300
 Leu Ser Gly Gly Ala Thr Arg Phe Arg Leu Pro Ile Gly Arg Pro Val
 305 310 315 320
 Ile Glu Val Pro Glu Gly Arg Lys Leu Phe Phe Phe Asn Arg Gly Gly
 325 330 335
 Ser Gln Ala Ile Ala Phe Ser Cys Lys Gly Ile Ser Lys Glu Gln Leu
 340 345 350
 Ser Val Asp Val Pro Lys Gly Trp Arg Ala Thr Val Asp Ser Glu Ala
 355 360 365
 Val Ala Ser Leu His Arg Arg Gly Cys
 370 375

<210> 6183

<211> 378

<212> PRT

<213> B.fragilis

<400> 6183

Thr Lys Arg Ile Ile Asn Gln Lys Gln Asn Arg Met Lys Leu Lys Asn
 1 5 10 15
 Leu Ile Ala Cys Phe Phe Leu Gly Phe Ile Met Val Ser Cys Ile Gln

										20										25										30																								
Asp	Glu	Ala	Pro	Asn	Ala	Glu	Ala	Ala	Ile	Asp	Ala	Cys	Lys	Gly	Ser																																							
															35										40										45																			
Asp	Asp	Val	Val	Leu	Thr	Asp	Ile	Asn	Ala	Glu	Ala	Lys	Arg	Ile	Ser																																							
															50										55										60																			
Ile	Tyr	Val	Tyr	Lys	Thr	Ala	Asp	Ile	Thr	Lys	Gln	Lys	Leu	Asn	Phe																																							
															65										70										75										80									
Val	Leu	Pro	Gln	Gly	Ala	Thr	Ile	Asn	Pro	Pro	Ser	Gly	Ile	Glu	Asn																																							
															85										90										95																			
Asp	Phe	Thr	Thr	Pro	Gln	Lys	Tyr	Thr	Val	Thr	Ser	Glu	Asp	Gly	Lys																																							
															100										105										110																			
Trp	Ser	Ala	Val	Tyr	Thr	Val	Glu	Phe	Val	Lys	Ser	Glu	Leu	Pro	Thr																																							
															115										120										125																			
Asn	Tyr	His	Phe	Glu	Thr	Leu	Thr	Glu	Ser	Ser	Ala	Asn	Lys	Tyr	Asp																																							
															130										135										140																			
Ile	Phe	Tyr	Glu	Phe	Gln	Glu	Gly	Thr	Ser	Thr	Glu	Pro	Ser	Lys	Ile																																							
															145										150										155										160									
Val	Gln	Trp	Ala	Ser	Gly	Asn	Ile	Gly	Tyr	Asp	Leu	Thr	Gly	Met	Ala																																							
															165										170										175																			
Lys	Glu	Ser	Asn	Asp	Tyr	Pro	Thr	Val	Gln	Val	Asn	Asp	Gly	Lys	Ile																																							
															180										185										190																			
Gly	Lys	Cys	Leu	Lys	Leu	Glu	Thr	Lys	Asn	Thr	Gly	Ser	Phe	Gly	Ala																																							
															195										200										205																			
Gly	Val	Asn	Met	Pro	Ile	Ala	Ala	Gly	Asn	Leu	Phe	Ile	Gly	Lys	Phe																																							
															210										215										220																			
Asp	Val	Ser	Asn	Ala	Leu	Ala	Asp	Ala	Leu	Lys	Ala	Thr	Gln	Phe	Gly																																							
															225										230										235										240									
Leu	Pro	Phe	Tyr	Lys	Val	Pro	Gln	Ser	Leu	Lys	Gly	Tyr	Tyr	Lys	Phe																																							
															245										250										255																			
Lys	Ala	Gly	Asp	Ile	Phe	Thr	Glu	Asn	Gly	Lys	Pro	Val	Glu	Gly	Lys																																							
															260										265										270																			
Lys	Asp	Gln	Cys	Asp	Ile	Tyr	Ala	Ile	Phe	Tyr	Glu	Thr	Asp	Asn	Asn																																							
															275										280										285																			
His	Glu	Met	Leu	Asp	Gly	Tyr	Asn	Ala	Leu	Thr	Ser	Pro	Lys	Leu	Ile																																							
															290										295										300																			
Ser	Val	Ala	Arg	Ile	Glu	Asp	Pro	Lys	Glu	Thr	Asp	Gln	Trp	Thr	Glu																																							
															305										310										315										320									
Phe	Asn	Leu	Pro	Phe	Ile	Met	Arg	Pro	Gly	Lys	Thr	Ile	Asp	Gln	Ala																																							
															325										330										335																			
Lys	Leu	Lys	Ala	Gly	Lys	Tyr	Lys	Leu	Ser	Ile	Val	Phe	Ser	Ser	Ser																																							
															340										345										350																			
Ile	Glu	Gly	Asp	His	Phe	Arg	Gly	Ala	Val	Gly	Ser	Thr	Leu	Tyr	Ile																																							
															355										360										365																			
Asp	Glu	Val	Glu	Leu	Ile	Phe	Lys	Glu	Asn																																													
															370										375																													

<210> 6184

<211> 352

<212> PRT

<213> B.fragilis

<400> 6184

Ile	Ser	Leu	Val	Leu	Leu	Ile	Glu	Glu	Leu	Lys	Met	Lys	Asn	Glu	Ile
1	5			10			15								
Lys	Asp	Ile	Asn	Glu	Val	Ile	Ile	Arg	Phe	Leu	Asp	Gly	Thr	Ala	Thr
20			25			30									
Gly	Glu	Glu	Lys	Val	Phe	Leu	Phe	Asn	Trp	Leu	Lys	Gln	Ser	Glu	Lys
35			40			45									
Asn	Arg	Asn	Glu	Phe	Ser	Glu	Val	Arg	Asp	Leu	Trp	Leu	Leu	Gly	Asn

115	120	125
Thr Glu Thr Ser Leu Tyr Gly Asp Trp Ile Asp Asn Leu Lys Glu Tyr		
130	135	140
Val Lys Thr Asn Pro Thr Ala Phe Ile Ile His Thr Gly Asp Ile Cys		
145	150	155
Tyr Glu Ala His Gln Asp Phe His Gly His Tyr Leu Arg Ser Val Asp		
165	170	175
Leu Gly Ile Pro Thr Tyr Tyr Cys Val Gly Asn His Asp Leu Arg Ala		
180	185	190
Gly Lys Tyr Gly Glu Glu Leu Trp Gln Ser His Phe Gly Pro Ser Trp		
195	200	205
Tyr Ser Phe Asp Val Gly Asn Val His Tyr Val Val Thr Pro Met Leu		
210	215	220
Gly Gly Asp His Ala Pro Ser Tyr Arg Arg Ser Asp Ile Ile Arg Trp		
225	230	235
Leu Lys Asn Asp Leu Ala Gln Thr Asp Lys Gly Lys Arg Ile Val Leu		
245	250	255
Phe Asn His Asp Leu Trp Phe Trp Gly Asp Asp Leu Leu Phe Lys Asp		
260	265	270
Lys Asn Gly Glu Gln Ile Asp Phe Ala Asp Tyr Asn Leu Asp Ala Met		
275	280	285
Ile Tyr Gly His Trp His Asn His Tyr Tyr Lys Gln Leu Lys Ser Gly		
290	295	300
Leu His Thr Tyr Cys Ser Ser Thr Pro Asp Lys Gly Gly Ile Asp His		
305	310	315
Gly Thr Ser Cys Phe Arg Ile Tyr Asn Ala Asp Thr Lys Gly Lys Leu		
325	330	335
Ser Ser Ala Thr Arg Tyr Thr Tyr Ile Asp Gly Ile Leu Thr Ser Ala		
340	345	350
Tyr Pro Ala Glu Gly Glu Thr Val Ser Val Pro Asp Gly Lys Met Thr		
355	360	365
Val Arg Ile Asn Ala Tyr Arg Thr Ile Ser Asp Ala Lys Lys Val Thr		
370	375	380
Ala Ser Val Glu Arg Asn Gly Arg Leu Val Ser Thr Val Thr Leu Met		
385	390	395
Pro Glu Thr Asp Trp Gly Trp Ser Gly Ala Val Arg Val Ser Gly Gly		
405	410	415
Lys Gln Arg Leu Leu Val Thr Ala Glu Phe Glu Asp Gly Thr Arg Leu		
420	425	430
Thr Lys Arg Val Asp Tyr Thr Val Thr Lys Gln Pro Leu Ser Val Ile		
435	440	445
Ala Thr Ser Asp Val Trp Ala Gly Leu Arg Gly Asn Ala Ala His Asn		
450	455	460
Gln Leu Val Asn Asp Ser Val Ser Leu Pro Leu Gln Thr Asn Trp Ile		
465	470	475
Gln Asn Val Gly Ser Asn Ile Tyr Met Cys Ser Pro Ile Val Ala Gln		
485	490	495
Asn Lys Val Phe Ile Gly Thr Ile Asp Asp Asp Lys Ala Lys Lys Cys		
500	505	510
Tyr Val Lys Ala Tyr Asp Ala Thr Thr Gly His Leu Cys Trp Thr Phe		
515	520	525
Val Thr Ser Asn Ser Ile Lys Asn Thr Ile Ala Tyr Glu Asp Gly Arg		
530	535	540
Ile Phe Ala Ser Asp Ala Ser Gly Met Leu Tyr Ala Ile Asp Ala Glu		
545	550	555
Lys Gly Thr Ala Cys Trp Gln Thr Gln Leu Pro Val Ser Leu Leu Pro		
565	570	575
Leu Leu Asp Glu Gly Leu Ala Val Ala Asp Gly Val Val Tyr Ala Gly		
580	585	590

His Ala Lys Gly Thr Cys Ala Val Arg Ala Val Asp Gly Lys Ile Leu
 595 600 605
 Trp Gln Asn Lys Ala Trp Asp Gly Gly Glu Gly Thr Thr Ser Thr Phe
 610 615 620
 Thr Val Gly Ala Gly Val Leu Val Ala Ser Ala His Trp Asn Gly Leu
 625 630 635 640
 Phe Gly His Asp Ile Ser Asn Gly Ala Leu Leu Trp Lys Lys Arg Asp
 645 650 655
 Ser Lys Ile Arg Phe Arg Asp Gly Ser Ala Thr Phe Tyr Asp Gly Asn
 660 665 670
 Phe Tyr Leu Ala Ser Cys Glu Asn Leu Tyr Val Ile Asn Pro Arg Ser
 675 680 685
 Gly Asp Ile Leu Lys Met Ala Glu Thr Ser Tyr Glu Phe Asn Ser Ala
 690 695 700
 Cys Ala Pro Leu Val Thr Asp Lys Tyr Leu Ile Val Ser Thr Ser Asn
 705 710 715 720
 Lys Gly Val Val Ala Phe Asp Arg Leu Thr Phe Lys Glu Val Trp Asn
 725 730 735
 Tyr Arg Thr Gly Thr Ser Leu Phe Tyr Thr Val Pro Tyr Ser His Asn
 740 745 750
 Gln Glu Cys Thr Val Glu Val Ser Pro Val Leu Val Gly Ser Thr Val
 755 760 765
 Leu Phe Gly Ala Ser Asp Gly Tyr Leu His Ala Val Asp Leu Asn Thr
 770 775 780
 Gly Ala Tyr Arg Gly Lys Arg Ala Leu Gly Ala Pro Val Phe Ser Ser
 785 790 795 800
 Val Ala Val Ser Gly Asn Cys Leu Phe Val Ala Asp Phe Gly Gly Asn
 805 810 815
 Ile Tyr Asn Phe Lys Leu His Asn
 820

<210> 6186

<211> 297

<212> PRT

<213> B.fragilis

<400> 6186

Glu Asn Gly Phe Lys Glu Arg Lys Gln Met Lys Arg Ile Ile Ile Gly
 1 5 10 15
 Met Ile Ala Cys Ile Cys Ala Ile Thr Val Met Ala Gln Val Gln Thr
 20 25 30
 His Asp Ile Lys Gly Val Val Phe Asp Arg Arg Gln Gln Pro Ile Val
 35 40 45
 Gly Ala Leu Val Thr Ala Lys Gly Thr Asn Ile Ser Thr Ile Thr Asp
 50 55 60
 Val Asp Gly Lys Phe Leu Leu Gln Glu Val Pro Leu Ser Val Lys Lys
 65 70 75 80
 Val Val Val Thr Ser Ile Gly Met Glu Thr Arg Glu Val Asp Leu Asn
 85 90 95
 Val Pro Val Gln Leu Thr Gly Lys Arg Lys Lys Val Ser Phe Val Ala
 100 105 110
 His Ala Gly Leu Ser Met Ser Lys Tyr Thr Ile Tyr Gly Ser Asp Phe
 115 120 125
 Lys Val Gly Tyr Glu Phe Gly Leu Gly Ile Glu Val Arg Met Ser Lys
 130 135 140
 Arg Trp Ala Phe Gln Pro Thr Leu Gln Ile Cys Asn His Gly Ala Glu
 145 150 155 160
 Phe Asn Ala Glu Arg Tyr Gly Val Lys Tyr Gln Glu Thr Trp Asn Pro
 165 170 175

Val Ser Leu Asp Leu Pro Met Leu Phe Ile Leu Arg Cys Pro Ile Ala
 180 185 190
 Arg Lys Met Asn Leu Ala Phe Ser Met Gly Pro Val Phe Ser Tyr Gly
 195 200 205
 Phe Ala Gly Lys Val Lys Ala Ser Glu Thr Gly Lys Pro Asp Glu Glu
 210 215 220
 Tyr Asp Ile Tyr Ser Ser Glu Tyr Glu Tyr Asp Tyr Ser Gly Gly Lys
 225 230 235 240
 His Ser Leu Leu His Pro Phe Ser Phe Gly Val Ala Tyr Gly Ile Gly
 245 250 255
 Val Glu Tyr Lys Lys Trp Leu Ala Gly Ile Ser Gly Lys Ser Met Cys
 260 265 270
 Leu Gly Gln Asp Asp Glu Gly Phe Glu Ala Lys Glu His Asn Leu Val
 275 280 285
 Leu Thr Leu Gly Val Thr Asn Arg Asn
 290 295

<210> 6187

<211> 85

<212> PRT

<213> B.fragilis

<400> 6187

Thr Glu Lys Ser Phe Cys Arg Glu Leu Trp Val Cys Leu Met Asp Gly
 1 5 10 15
 Asp Ser Ala Arg Phe Leu Ile Glu Cys His Lys Ile Gly Ala Ile Ala
 20 25 30
 Ser Leu Lys Tyr Phe Leu Glu Gly Lys Leu Cys Leu Ser Val Val Pro
 35 40 45
 Leu Ser Ala Ser Asp Thr Ser Gln Pro Glu Arg Lys Thr Gln Glu Ser
 50 55 60
 Gly Glu Lys Asn Arg Thr Ile Asp Leu Met Asp Lys Asn Asn Arg Arg
 65 70 75 80
 Tyr Leu Lys Lys Lys
 85

<210> 6188

<211> 659

<212> PRT

<213> B.fragilis

<400> 6188

Asn Gly Thr Pro Tyr Pro Glu Gln Pro Glu Cys Leu Ala Ala Gly Tyr
 1 5 10 15
 His Gly Ala Tyr His His Pro Thr His Ile His His Ala Ile Gly Gln
 20 25 30
 Pro Gly His Ser Ala Gly Arg Arg Gly Asp Arg Ile His Arg His Pro
 35 40 45
 Gly Arg Val Val Gly Thr Val Gly Asn Val Ser Gly Asn Ile Leu Leu
 50 55 60
 Thr Ala Asn Arg Tyr Leu Thr Met Ala His Gly Asp His Leu Lys Tyr
 65 70 75 80
 Ser Gly Lys Pro Lys Ala Gly Lys Lys Thr Phe Leu Arg Leu Ile Ser
 85 90 95
 Tyr Val Ala Cys Asp Arg Arg Leu Leu Ile Val Ile Gly Val Leu Ile
 100 105 110
 Val Ile Ser Ile Ala Ala Asn Leu Thr Gly Ser Tyr Met Leu Arg Pro
 115 120 125
 Ile Ile Asn Asp Tyr Ile Leu Pro Gly Asp Phe Gln Gly Leu Val Arg

130	135	140
Ile Leu Leu Phe Leu Ala Ala Ile Tyr Leu Thr Gly Val Ala Ala Thr		
145	150	155
Tyr Ile Glu Tyr Ile Leu Leu Asn Lys Ile Gly Gln Arg Thr Val Thr		160
	165	170
Arg Met Arg Glu Leu Phe Gly Lys Met Glu Arg Leu Pro Val Arg		175
	180	185
Tyr Phe Asp Thr His Gln His Gly Asp Val Met Ser Arg Tyr Thr Asn		190
	195	200
Asp Ile Asp Arg Ile Ser Asp Ala Leu Thr Asp Ser Leu Ser Asp Met		205
	210	215
Leu Ser Ser Ala Leu Thr Val Ile Gly Ile Phe Cys Leu Met Ile Phe		220
225	230	235
Ile Ser Pro Thr Leu Thr Ala Val Thr Leu Ile Thr Val Pro Leu Met		240
	245	250
Phe Leu Ser Ala Lys Gly Ile Val Lys Arg Ser Arg Lys Tyr Phe Lys		255
	260	265
Ala Gln Gln Glu Ala Leu Gly Met Met Asn Gly Tyr Ala Glu Glu Met		270
	275	280
Ile Ser Gly Gln Lys Val Val Lys Val Phe Gly His Glu Gln Lys Val		285
290	295	300
Glu Thr Asp Phe Gly Ile Leu Asn Gln Ser Leu Lys Asp Lys Ser Leu		310
305	315	320
Lys Ala Gln Phe Tyr Ser Gly Leu Met Met Pro Val Met Gln Asn Leu		325
	330	335
Asn Thr Leu Asn Tyr Val Ile Ile Thr Ile Val Gly Ala Leu Leu Ala		340
	345	350
Ile Phe Arg Gly Phe Asp Val Gly Gly Leu Ala Ala Phe Leu Gln Tyr		355
	360	365
Ser Arg Gln Phe Gly Arg Pro Ile Asn Glu Leu Ala Ser Leu Tyr Asn		370
	375	380
Ser Ile Gln Ala Ala Ile Ala Gly Ala Glu Arg Ile Phe Glu Ile Ile		385
	390	395
Asp Glu Ala Pro Glu Lys Ala Asp Val Pro Glu Ala Val Thr Leu Lys		400
	405	410
Asn Ile Lys Gly Asp Val Ala Leu Lys Asn Val Tyr Phe Gly Tyr Arg		415
	420	425
Pro Glu Lys Thr Ile Leu Lys Gly Val Ser Leu His Ala Pro Ala Gly		430
	435	440
Lys Lys Ile Ala Leu Val Gly Ala Thr Gly Ala Gly Lys Thr Thr Ile		445
	450	455
Leu Asn Leu Leu Pro Arg Phe Phe Asp Ile Gln Ser Gly Glu Ile Thr		460
465	470	475
Ile Asp Asn His Pro Ile Asp Arg Ile Glu Arg Asn Ser Leu Arg Arg		480
	485	490
Ser Met Ala Ile Val Leu Gln Asp Thr His Leu Phe Thr Gly Thr Val		495
	500	505
Arg Glu Asn Ile Arg Phe Gly Arg Leu Ser Ala Thr Asp Asp Glu Val		510
	515	520
Val Ala Ala Ala Arg Leu Thr Ala Ala His Ser Phe Ile Lys Arg Leu		525
	530	535
Pro Gln Gly Tyr Asp Thr Leu Leu Glu Asn Asp Gly Ala Asn Leu Ser		540
545	550	555
Gln Gly Gln Arg Gln Leu Leu Asn Ile Ala Arg Ala Ala Val Ala Asp		560
	565	570
Pro Ala Ile Leu Leu Asp Glu Ala Thr Ser Asn Ile Asp Thr Arg		575
	580	585
Ser Glu Ile Leu Ile Gln Arg Gly Leu Asp Leu Leu Met Gln Gly Arg		590
	595	600
		605

Thr Ser Leu Ile Ile Ala His Arg Leu Ser Thr Ile Arg Asn Ala Asp
 610 615 620
 Thr Ile Leu Val Leu Glu His Gly Glu Ile Ile Glu Gln Gly Ser His
 625 630 635 640
 Gln Glu Leu Leu Ala Leu Lys Gly Lys Tyr Tyr Ser Leu Asn Glu Glu
 645 650 655
 Gln Phe Lys

<210> 6189
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6189
 Arg Ile Ser Ala Ala Leu Ser Val Ala Ser Thr Ser Pro Val Ala Thr
 1 5 10 15
 Lys Gly Phe Arg Asp Gln Cys Asn His Arg Leu Asn Gly Arg Pro Met
 20 25 30
 Met Glu Gln Ile Val Lys Ile Ser Phe Gly Glu Ala Asn Arg Lys Lys
 35 40 45
 Thr Thr Ala Lys Arg Pro Ile His Asn Val Cys Cys Ser Ala Tyr Ser
 50 55 60

<210> 6190
 <211> 574
 <212> PRT
 <213> B.fragilis

<400> 6190
 Met Lys Lys Tyr Trp Gln Ile Leu Lys Lys Tyr Lys Ile Ser Leu Leu
 1 5 10 15
 Ala Cys Pro Leu Leu Val Leu Val Ser Val Met Cys Glu Thr Val Gln
 20 25 30
 Pro Met Tyr Met Ala Asp Ile Ile Asp Asn Gly Val Met Gln Arg Asp
 35 40 45
 Leu Ser Val Ile Thr Ala Val Gly Gly Lys Met Ile Leu Ile Ser Ile
 50 55 60
 Val Gly Leu Ile Phe Ser Ile Ala Asn Val Tyr Val Ser Ser His Ala
 65 70 75 80
 Ser Ile Gly Phe Gly Thr Asp Leu Arg Thr Gly Leu Phe Gly Lys Ile
 85 90 95
 Gln Gln Leu Ser Phe Phe Asp Ile Asp Arg Phe Ser Thr Ala Ser Leu
 100 105 110
 Ile Thr Arg Leu Thr Ser Asp Ile Ser Arg Ile Gln Gln Val Ile Met
 115 120 125
 Met Ser Met Arg Leu Met Leu Arg Ser Pro Leu Met Leu Val Met Ala
 130 135 140
 Val Phe Phe Val Val Arg Ile Asn Leu Glu Leu Ala Gly Val Leu Leu
 145 150 155 160
 Ala Ala Ile Pro Ile Leu Gly Phe Ser Val Phe Phe Ile Leu Arg Lys
 165 170 175
 Gly Phe Pro Phe Phe Leu Lys Val Gln Lys Val Asp Gln Leu Asn
 180 185 190
 Glu Val Val Arg Glu Asn Leu Ile Asn Ile Arg Val Val Lys Ser Phe
 195 200 205
 Val Arg Glu Asp Phe Glu Ala His Lys Phe Lys Asp Lys Ser Glu Ser
 210 215 220
 Leu Arg Asp Thr Val Ile His Ala Ser Asn Ile Ile Val Ser Ile Phe

225 230 235 240
 Pro Val Met Gln Leu Val Met Asn Leu Ser Ile Ile Ala Ile Leu Trp
 245 250 255
 Met Gly Gly His Lys Val Met Thr Gly Glu Leu Lys Val Gly Glu Leu
 260 265 270
 Ile Ser Phe Val Asn Tyr Leu Gly Gln Val Leu Met Ser Leu Met Met
 275 280 285
 Leu Ser Met Ile Ile Met Ser Tyr Ala Arg Ala Ser Ala Ser Ser Lys
 290 295 300
 Arg Ile Leu Glu Val Leu Asp Thr Gln Pro Ser Leu Thr Asp Thr Pro
 305 310 315 320
 Glu Gly Met Gln Ser Thr Arg Glu Ile Glu Lys Gly Glu Ile Ala Phe
 325 330 335
 Glu Lys Val Ser Phe Arg Tyr Gly Gly Gly Glu Thr Asp Val Leu Arg
 340 345 350
 Asn Ile Ser Phe His Ile Arg Pro Gly Glu Thr Val Ala Ile Ala Gly
 355 360 365
 Ala Thr Gly Ser Ala Lys Ser Ser Leu Val Gln Leu Ile Pro Arg Leu
 370 375 380
 Tyr Asp Val Ser Ala Gly Glu Ile Arg Ile Asp Gly Ile Pro Val Gln
 385 390 395 400
 Asp Tyr Asn Leu Arg Glu Leu His Ala Arg Ile Gly Met Val Leu Gln
 405 410 415
 Lys Asn Glu Leu Phe Thr Gly Thr Ile Ala Glu Asn Leu Arg Trp Gly
 420 425 430
 Lys Pro Asp Ala Thr Gln Glu Glu Leu Glu Val Ala Ala Arg Ala Ala
 435 440 445
 Glu Ala His Glu Phe Ile Cys Ser Leu Pro Ala Gly Tyr Asp Thr Leu
 450 455 460
 Leu Gly Arg Gly Gly Ile Asn Leu Ser Gly Gly Gln Lys Gln Arg Ile
 465 470 475 480
 Cys Ile Ala Arg Ala Leu Leu Arg Lys Pro Lys Ile Leu Ile Leu Asp
 485 490 495
 Asp Ser Thr Ser Ala Val Asp Ser Glu Thr Glu Leu Arg Ile Arg Asn
 500 505 510
 Asn Leu Asn Ala Trp Leu Arg Asp Thr Thr Val Leu Ile Ile Thr Gln
 515 520 525
 Arg Ile Tyr Thr Met Gln Ser Ala Asn Arg Val Ile Leu Leu Asp Asp
 530 535 540
 Gly Glu Ile Glu Ser Ile Gly Thr Pro Glu Glu Leu Leu Glu Arg Ser
 545 550 555 560
 Glu Met Tyr Arg Glu Ile Tyr Tyr Ser Gln Gln Ile Val Ile
 565 570

<210> 6191

<211> 421

<212> PRT

<213> B.fragilis

<400> 6191

Ile Ile Ala Asn Phe Val Ser Asn Phe Asn Ser Met Ile Arg Ile Leu
 1 5 10 15
 His Thr Ala Asp Trp His Leu Gly Gln Thr Phe Phe Gly Tyr Asp Arg
 20 25 30
 Thr Gln Glu His Glu His Phe Leu Asp Trp Leu Ala Gly Val Leu Thr
 35 40 45
 Lys Asn Lys Ile Asp Val Leu Ile Val Ala Gly Asp Val Phe Asp Val
 50 55 60
 Ser Asn Pro Ser Ala Ala Ser Gln Arg Met Phe Tyr Arg Phe Ile His

65					70					75				80
Arg	Val	Thr	Thr	Glu	Asn	Pro	Arg	Leu	Gln	Leu	Val	Val	Val	Ala
				85					90					95
Asn	His	Asp	Ser	Ala	Ala	Arg	Leu	Glu	Ser	Pro	Leu	Pro	Leu	Gln
			100					105					110	
Glu	Met	Arg	Thr	Glu	Ile	Lys	Gly	Ile	Val	Arg	Lys	Gln	Asn	Gly
		115					120					125		
Ile	Asp	Tyr	Glu	His	Leu	Leu	Val	Glu	Leu	Lys	Asn	Ala	Ala	Gly
	130					135					140			
Val	Glu	Ala	Leu	Cys	Leu	Ala	Val	Pro	Phe	Leu	Arg	Gln	Gly	Asp
145					150				155					160
Pro	Val	Val	Glu	Thr	Glu	Gly	Asn	Pro	Tyr	Ala	Glu	Gly	Val	Lys
				165					170					175
Leu	Tyr	Ala	Arg	Leu	Leu	Lys	Tyr	Ala	Leu	Lys	Lys	Arg	Thr	Asp
			180					185					190	
Gln	Ala	Leu	Val	Ala	Val	Gly	His	Leu	Leu	Ala	Thr	Gly	Ser	Glu
	195					200						205		
Ala	Glu	Lys	Asp	His	Ser	Glu	Arg	Ile	Ile	Ile	Gly	Gly	Leu	Glu
210					215						220			
Val	Ser	Pro	Glu	Ser	Phe	Pro	Glu	Gln	Ile	Val	Tyr	Thr	Ala	Leu
225					230					235				240
His	Ile	His	Lys	Ala	Gln	Arg	Val	Ser	Gly	Arg	Glu	Asn	Ile	Arg
			245						250					255
Ala	Gly	Ser	Pro	Leu	Pro	Met	Ser	Phe	Ala	Glu	Lys	His	Tyr	His
			260					265					270	
Gly	Val	Val	Lys	Val	Thr	Leu	Asp	Glu	Gly	Trp	Ala	Val	Glu	Ile
		275					280					285		
Lys	Leu	Glu	Tyr	Thr	Pro	Leu	Val	Arg	Leu	Leu	Ser	Ile	Pro	Ala
	290					295					300			
Glu	Ala	Ala	Ala	Pro	Asp	Glu	Val	Leu	Asp	Glu	Leu	Arg	Gly	Leu
305					310					315				320
Leu	Pro	Glu	Asp	Glu	Pro	Met	Pro	Tyr	Leu	Glu	Val	Lys	Val	Lys
			325						330					335
Ser	Glu	Pro	Glu	Pro	Met	Leu	Arg	Gln	Gln	Val	Glu	Glu	Ile	Leu
			340					345					350	
Gly	Lys	Pro	Val	Arg	Leu	Ala	Arg	Ile	Val	Ser	Phe	Tyr	Arg	Gln
	355					360						365		
Ala	Glu	Gly	Ser	Val	Glu	Glu	Thr	Leu	Thr	Ala	Gly	Leu	Gln	Glu
	370					375				380				
Met	Asn	Pro	Leu	Gln	Ile	Val	Lys	Ala	Thr	Phe	Glu	Asn	Ser	Tyr
385					390					395				400
Ala	Glu	Met	Pro	Glu	Glu	Leu	Val	Asn	Leu	Phe	Gln	Glu	Ala	Cys
			405					410						415
Thr	Ile	Asn	Leu	Glu										
			420											

<210> 6192

<211> 380

<212> PRT

<213> B.fragilis

<400> 6192

Thr	Lys	Met	Asn	Lys	Arg	Lys	Leu	Leu	Gly	Leu	Leu	Cys	Leu	Met	Thr
1			5						10				15		
Leu	Leu	Ala	Thr	Ser	Cys	Asp	Asn	Lys	Gly	Asp	Tyr	Trp	Gly	Ala	Met
		20						25					30		
Glu	Ser	Ser	Lys	Ala	Thr	Leu	Thr	Leu	Glu	Arg	Ile	Cys	Asp	Met	Ala
	35					40						45			
Thr	Leu	Ser	Gln	Asp	Ser	Val	Glu	Leu	Leu	Ser	Asn	Ile	Leu	Gly	Met

50		55		60
Asn Thr Glu Glu Leu Tyr Arg Thr Asp Val Val Met Ile Gly Lys Val				
65	70	75	80	
Thr Ser Glu Glu Thr Gly Phe Tyr Gln Tyr Pro Arg Phe Leu Ile Ala				
	85	90	95	
Lys Asp Arg Glu Met Lys Glu Val Leu Thr Glu Ala Tyr Val His Arg				
	100	105	110	
Asp Thr Glu Gly Thr Phe Tyr Ala Phe Leu Glu Ser Asn Met Leu Pro				
	115	120	125	
Val Gly Glu Thr Tyr Tyr Cys Ala Met Val Asp Tyr Asn Tyr Gly Tyr				
	130	135	140	
Asn Gly Arg Pro Gly Leu Leu Asp His Val Leu Gly Gly Asn Thr Arg				
145	150	155	160	
Gly Glu Arg Tyr Ser Glu Val Lys Pro Phe Arg Leu Ser Gly Leu Pro				
	165	170	175	
Arg Leu Val Val His Asp Ala His Phe Thr Gly Tyr Ser Phe Tyr Leu				
	180	185	190	
Ser Ala Glu Val Arg Phe Lys Ser Asn Gly Gly Ile Ile Glu Gln Gly				
	195	200	205	
Ala Cys Tyr Ser Ser Thr Lys Arg Ile Pro Thr Val Asp Asp Gln Lys				
	210	215	220	
Thr Leu Ala Arg Glu Thr Arg Asn Tyr Asp Tyr Ser Phe Leu Glu Val				
225	230	235	240	
Glu Val Thr Asp Leu Leu Pro Asn Thr His Tyr Tyr Ile Arg Pro Tyr				
	245	250	255	
Val Thr Thr Glu Glu Gly Thr Gly Tyr Gly Pro Val Val Glu Phe Thr				
	260	265	270	
Thr Glu Pro Gly Thr Glu Pro Ile Ile Asp Tyr Phe Thr Met Tyr Ile				
	275	280	285	
Asp Thr Asp Arg Ser Val Asn Leu Tyr Ala Thr Phe Tyr Ile Asp Asn				
	290	295	300	
Tyr Gln Ile Thr His Tyr Gly Tyr Ser Tyr Gly Ile Tyr Ser Pro Glu				
305	310	315	320	
Thr Gly Thr Val Thr Asp Glu Gln Lys Ile Glu Val Pro Leu Glu Asp				
	325	330	335	
Asn His Gly Gln Gln Leu Ser Lys Val Ile Thr Gly Leu Arg Pro Gly				
	340	345	350	
Ile Leu Tyr Ala Phe Arg Val Tyr Ala Glu Asn Gly Val Gly Val Thr				
	355	360	365	
Tyr Ser Gly Tyr Gln Thr Val Lys Ile Pro Val Glu				
370	375	380		

<210> 6193

<211> 996

<212> PRT

<213> B.fragilis

<400> 6193

Ser Val Val Lys Ala Asn Arg Ile Thr Met Lys Ile Leu Thr Ile Arg				
1	5	10	15	
Leu Lys Asn Leu Ala Ser Ile Glu Gly Thr Phe Glu Ile Asp Phe Gln				
	20	25	30	
Ala Glu Pro Leu Arg Ser Ala Gly Ile Phe Ala Ile Ser Gly Pro Thr				
	35	40	45	
Gly Ala Gly Lys Ser Thr Ile Leu Asp Ala Leu Cys Leu Ala Leu Tyr				
	50	55	60	
Asp Lys Thr Pro Arg Phe Ser Ala Ser Val Glu Ser Leu Tyr Met Ser				
65	70	75	80	
Asp Ile Gly Glu Ser Arg Val Asn Gln Ala Asp Val Lys Asn Ile Leu				

Ala Ser Ala Glu Tyr Gln Gln Leu Asn Asn Arg Asn Ile Ala Leu Lys
 565 570 575
 Gln Asp Leu Leu His Leu Ser Glu Leu Ser Gly Glu Ile Thr Val Gln
 580 585 590
 Leu Gln Ala Phe Leu Gln Glu Ala Glu Gln Lys Arg Pro Ser Ser Glu
 595 600 605
 Glu Glu Gln Asn Pro Asp Tyr Phe Glu Lys Gln Leu His Thr Val Gln
 610 615 620
 Gly Lys Leu Asn Leu Leu Ala Glu Lys Met His Gln Tyr His Gln Leu
 625 630 635 640
 Tyr Lys Glu Trp Gln Gln His Glu Gly Gln Ile Arg Thr Val Arg Ser
 645 650 655
 Ala Cys Glu Ala Leu Arg Glu Gly Val Ala Arg Cys His Leu Leu Met
 660 665 670
 Gln Gln Val Leu Ala Ala Lys Glu Gln Phe Glu Leu Leu Lys Thr Ala
 675 680 685
 Glu Thr Thr Ala Arg Glu Gln Phe Arg Val Val Ser Glu Gln Leu Ile
 690 695 700
 Thr Leu Arg Gln Glu Arg Ala Pro Leu Leu Lys Gly Lys Ser Val Glu
 705 710 715 720
 Asp Ala Glu Ala Ala Ile Arg Lys Lys Glu Lys Gln Leu Asn Asp Ser
 725 730 735
 Val Glu Gln Val Arg Lys Glu Gly Glu Glu Val Gln Ser Arg Ile Ser
 740 745 750
 Gly Met Gln Gly Glu Ile Arg Gln Leu Asn Ser Ser Ile Asp Glu Leu
 755 760 765
 Met Leu Arg Lys Glu Gln Ile Ala Asp Pro Glu His Leu Pro Glu Thr
 770 775 780
 Ile Ala Arg Gln Gln Ala Thr Asn Gln Glu Thr Glu Arg Arg Leu Ser
 785 790 795 800
 Thr Val Glu Ala Arg Leu Leu Gln Gln Glu Gln Asn Arg Lys Lys Leu
 805 810 815
 Lys Gln Leu Glu Gln Glu Leu Thr Glu Lys Gln Glu Thr Ala Asn Arg
 820 825 830
 Trp Gly Lys Leu Asn Lys Leu Ile Gly Ser Ala Asp Gly Thr Lys Phe
 835 840 845
 Lys Val Ile Ala Gln Ser Tyr Thr Leu Asn Leu Leu Met His Ala
 850 855 860
 Asn Lys His Leu Ser Tyr Leu Ser Lys Arg Tyr Arg Leu Gln Gln Val
 865 870 875 880
 Pro Gly Thr Leu Ala Leu Gln Val Ile Asp Cys Asp Met Cys Asp Glu
 885 890 895
 Val Arg Thr Val Tyr Ser Leu Ser Gly Gly Glu Ser Phe Leu Ile Ser
 900 905 910
 Leu Ala Leu Ala Leu Gly Leu Ser Ser Leu Ser Ser Asn Asn Leu Lys
 915 920 925
 Val Glu Ser Leu Phe Ile Asp Glu Gly Phe Gly Ser Leu Asp Ala Asp
 930 935 940
 Ser Leu Arg Thr Val Met Glu Ala Leu Glu Gln Leu Gln Met Gln Gly
 945 950 955 960
 Arg Lys Ile Gly Val Ile Ser His Val Gln Glu Met Ser Glu Arg Ile
 965 970 975
 Ala Val Gln Val Gln Leu His Arg Ala Ala Asn Gly Lys Ser Ala Ile
 980 985 990
 Thr Leu Thr Asn
 995

<210> 6194

<211> 98

<212> PRT

<213> B.fragilis

<400> 6194

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Arg Val Asn Asp Phe Asn Ile Gln Gln Asn Met Ile Thr Ser Ala Glu
1          5          10          15
Glu Ala Leu Asp Leu Ser Ile Leu Ala Tyr Asn Glu Thr Arg Gln Arg
20          25          30
Phe Ile Ile Gly Lys Ala Asp Ile Asn Ser Leu Thr Leu Ser Leu Asn
35          40          45
Arg Gln Gln Glu Ala Gln Gln Asn Tyr Ile Ser Ala Leu Gln Asn Tyr
50          55          60
Trp Leu Asn Tyr Tyr Lys Ile Arg Lys Leu Thr Leu His Asp Phe Ala
65          70          75          80
Thr Gly Ile Ser Leu Thr Asp Lys Phe Asp Tyr Ala Gly Gly Gln Leu
85          90          95
Val Arg

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<210> 6195

<211> 363

<212> PRT

<213> B.fragilis

<400> 6195

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Arg Lys Ser Leu Ile Thr Ile Met Lys Thr Gln Tyr Pro Ser Tyr Thr
1          5          10          15
Leu Cys Leu Ala Leu Thr Met Leu Thr Ala Cys Ser Val Arg Lys Lys
20          25          30
Glu Ser Ala Ser Glu Lys Gly Val Glu Pro Cys Leu Pro Asp Thr Lys
35          40          45
Asn Glu Val Ser Val Met Thr Leu Lys Lys Gln Ile Phe Asn His Glu
50          55          60
Leu Val Ser Asn Gly Lys Ile Ser Ala Arg Gly Met Ala Asp Leu Arg
65          70          75          80
Phe Glu Ser Gly Glu Val Ile Ala His Ile Trp Val Lys Asn Gly Asp
85          90          95
Arg Val Arg Lys Gly Gln Lys Leu Ala Glu Leu Asp Lys Phe Lys Leu
100         105         110
Asp Asn Gln Leu Ser Gln Ser Glu Asp Ala Leu Lys Lys Ser Glu Leu
115         120         125
Glu Leu Arg Asp Val Leu Ile Ser Gln Gly Tyr Pro Ala Asp Asp Ile
130         135         140
Ser Gln Val Pro Glu Glu Thr Met Lys Leu Ala Lys Val Lys Ser Gly
145         150         155         160
Tyr Asp Gln Ser Lys Ser Gln Tyr Glu Met Ser Lys Tyr Asn Ala Glu
165         170         175
His Ala Thr Leu Thr Ala Pro Phe Asp Gly Val Val Ala Asn Leu Phe
180         185         190
Ser Asn Pro Tyr Asn Leu Ala Ser Thr Ser Asp Val Phe Cys Thr Val
195         200         205
Ile Asp Met Gln Gly Met Glu Val Asp Phe Thr Val Leu Glu Ser Glu
210         215         220
Leu Pro Leu Ile Lys Asn Gly Asp Lys Val Val Ile Lys Pro Tyr Ser
225         230         235         240
Asp Ala Ala Thr Val His Glu Gly Ser Ile Ser Glu Ile Asn Pro Leu
245         250         255
Val Asp Asp Lys Gly Met Val Lys Val Lys Ala Arg Val Asn Gly Ala
260         265         270

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Gly Lys Leu Phe Ser Gly Met Asn Val Arg Val Ser Val His Arg Ser
 275 280 285
 Leu Gly Glu Gln Leu Val Ile Pro Lys Ser Ala Val Val Leu Arg Ser
 290 295 300
 Gly Lys Gln Val Val Phe Thr Leu Lys Asp Gly Lys Met Ala Gln Trp
 305 310 315 320
 Asn Tyr Ile His Thr Ala Leu Glu Asn Ala Asp Ser Tyr Ser Val Ala
 325 330 335
 Asp Gly Leu Thr Glu Gly Asp Thr Val Ile Val Ser Gly Asn Ile Asn
 340 345 350
 Leu Ala His Glu Ala Pro Val Thr Ile Ile Glu
 355 360

<210> 6196

<211> 195

<212> PRT

<213> B.fragilis

<400> 6196

Asp Met Glu Leu Asp Asp Leu Lys Lys Ser Trp Asn Ala Leu Asp Glu
 1 5 10 15
 His Leu Lys Asn Lys Glu Phe Ile Glu Lys Glu Ile Ala Gln Leu
 20 25 30
 Leu Gly Arg Ala Arg Asn Lys Met Asn Ser Ile Asp Arg Phe Asn Arg
 35 40 45
 Lys Leu Arg Phe Ala Ser Ile Gly Ile Leu Thr Leu Ala Val Leu Phe
 50 55 60
 Trp Ile Cys Ala Asp Thr Leu Thr Asp Leu Phe Tyr Trp Ile Ala Leu
 65 70 75 80
 Ser Leu Cys Ile Pro Ala Leu Cys Trp Asp Leu Tyr Ser Ala His Tyr
 85 90 95
 Leu Ser Arg Thr Arg Ile Asp Glu Met Pro Leu Val Thr Val Ile Ser
 100 105 110
 Arg Ile Asn Arg Tyr His Arg Trp Met Val Arg Glu Trp Ile Ile Gly
 115 120 125
 Ile Leu Tyr Leu Leu Ala Met Ala Thr Phe Phe Phe Phe His Arg Gln
 130 135 140
 Val Trp Gln Tyr Gly Ala Ala Gly Ile Ile Val Ser Leu Ile Val Trp
 145 150 155 160
 Ala Ile Gly Leu Gly Ile Cys Leu Trp Val Tyr Arg Arg Asn Ile Arg
 165 170 175
 His Ile Lys Glu Ile Lys Lys Asn Leu Asn Glu Leu Lys Glu Leu Asn
 180 185 190
 His Thr Ala
 195

<210> 6197

<211> 345

<212> PRT

<213> B.fragilis

<400> 6197

Asn Ile Arg Trp Glu Ala Ala Asp Gly Leu Glu Thr Ser Lys Thr Ser
 1 5 10 15
 Pro Ala Thr Ile Ser Thr Ser Ile Leu Phe Leu Val Arg Thr Pro Ala
 20 25 30
 Ser Gln Ser Arg Lys Cys Ser Cys Ser Cys Val Arg Ser Tyr Pro Lys
 35 40 45
 Lys Val Cys Pro Lys Cys Gln Ser Ala Val Cys Ser Ile Arg Ile Met

50		55		60											
Leu	Leu	Lys	Phe	Glu	Thr	Lys	Leu	Ala	Ile	Ile	Gln	Asp	Ser	Asn	Ile
65				70						75					80
Ile	Leu	Phe	Ile	Phe	Ala	Gln	Ala	Lys	Thr	Lys	Ile	Ile	Met	Lys	Ile
			85						90					95	
Leu	Tyr	Tyr	Ile	Tyr	Gln	Ile	Cys	Ile	Ala	Leu	Pro	Ile	Leu	Leu	Val
			100					105					110		
Leu	Thr	Ile	Leu	Thr	Ala	Val	Val	Thr	Ile	Val	Gly	Ser	Leu	Leu	Gly
		115					120					125			
Gly	Ala	His	Ile	Trp	Gly	Tyr	Tyr	Pro	Gly	Lys	Ile	Trp	Ser	Gln	Leu
	130					135					140				
Ile	Cys	Leu	Phe	Leu	Leu	Ile	Pro	Val	Lys	Val	His	Gly	Arg	Glu	Lys
145				150						155					160
Leu	His	Glu	Arg	Thr	Ser	Tyr	Ile	Phe	Val	Pro	Asn	His	Gln	Gly	Ser
			165						170					175	
Phe	Asp	Ile	Phe	Leu	Ile	Tyr	Gly	Phe	Leu	Gly	Arg	Asn	Phe	Lys	Trp
		180						185					190		
Met	Met	Lys	Lys	Ser	Leu	Arg	Lys	Ile	Pro	Phe	Val	Gly	Lys	Ala	Cys
		195					200					205			
Glu	Ser	Ala	Gly	His	Ile	Phe	Val	Asp	Arg	Ser	Gly	Pro	Lys	Lys	Val
	210				215						220				
Leu	Glu	Thr	Ile	Arg	Gln	Ala	Lys	Asp	Ser	Leu	Lys	Asp	Gly	Val	Ser
225				230							235				240
Leu	Val	Val	Phe	Pro	Glu	Gly	Ala	Arg	Ser	Phe	Thr	Gly	His	Met	Gly
			245					250						255	
Tyr	Phe	Lys	Lys	Gly	Ala	Phe	Gln	Leu	Ala	Asp	Asp	Leu	Gln	Leu	Ala
		260					265						270		
Val	Val	Pro	Val	Thr	Ile	Asp	Gly	Ser	Phe	Glu	Ile	Leu	Pro	Arg	Thr
		275					280					285			
Gly	Lys	Trp	Ile	His	Arg	His	Arg	Met	Ile	Leu	Thr	Ile	His	Asp	Pro
	290				295						300				
Ile	Pro	Pro	Lys	Gly	Gln	Gly	Ala	Asp	Asn	Met	Lys	Ala	Thr	Met	Ala
305				310						315					320
Glu	Ala	Tyr	Thr	Ala	Val	Glu	Ser	Ala	Leu	Pro	Asp	Lys	Phe	Lys	Gly
			325						330					335	
Met	Val	Lys	Asn	Glu	Asp	Gln	Asp	Arg							
			340					345							

<210> 6198

<211> 390

<212> PRT

<213> B.fragilis

<400> 6198

Glu	Asn	Met	Leu	Gln	Arg	Val	Leu	Gly	Phe	Leu	Ile	Val	Ile	Leu	Val
1			5					10					15		
Leu	Pro	Asp	Ile	Tyr	Ile	Tyr	Arg	Thr	Phe	Ile	Lys	Gln	Leu	Thr	Leu
		20					25					30			
Ser	Leu	Phe	Trp	Arg	Ile	Leu	Tyr	Phe	Phe	Pro	Thr	Leu	Phe	Leu	Met
		35				40					45				
Ala	Gly	Val	Val	Ser	Leu	Ala	Phe	Phe	Ala	Asn	Tyr	Glu	Tyr	Ala	Glu
	50				55					60					
Gln	His	Thr	Leu	Trp	Ile	Gly	Arg	Phe	Ala	Val	Val	Phe	Phe	Leu	Phe
65			70						75					80	
Ala	Ser	Pro	Lys	Leu	Ile	Phe	Thr	Ile	Cys	Ser	Ile	Ile	Gly	Arg	Pro
			85					90					95		
Phe	Asn	Arg	Trp	Leu	His	Trp	Ser	Arg	Lys	Pro	Phe	Val	Ala	Thr	Gly
		100					105					110			
Leu	Val	Leu	Ala	Thr	Leu	Asn	Ala	Ala	Leu	Ile	Leu	Tyr	Gly	Ser	Met

115	120	125
Val Gly Lys Asp Arg Phe	Glu Val Lys Glu Val Thr Phe Arg Ser Ser	
130	135	140
Arg Leu Pro Glu Ala Phe	Asn Gly Tyr Arg Ile Val Gln Leu Ser Asp	
145	150	155
Ile His Ile Gly Ser Trp	Gln Gly Asn Ala Lys Ser Leu Gln Arg Met	
165	170	175
Val Asp Leu Val Asn Ala Gln Lys	Pro Asp Leu Ile Val Phe Thr Gly	
180	185	190
Asp Leu Val Asn Asn Arg Ala Ala	Glu Leu Asp Gly Phe Glu Glu Ile	
195	200	205
Leu Ser Gln Leu His Ala Thr	Asp Gly Val Tyr Ser Ile Leu Gly Asn	
210	215	220
His Asp Tyr Gly Pro Tyr Tyr	Arg Trp Lys Ser Lys Arg Asp Gln Val	
225	230	235
Asn Asn Leu Asn Asp Leu Lys Lys	Arg Gln Ala Asp Met Gly Trp Ile	
245	250	255
Leu Leu Asn Asn Glu His Thr Leu	Leu His Arg Gly Asn Asp Ser Ile	
260	265	270
Ala Leu Ile Gly Val Glu Asn Glu	Gly Glu Pro Pro Phe Ser Gln His	
275	280	285
Gly Asp Leu Pro Lys Ala Gln Ala	Gly Thr Asn Gly Leu Phe Lys Leu	
290	295	300
Leu Leu Ser His Asn Pro Thr His	Trp Arg Arg Glu Val Leu Pro Gln	
305	310	315
Ser Asp Ile Asp Leu Met Leu Ala	Gly His Thr His Ala Met Gln Leu	
325	330	335
Ala Ile Gly His His Ser Pro Ala	Ser Trp Ile Tyr Pro Glu Trp Gly	
340	345	350
Gly Met Tyr Met Glu Asp Asn Arg	Gly Leu Tyr Val Asn Val Gly Met	
355	360	365
Gly Phe Val Gly Leu Pro Phe Arg	Phe Gly Ala Trp Pro Glu Ile Thr	
370	375	380
Val Ile Thr Leu Asp Lys		
385	390	

<210> 6199

<211> 180

<212> PRT

<213> B.fragilis

<400> 6199

Pro Asn Lys Ser Asn Pro Lys Arg Arg	Ser Met Asn Leu Asn Pro Ala
1	5 10 15
His Ile Asn Glu Pro Val Gln Lys Glu	Phe Leu Ser Val Ile Lys Glu
20	25 30
Tyr Glu Arg Val Ile Tyr Lys Val Cys	Tyr Leu Tyr Thr Thr Arg Asn
35	40 45
Ala Thr Leu Gly Asp Leu Tyr Gln Glu	Val Ile Leu Asn Leu Trp Lys
50	55 60
Ala Tyr Pro Lys Phe Arg Lys Glu Cys	Lys Ile Ser Thr Trp Ile Tyr
65	70 75 80
Arg Ile Ala Leu Asn Thr Cys Ile Ser	Phe Ile Arg Lys Glu Lys Asn
85	90 95
Val Pro Glu Ile Val Ala Leu Thr Arg	Glu Ala Asp Trp Met Thr Glu
100	105 110
Glu Lys Asp Glu Leu Thr Glu Met Leu	Arg Gln Leu Tyr Arg Met Ile
115	120 125
Asn Gln Leu Gly Gln Leu Asp Lys Ser	Ile Val Leu Leu Tyr Leu Glu

130		135		140
Glu Lys Ser Tyr Glu	Glu Ile Ala Glu Ile Thr	Gly Leu Thr Val Thr		
145	150	155	160	
Asn Val Ala Thr Lys	Leu Ser Arg Ile Lys	Asp Lys Leu Lys Lys	Met	
	165	170	175	
Lys Lys Glu Glu				
	180			

<210> 6200

<211> 1083

<212> PRT

<213> B.fragilis

<400> 6200

Leu Cys Gly Arg Thr	Ile Gly Ala Ile Val	Leu Thr Asn Ile Glu Thr
1	5	10
Met Asp Asn Pro Ser	Lys Ile Lys Thr Gln Thr	Lys Ala Ser Ser Phe
	20	25
Thr Leu Ile Val Ala	Phe Ile Cys Val Ala	Leu Ile Gly Leu Ala Leu
	35	40
Ile Pro Leu Leu Pro	Val Lys Leu Asn Pro	Ser Arg Thr Leu Pro Gly
	50	55
Phe Thr Val Gln Phe	Ser Met Pro Gly Thr	Ser Arg Val Val Glu
65	70	75
Ile Glu Ala Thr Ser	Lys Leu Glu Ala Met	Leu Ala Arg Ile Lys Gly
	85	90
Ile Lys Asn Ile Tyr	Ser Thr Ser Asp Asn	Gly Ser Gly Ser Ile Thr
	100	105
Ile Glu Leu Asp Lys	Tyr Ala Asp Ile Asp	Ala Val Arg Phe Glu Ala
	115	120
Ser Thr Ile Ile Arg	Gln Thr Trp Pro Gln	Leu Pro Asp Gly Val Ser
	130	135
Tyr Pro Tyr Ile Arg	Met Lys Arg Pro Asp	Glu Asn Ala Ser Arg Pro
145	150	155
Phe Met Ser Phe Thr	Leu Asn Ala Pro Ser	Thr Pro Ile Leu Ile Gln
	165	170
Gln Tyr Ala Asp Glu	His Ile Lys Thr Arg	Leu Ala Gln Ile Gln Gly
	180	185
Ile Tyr Lys Ile Asp	Leu Ser Gly Ala Thr	Pro Met Glu Trp Val Leu
	195	200
Glu Tyr Asp Ser Glu	Gln Leu Arg Arg Leu	Gly Ile Thr Leu Ser Asp
	210	215
Ile Gln Gln Ala Val	Ser Arg Tyr Tyr Leu	Lys Glu Phe Leu Gly Thr
225	230	235
Tyr Asn Val Glu Ser	Ser Thr Gly Gly Lys	Glu Trp Ile Arg Leu Ala
	245	250
Leu Met Pro Glu Thr	Lys Asp Glu Gly Phe	Asp Ala Ser Arg Ile Arg
	260	265
Val Lys Ser Ala Glu	Gly Lys Leu Ile Ser	Leu Asp Glu Leu Val Thr
	275	280
Val Ser His Met Glu	Glu Ala Pro Gln Ser	Tyr Tyr Arg Ile Asn Gly
	290	295
Leu Asn Ser Ile Tyr	Leu Ser Ile Thr Ala	Glu Glu Thr Ala Asn Gln
305	310	315
Leu Gln Leu Ser Lys	Gln Val Lys Glu Glu	Met Glu Ala Ile Gln Lys
	325	330
Val Leu Pro Ala Gly	Tyr Glu Ile His Thr	Ser Tyr Asp Ala Thr Glu
	340	345
Phe Ile His Glu Glu	Leu Asn Lys Ile Tyr	Leu Arg Thr Gly Leu Thr

355	360	365
Val Leu Ile Leu Leu Phe Phe	Val Leu Ile Ile Thr	Leu Asn Pro Arg
370	375	380
Tyr Leu Phe Leu Ile Val Val	Ser Leu Ser Ile Asn	Ile Ala Val Ala
385	390	395
Val Ile Phe Tyr Tyr	Leu Phe Gly Leu Glu Met	Gln Leu Tyr Ser Leu
405	410	415
Ala Gly Ile Thr Val Ser Leu Asn	Leu Val Ile Asp Asn	Thr Ile Val
420	425	430
Met Thr Asp His Ile Leu His Arg	Arg Asn Leu Lys Ala Phe	Met Ser
435	440	445
Ile Leu Ala Ala Thr Leu Thr Thr	Met Gly Ala Leu Val	Ile Ile Phe
450	455	460
Phe Leu Asp Glu Lys Ile Arg Leu Asn	Leu Gln Asp Phe Ala Ala	Val
465	470	475
Val Ile Ile Asn Leu Ala Val Ser Leu Phe	Val Ala Leu Phe Phe	Val
485	490	495
Pro Ala Leu Ile Glu Lys Ile Gly Leu Lys	Lys Arg Lys Arg Arg	Arg
500	505	510
Thr Gln Ser Arg Phe Phe Leu Leu Arg	Ala Ser Leu Pro Arg Arg	Ile
515	520	525
Thr Val Tyr Phe Thr Arg Phe Tyr Gly	Trp Met Ile Arg Lys Leu Cys	
530	535	540
Arg Trp Arg Val Ala Val Cys Ile Leu Leu	Ile Leu Leu Phe Gly Leu	
545	550	555
Pro Val Phe Met Leu Pro Asp Lys Val Glu	Gly Glu Gly Arg Ala Thr	
565	570	575
Glu Trp Tyr Asn Lys Thr Leu Gly Ser Ser	Thr Tyr Lys Glu Lys Ile	
580	585	590
Lys Pro Ile Val Asp Lys Ala Leu Gly Gly	Ser Leu Arg Leu Phe Ile	
595	600	605
Gln Lys Val Tyr Asn Gly Ser Tyr Phe Thr	Arg Asn Glu Glu Val Val	
610	615	620
Leu Tyr Val Tyr Ala Asn Leu Pro Asn Gly	Ser Thr Leu Glu Gln Met	
625	630	635
Asn Glu Leu Ile Lys Lys Met Glu Ile Tyr	Leu Ser Gln Phe Lys Glu	
645	650	655
Ile Lys Gln Phe Gln Thr Ser Val Tyr Asn	Ala Arg Arg Gly Asn Ile	
660	665	670
Asn Ile Tyr Phe Thr Lys Glu His Gln Asn	Ser Gly Phe Pro Tyr Thr	
675	680	685
Leu Lys Ala Asn Ile Ile Ser Lys Ala Leu	Gln Leu Gly Gly Gly Ser	
690	695	700
Trp Gly Val Tyr Gly Leu Gln Asp Gln Gly	Phe Ser Asn Asp Val Arg	
705	710	715
Glu Gly Ala Gly Ser Phe Gln Val Lys Met	Tyr Gly Tyr Asn Tyr Asp	
725	730	735
Glu Leu Tyr Glu Trp Ala Glu Lys Leu Lys	Ala Lys Leu Leu Thr His	
740	745	750
Arg Arg Ile Lys Glu Val Ile Ile Asn Ser	Tyr Phe Ser Tyr Trp Lys	
755	760	765
Asp Asp Tyr Gln Glu Phe Tyr Phe Asn Leu	Asn Arg Glu Arg Met Ala	
770	775	780
Gln Glu Asn Ile Asn Ala Asn Ile Leu Phe	Ser Thr Ile Arg Pro Ile	
785	790	795
Tyr Gly Lys Asn Met Glu Ile Gly Ser Val	Val Ala Glu Asn Gly Ser	
805	810	815
Glu Lys Ile Lys Leu Ser Ser Lys Gln Ser	Gln Glu Tyr Asp Ile Trp	
820	825	830

Ala Met Gln Tyr Phe Pro Tyr Gly Thr Asp Asp Lys Gln Tyr Lys Leu
 835 840 845
 Ser Glu Leu Ala Thr Met Glu Lys Gly Gln Met Pro Gln Gln Val Ala
 850 855 860
 Lys Glu Asn Gln Gln Tyr Arg Leu Cys Leu Gln Tyr Glu Tyr Ile Gly
 865 870 875 880
 Ser Gly Glu Gln Gly Asn Lys Ile Leu Lys Arg Asp Leu Glu Glu Phe
 885 890 895
 Asn Lys Glu Leu Pro Met Gly Tyr Thr Ala Gln Ser Glu Arg Glu Ser
 900 905 910
 Trp Gly Trp Gly Lys Lys Asp Asn Lys Gln Tyr Leu Leu Leu Leu Val
 915 920 925
 Val Ile Ala Ile Ile Phe Phe Thr Thr Ser Ile Leu Phe Asn Ser Leu
 930 935 940
 Lys Gln Pro Leu Ala Ile Ile Phe Ile Ile Pro Val Ser Tyr Ile Gly
 945 950 955 960
 Val Phe Leu Thr Phe Tyr Trp Phe Lys Leu Asn Phe Asp Gln Gly Gly
 965 970 975
 Phe Ala Ser Phe Val Leu Leu Cys Gly Ile Thr Val Asn Ala Ser Ile
 980 985 990
 Tyr Ile Leu Asn Glu Tyr Asn Ala Ile Arg Arg Arg His Pro Arg Met
 995 1000 1005
 Ser Ala Leu Arg Ala Tyr Thr Lys Ala Trp Asn Ala Lys Ile Leu Pro
 1010 1015 1020
 Ile Phe Leu Thr Val Val Ser Thr Ile Leu Gly Phe Ile Pro Phe Met
 1025 1030 1035 1040
 Val Gly Thr Asp Lys Glu Ala Phe Trp Phe Pro Leu Ala Ala Gly Thr
 1045 1050 1055
 Ile Gly Gly Leu Val Met Ser Ile Ile Gly Ile Phe Phe Phe Leu Pro
 1060 1065 1070
 Val Phe Val Leu Lys Lys Arg Val Gly Lys Arg
 1075 1080

<210> 6201

<211> 550

<212> PRT

<213> B.fragilis

<400> 6201

Trp Ser Ile Ile Phe Thr Gly Asn Met Leu Val Thr Val Leu Tyr Met
 1 5 10 15
 Leu Val Tyr Arg Thr Gly Ile Lys Gly Gly Arg Lys Trp Leu Arg Leu
 20 25 30
 Lys Ile Asn Asn Pro Leu Lys Glu His Thr Leu Asp Arg Phe Tyr Asp
 35 40 45
 Lys Gly Ile Asp Trp Val Phe Ser His Lys Thr Leu Ser Val Leu Phe
 50 55 60
 Cys Ala Ile Ser Phe Pro Leu Cys Ile Phe Phe Phe Tyr Phe Ile Asp
 65 70 75 80
 Lys Glu Arg Met Pro Asp Ile Asp Glu Asn Glu Leu Ile Thr Arg Ile
 85 90 95
 Glu Trp Asn Glu Asn Ile His Val Asp Glu Asn Gln Arg Arg Val Asp
 100 105 110
 Glu Leu Phe Arg Glu Leu Gln Gly Ala Ser Val Glu Gln Thr Ala Ser
 115 120 125
 Ile Gly Leu Gln Asp Tyr Ile Leu Asn Arg Glu Gln Glu Leu Ser Ser
 130 135 140
 Ser Glu Ala Glu Leu Tyr Phe Lys Thr Glu Thr Ser Lys Glu Ile Ala
 145 150 155 160

Pro Leu Gln Glu Gln Ile Tyr Gln Lys Leu Lys Glu Arg Tyr Pro Leu
 165 170 175
 Ala Val Ile Ser Phe Ser Pro Pro Glu Thr Val Phe Glu Lys Leu Phe
 180 185 190
 Val Thr Gly Glu Ala Asp Ile Val Ala Glu Leu Tyr Ala Arg Asn Lys
 195 200 205
 Asp Arg Ala Pro Gly Pro Gly Thr Leu Arg Gly Leu Glu Gln Thr Phe
 210 215 220
 Gly Gln Lys Thr Gly Ile Pro Pro Thr Gly Ile Ala Phe Glu Asn Gln
 225 230 235 240
 Leu Asn Leu Ser Ile Asn Gln Glu Lys Leu Leu Leu Tyr Gln Ile Ser
 245 250 255
 Tyr Asn Glu Leu Tyr Arg Val Leu Arg Thr Ala Phe Lys Glu Asn Ser
 260 265 270
 Val Ala Met Leu His Ser Tyr Gln Gln Tyr Leu Pro Ile Ser Ile Ala
 275 280 285
 Gly Asp Glu Lys Thr Val Asn Gln Val Leu Gln Glu Thr Leu Ile Gln
 290 295 300
 Thr Gln Pro Asp Ser Lys Thr Gly Glu Val Asn Phe Ile Pro Leu Arg
 305 310 315 320
 Glu Leu Ile Lys Val Thr Pro Ala Glu Asp Leu Lys Ser Ile Thr Ala
 325 330 335
 Gly Arg Asn Gly Glu Tyr Ile Pro Tyr Lys Phe Tyr Gly Val Glu Asn
 340 345 350
 Ala Glu Lys Leu Met Thr Gln Val Lys Glu Thr Ser Ser Glu Thr Gly
 355 360 365
 Asp Trp Asp Ile Ala Phe Ser Gly Ser Phe Phe Ser Asn Gln Lys Met
 370 375 380
 Leu Asp Glu Leu Val Val Ile Leu Phe Ile Ser Leu Leu Leu Met Tyr
 385 390 395 400
 Phe Ile Leu Ala Ala Gln Phe Glu Ser Phe Met Gln Pro Leu Leu Val
 405 410 415
 Leu Met Glu Ile Pro Ile Asp Val Ala Phe Ala Leu Val Leu Leu Trp
 420 425 430
 Val Cys Gly His Thr Leu Asn Leu Met Ser Ala Ile Gly Leu Ile Val
 435 440 445
 Thr Cys Gly Ile Val Ile Asn Asp Ser Ile Leu Lys Leu Asp Ala Ile
 450 455 460
 Asn Glu Leu Arg Lys Glu Gly Val Pro Leu Leu Glu Ala Ile His Glu
 465 470 475 480
 Ala Gly Arg Arg Arg Leu Arg Pro Ile Ile Met Thr Ser Leu Thr Thr
 485 490 495
 Ile Phe Ala Met Val Pro Leu Leu Phe Ser Phe Asp Leu Gly Ser Glu
 500 505 510
 Leu Gln Lys Pro Leu Ser Ile Ala Met Ile Gly Thr Met Thr Ile Gly
 515 520 525
 Thr Leu Val Ser Leu Phe Ile Ile Pro Leu Leu Tyr Trp Phe Ile Tyr
 530 535 540
 Arg Asn Lys Glu Lys Arg
 545 550

<210> 6202

<211> 152

<212> PRT

<213> B.fragilis

<400> 6202

Ser Thr Pro Ile Ala Asn Thr His Asn Asp Met Met Gln Asn Pro Asp
 1 5 10 15

Tyr Phe Glu Arg Thr Arg Ser Arg Leu His Pro Lys Lys Tyr Arg Phe
 20 25 30
 Tyr Phe Phe Asp Tyr Leu Tyr Tyr Cys Gly Asp Arg Trp Ser Lys Arg
 35 40 45
 Asn Ser Arg Val Trp Gly Ser Gly Val Ile Phe Asn Tyr Trp Thr Phe
 50 55 60
 Cys Ile Trp Gly Pro Val Ala Phe Trp Thr Arg Leu Asn Gly Ile His
 65 70 75 80
 Leu Phe Ser Glu Ser Ile Asp Val Thr Ile Val Phe Ala Gly Met Leu
 85 90 95
 Leu Pro Phe Val Cys Thr Arg Leu Arg Tyr Arg Lys Asp Arg Val Ser
 100 105 110
 Ala Ile Arg His His Tyr Arg Arg Ser Ala Trp Arg Ser Ile Ile Pro
 115 120 125
 Pro Arg Leu Val Val Phe Gly Trp Phe Ile Ile Leu Leu Leu Glu Val
 130 135 140
 Ile Gly Ala Lys Leu Cys Glu Ala
 145 150

<210> 6203

<211> 486

<212> PRT

<213> B.fragilis

<400> 6203

His Arg Thr Ile Met Ile Lys Phe Leu Ile Gln Arg Pro Ile Ala Val
 1 5 10 15
 Leu Met Ala Phe Thr Ala Cys Phe Ile Val Gly Leu Val Thr Tyr Phe
 20 25 30
 Thr Leu Pro Val Ser Leu Leu Pro Asp Ile Ser Ile Pro Glu Ile Thr
 35 40 45
 Val Gln Val Ser Ala Lys Asn Thr Ser Ala Arg Glu Leu Glu Asn Thr
 50 55 60
 Val Val Lys Pro Val Arg Gln Gln Leu Ile Gln Val Ala Ala Leu Lys
 65 70 75 80
 Asp Met Thr Ser Glu Thr Arg Asp Gly Ala Gly Ile Ile Arg Leu Ser
 85 90 95
 Phe Asp Phe Gly Thr Asn Thr Asp Leu Ala Phe Ile Glu Val Asn Glu
 100 105 110
 Lys Ile Asp Ala Ala Met Asn Tyr Leu Pro Lys Asp Thr Asp Arg Pro
 115 120 125
 Lys Val Ile Lys Ala Ser Ala Thr Asp Ile Pro Val Phe Tyr Leu Asn
 130 135 140
 Leu Thr Leu Lys Thr Asp Ser Ala Tyr Glu Glu Thr Asp Gln Gln Ala
 145 150 155 160
 Phe Leu Asn Leu Cys Glu Phe Ser Glu Ser Val Ile Lys Arg Arg Ile
 165 170 175
 Glu Gln Leu Pro Glu Val Ala Met Val Asp Val Thr Gly Leu Leu Glu
 180 185 190
 Arg Gln Leu Gln Ile Val Pro Asp Met Asp Lys Leu Ala Met Leu Glu
 195 200 205
 Leu Ser Ile Glu Asp Ile Glu Thr Ala Leu Ala Gln Asn Asn Val Glu
 210 215 220
 Pro Gly Ser Met Thr Val Arg Asp Gly Tyr Tyr Glu Tyr Asn Ile Lys
 225 230 235 240
 Phe Ser Thr Leu Leu Arg Thr Ala Glu Asp Val Glu Asn Ile Tyr Ile
 245 250 255
 Arg Lys Gly Asp Arg Ile Ile Gln Leu Lys Glu Phe Cys Arg Ile Ala
 260 265 270

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Ile Val Pro Val Lys Glu Lys Gly Val Ser Val Ser Asn Gly Lys Arg
275 280 285
Ala Val Thr Leu Ala Ile Ile Lys Gln Ala Asp Glu Asn Met Asp Asn
290 295 300
Met Lys Asp Ala Leu Ser Glu Thr Met Asp Tyr Phe Lys Lys Ile Tyr
305 310 315 320
Pro Asp Ile Glu Phe Ser Val Ser Arg Asn Gln Thr Glu Leu Leu Asp
325 330 335
Tyr Thr Ile Ser Asn Leu Gln Gln Asn Leu Ser Leu Gly Phe Val Phe
340 345 350
Ile Cys Ile Val Ala Val Leu Phe Leu Gly Asp Val Lys Ser Pro Phe
355 360 365
Ile Ile Gly Leu Ser Met Val Glu Ser Ile Val Ile Ser Phe Leu Phe
370 375 380
Leu Tyr Leu Cys Lys Met Ser Leu Asn Ile Ile Tyr Leu Ser Gly Leu
385 390 395 400
Ile Leu Ala Leu Cys Met Met Ile Asp Ser Ser Ile Ile Val Thr Asp
405 410 415
Asn Ile Ser Gln Tyr Arg Glu Lys Gly Tyr Ser Leu Arg Arg Ala Cys
420 425 430
Val Ala Gly Thr Ser Glu Val Val Thr Pro Met Leu Ser Ser Ser Phe
435 440 445
Thr Thr Ile Asp Val Phe Val Pro Leu Val Phe Met Ser Gly Ile Ala
450 455 460
Gly Ala Ile Phe Tyr Asp Gln Ala Phe Ala Val Arg Val Gly Leu Met
465 470 475 480
Val Tyr Tyr Phe His Arg
485

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<210> 6204

<211> 430

<212> PRT

<213> B.fragilis

<400> 6204

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Arg Lys Thr Ile Asp Met Lys Lys Arg Tyr Tyr Ile Val Ile Ala Ala
1 5 10 15
Leu Leu Phe Gly Ala Ser Val Ala Lys Ala Gln Asp His Ile Lys Leu
20 25 30
Asp Leu Gln Lys Thr Ile Gln Leu Ala Asn Asp Ser Ser Leu Glu Ala
35 40 45
Phe Arg Thr Gln Asn Met Tyr Leu Ser Gly Tyr Trp Glu Tyr Arg Thr
50 55 60
Tyr Lys Ala Asn Arg Leu Pro Ser Leu Thr Leu Asn Met Thr Pro Ala
65 70 75 80
Glu Tyr Asn Arg Asp Ile Thr Lys Arg Tyr Asp Ser Glu Lys Asp Leu
85 90 95
Asp Val Tyr Arg Ser Gln Gln Ser Phe Tyr Ala Ser Gly Asn Leu Ala
100 105 110
Ile Gln Gln Asn Phe Asp Leu Thr Gly Gly Thr Phe Tyr Leu Gln Ser
115 120 125
Gln Leu Gly Tyr Met Arg Ser Phe Gly Gly Asn Lys Thr Thr Gln Phe
130 135 140
Thr Ser Val Pro Ile Arg Leu Gly Tyr Ser Gln Ser Leu Val Gly Tyr
145 150 155 160
Asn Ser Phe Lys Trp Glu Arg Lys Ile Glu Pro Leu Lys Tyr Glu Lys
165 170 175
Val Lys Lys Glu Phe Val Tyr Asn Val Glu Ala Val Ser Val Gln Ala
180 185 190

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Thr Thr Tyr Phe Phe Asn Leu Ala Met Ala Gln Ala Glu Tyr Asn Leu
 195 200 205
 Ala Lys Glu Asn Met Val Ser Ser Asp Thr Leu Tyr Ser Ile Gly Val
 210 215 220
 Gln Arg Gln Lys Ile Ala Ala Ile Ser Lys Ala Asp Leu Leu Thr Leu
 225 230 235 240
 Lys Leu Asp Val Val Asn Ala Arg Asn Thr Leu Gln Asn Lys Ala Ser
 245 250 255
 Ala Leu Lys Arg Ala Met Phe Ser Leu Val Ser Phe Leu Asn Leu Asp
 260 265 270
 Lys Asn Thr Val Ile Asp Ile Asp Leu Pro Val Arg Pro Gln Glu Leu
 275 280 285
 Val Ile Pro Val Asp Lys Ala Leu Gln Met Ala His Glu Asn Asn Pro
 290 295 300
 Gln Leu Leu Gly Leu Lys Gln Asn Val Leu Glu Ala Glu Arg Asn Val
 305 310 315 320
 Asp Lys Thr Lys Lys Glu Ser Arg Phe Asn Ala Ser Val Asn Ala Ser
 325 330 335
 Ile Gly Phe Asn Gln Val Ala Asp Asn Phe Gly Asp Val Tyr His Lys
 340 345 350
 Pro Met Gln Gln Asp Leu Val Ser Val Ser Val Ser Ile Pro Leu Val
 355 360 365
 Asp Trp Gly Val Arg Lys Gly Lys Tyr Asn Met Ala Arg Asn Asn Leu
 370 375 380
 Asn Val Val Lys Thr Ser Ala Arg Gln Asp Glu Ile Ser Leu Asp Glu
 385 390 395 400
 Glu Val Ile Met Thr Cys Glu Arg Phe Gln Tyr Ser Thr Glu Tyr Asp
 405 410 415
 His Gln Cys Arg Arg Ser Thr Arg Pro Leu Tyr Pro Gly Leu
 420 425 430

<210> 6205

<211> 161

<212> PRT

<213> B.fragilis

<400> 6205

Gln Met Glu Val Pro Leu Val Asp Lys Asp Tyr Leu Leu Glu Arg Thr
 1 5 10 15
 Pro Gly Asn Gly Gly Trp Thr Tyr Ala Pro Ile Pro Glu Val Pro Gln
 20 25 30
 Asp Lys Lys Ala Pro Phe Gly Trp Val Lys Val Lys Gly Ser Ile Asp
 35 40 45
 Gly Val Glu Ile Lys Lys His His Leu Met Pro Met Gly Asn Gly Glu
 50 55 60
 Leu Gly Leu Ser Val Lys Ala Glu Ile Arg Lys Lys Ile Lys Lys Gln
 65 70 75 80
 Ala Gly Asp Tyr Val His Val Val Leu Tyr Leu Asp Glu Glu Pro Ser
 85 90 95
 Glu Ile Pro Glu Glu Leu Gln Leu Cys Leu Gln Asp Glu Pro Arg Ala
 100 105 110
 Leu Glu Phe Phe Asn Ser Leu Ala Glu Asn Glu Arg His Asn Tyr Val
 115 120 125
 Lys Trp Ile Tyr Ser Ala Lys Thr Asp Arg Ala Lys Val Ala Arg Met
 130 135 140
 Ala Lys Ala Ile Asp Arg Leu Ala Ser Asn Leu Lys Tyr Tyr Asp Lys
 145 150 155 160
 Gly

<210> 6206
 <211> 389
 <212> PRT
 <213> B.fragilis

<400> 6206

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Ile Asn Ser Ser Leu Phe Met Lys Val Leu Val Thr Gly Ala Lys Gly
1      5      10      15
Phe Val Gly Arg Asn Leu Val Ser Gln Leu Arg Asn Ile Gln Ser Gly
      20      25      30
Lys Ala Lys Asn Tyr Ala Leu Ser Gly Asn Glu Leu Ile Ile Phe Glu
      35      40      45
Tyr Asp Val Asp Ser Asp Pro Ser Glu Leu Asp Asp Tyr Cys Arg Gln
      50      55      60
Ala Asp Phe Ile Phe Asn Leu Ala Gly Val Asn Arg Pro Leu Asp Gln
      65      70      75      80
Ser Glu Phe Met Lys Gly Asn Phe Gly Phe Ala Ser Thr Leu Leu Ala
      85      90      95
Ser Leu Lys Arg His Gly Asn Thr Cys Pro Ile Met Ile Ser Ser Ser
      100     105     110
Thr Gln Ala Ala Leu Asp Asn Pro Tyr Gly Ala Ser Lys Arg Ala Gly
      115     120     125
Glu Gln Leu Leu Phe Glu Tyr Ser Arg Glu Thr Gly Ser Lys Val Leu
      130     135     140
Val Tyr Arg Phe Pro Asn Val Phe Gly Lys Trp Cys Arg Pro Asn Tyr
      145     150     155     160
Asn Ser Ala Ile Ala Thr Phe Cys Tyr Asn Ile Ala His Asp Leu Leu
      165     170     175
Ile Gln Val Asn Asp Pro Asn Val Glu Met Asn Leu Val Tyr Ile Asp
      180     185     190
Asp Val Val Asp Glu Leu Ile Ser Ala Leu Met Gly Asn Glu His Arg
      195     200     205
Glu Gly Ala Tyr Cys Lys Val Ser Ala Val Tyr Thr Val Thr Leu Gly
      210     215     220
Ala Ile Val Glu Leu Leu Tyr Ser Phe Arg Glu Asn Arg Asn Asn Leu
      225     230     235     240
Gly Val Pro His Val Gly Asp Ala Phe Thr Lys Lys Leu Tyr Ser Thr
      245     250     255
Tyr Leu Ser Tyr Leu Pro Lys Asp Gly Phe Gly Tyr Pro Leu Lys Met
      260     265     270
Asn Val Asp Ala Arg Gly Ser Phe Thr Glu Ile Ile Arg Ser Thr Asp
      275     280     285
Arg Gly Gln Phe Ser Val Asn Ile Ser Lys Pro His Ile Thr Lys Gly
      290     295     300
Asn His Trp His His Thr Lys Asn Glu Lys Phe Val Val Val Ser Gly
      305     310     315     320
Gln Gly Val Ile Arg Phe Arg Asn Met Tyr Asp Ser Ser Ser Glu Ile
      325     330     335
Leu Glu Tyr Phe Val Ser Gly Asp Lys Leu Glu Ile Ile Asp Ile Pro
      340     345     350
Thr Gly Tyr Thr His Asn Ile Glu Asn Leu Gly Asp Thr Asp Met Val
      355     360     365
Thr Phe Met Trp Cys Asn Glu Cys Phe Asp Pro Gly Arg Pro Asp Thr
      370     375     380
Tyr Phe Glu Glu Val
      385

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<210> 6207

<211> 66
 <212> PRT
 <213> B.fragilis

<400> 6207

Arg Gln Ile Ser Lys Ile Tyr Lys Gln Ser Gln Leu His Ser Tyr His
 1 5 10 15
 Leu Lys Lys Thr Ile Ser Pro Gly Ala Arg His Gln Ala His Thr Leu
 20 25 30
 Lys His Lys Ile Ile Arg Lys Ala Ser Ser Leu Lys Tyr His Leu Tyr
 35 40 45
 Leu Ser Asn Asn Asn Tyr Tyr Ile Ile Phe Leu Ile Gln Ser Ser Trp
 50 55 60
 Lys Asn
 65

<210> 6208
 <211> 632
 <212> PRT
 <213> B.fragilis

<400> 6208

Ser Asn Gly Phe Lys Asp Lys Ser Cys Phe Pro Lys Asn Glu Tyr Thr
 1 5 10 15
 Met Met Asp Ser His Asp Thr Asn Gln Pro Leu Lys Gln Gly Glu Leu
 20 25 30
 Glu Glu Glu Lys Lys Ala Val Glu Val Ser Glu Glu Ile Thr Glu Thr
 35 40 45
 Pro Ala Glu Glu Thr Ile Val Glu Lys Pro Thr Glu Asn Ala Ser Lys
 50 55 60
 Leu Ser Thr Lys Glu Glu Val Leu Leu Arg Leu Lys Glu Val Ala Gln
 65 70 75 80
 Asp Ala Glu Asn Ala Asn Lys Gln Glu Leu Asp Gly Leu Lys Gln Thr
 85 90 95
 Phe Tyr Lys Ile His Asn Ala Glu Ile Glu Ala Ala Lys Lys Thr Phe
 100 105 110
 Val Glu Asn Gly Gly Ala Glu Glu Phe Ile Ala Gln Pro Ser Gly
 115 120 125
 Val Glu Glu Glu Phe Lys Ser Leu Met Ala Ala Ile Lys Glu Lys Arg
 130 135 140
 Ser Ala Leu Ala Ala Glu Ile Glu Lys Gln Lys Glu Glu Asn Leu Gln
 145 150 155 160
 Val Lys Leu Ser Ile Ile Glu Glu Leu Lys Glu Leu Val Glu Ser Pro
 165 170 175
 Asp Asp Ala Asn Lys Ser Tyr Asn Glu Phe Lys Lys Leu Gln Gln Gln
 180 185 190
 Trp Asn Glu Val Lys Leu Val Pro Gln Ala Lys Val Asn Glu Leu Trp
 195 200 205
 Lys Asn Tyr Gln Leu His Val Glu Lys Phe Tyr Asp Ile Leu Lys Leu
 210 215 220
 Asn Asn Glu Phe Arg Glu Tyr Asp Phe Arg Lys Asn Leu Glu Ile Lys
 225 230 235 240
 Thr His Leu Cys Glu Ala Ala Glu Lys Leu Ala Asp Glu Gln Asp Val
 245 250 255
 Val Ser Ala Phe His Gln Leu Gln Lys Leu His Gln Glu Phe Arg Asp
 260 265 270
 Thr Gly Pro Val Ala Lys Glu Leu Arg Asp Glu Ile Trp Asn Arg Phe
 275 280 285
 Lys Ala Ala Ser Thr Ala Val Asn Arg Arg His Gln Gln His Phe Glu

290 295 300
 Ala Leu Lys Glu Thr Glu Gln His Asn Leu Asp Gln Lys Thr Val Ile
 305 310 315 320
 Cys Glu Ile Val Glu Ala Ile Glu Phe Asp Gln Leu Lys Thr Phe Ala
 325 330 335
 Ala Trp Glu Thr Lys Thr Gln Glu Val Ile Ala Leu Gln Asn Lys Trp
 340 345 350
 Lys Thr Ile Gly Phe Ala Pro Gln Lys Met Asn Val Lys Ile Phe Glu
 355 360 365
 Arg Phe Arg Lys Ala Cys Asp Glu Phe Phe Lys Lys Lys Gly Glu Phe
 370 375 380
 Phe Lys Leu Leu Lys Glu Gly Met Asn Ala Asn Leu Glu Lys Lys Lys
 385 390 395 400
 Ala Leu Cys Glu Lys Ala Glu Ser Leu Lys Asp Ser Thr Glu Trp Lys
 405 410 415
 Glu Thr Ala Glu Ile Leu Thr Lys Leu Gln Lys Glu Trp Lys Thr Ile
 420 425 430
 Gly Pro Val Ser Lys Lys Tyr Ser Asp Ala Val Trp Lys Arg Phe Ile
 435 440 445
 Thr Ala Cys Asp Tyr Phe Phe Glu Gln Lys Gly Lys Ala Thr Ser Ser
 450 455 460
 Gln Arg Ser Val Glu Gln Glu Asn Leu Glu Lys Lys Lys Ala Ile Ile
 465 470 475 480
 Ala Arg Leu Thr Ala Ile Asp Glu Thr Thr Asp Ala Asp Glu Ala Ser
 485 490 495
 Lys Glu Val Arg Glu Leu Met Lys Glu Trp Asn Gly Ile Gly His Val
 500 505 510
 Pro Phe Lys Glu Lys Asp Arg Leu Tyr Lys Gln Tyr His Gly Leu Ile
 515 520 525
 Asp Gln Leu Phe Asp Arg Phe Asn Ile Ser Ala Ser Asn Lys Lys Leu
 530 535 540
 Ser Asn Phe Lys Ser Ser Ile Gly Asn Ile Gln Ser Gly Gly Ser Gln
 545 550 555 560
 Ser Leu Tyr Arg Glu Arg Glu Lys Leu Val Arg Thr Tyr Glu Asn Met
 565 570 575
 Lys Asn Glu Leu Gln Thr Tyr Glu Asn Asn Leu Gly Phe Leu Thr Thr
 580 585 590
 Ser Ser Lys Lys Gly Asn Ser Leu Leu Thr Glu Ile Asn Arg Lys Val
 595 600 605
 Glu Lys Leu Lys Ser Asp Leu Glu Leu Val Leu Gln Lys Ile Lys Val
 610 615 620
 Ile Asp Glu Ser Ile Lys Glu Glu
 625 630

<210> 6209

<211> 113

<212> PRT

<213> B.fragilis

<400> 6209

Gly Gly Thr Ser Met Arg Gln Gly Val Val Tyr Leu Asn Lys Glu Arg
 1 5 10 15
 Val Gly Ile Ile Thr Glu Leu Ser Ser Asn Glu Tyr Lys Phe Arg Tyr
 20 25 30
 Asp Asp Glu Tyr Phe Asn Asp Pro Ser Lys Pro Ser Ile Ser Leu Thr
 35 40 45
 Leu Thr Lys Gln Gln Gln Glu Tyr Thr Ser His Tyr Leu Phe Pro Phe
 50 55 60
 Phe Ala Asn Met Leu Ser Glu Gly His Asn Arg Ile Val Gln Ala Arg

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<210> 6210
<211> 343
<212> PRT
<213> B.fragilis
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[illegible]

<210> 6211
 <211> 414
 <212> PRT
 <213> B.fragilis

<400> 6211

Thr	Lys	Ser	Ser	Gly	Glu	Asn	Pro	Asp	Asn	Ile	Glu	Met	Asn	Ile	Leu	1	5	10	15
Phe	Leu	Thr	Leu	Asn	Arg	Val	Ser	Asp	Leu	Ser	Glu	Arg	Gly	Ile	Tyr	20	25	30	
Thr	Asp	Leu	Met	Arg	Glu	Phe	Ile	Cys	His	Gly	His	Arg	Val	Tyr	Met	35	40	45	
Val	Val	Pro	Ala	Glu	Arg	Arg	Phe	His	Glu	Ser	Thr	Ser	Ile	Lys	Glu	50	55	60	
Ser	Cys	Gly	Ala	Gln	Met	Leu	Arg	Val	Lys	Thr	Leu	Asn	Ile	Gln	Lys	65	70	75	80
Ser	Asn	Val	Val	Glu	Lys	Gly	Ile	Gly	Thr	Leu	Leu	Leu	Glu	Met	Gln	85	90	95	
Tyr	Gln	Cys	Ala	Ile	Lys	Arg	Tyr	Trp	Lys	Asp	Ile	Arg	Phe	Asp	Leu	100	105	110	
Ile	Leu	Tyr	Ser	Thr	Pro	Pro	Ile	Thr	Phe	Asn	Arg	Val	Ile	Ser	Ser	115	120	125	
Gln	Lys	Arg	Arg	Cys	Lys	Ala	Lys	Ser	Tyr	Leu	Leu	Leu	Lys	Asp	Ile	130	135	140	
Phe	Pro	Gln	Asn	Ala	Val	Asp	Leu	Gly	Met	Phe	Ser	Lys	Arg	Ser	Leu	145	150	155	160
Ile	Tyr	Arg	Leu	Phe	Arg	Lys	Lys	Glu	Lys	Asp	Leu	Tyr	Gln	Ile	Ser	165	170	175	
Asp	Phe	Ile	Gly	Cys	Met	Ser	Pro	Ala	Asn	Val	Asp	Tyr	Val	Leu	Thr	180	185	190	
His	Asn	Pro	Glu	Ile	Lys	Ala	Asp	Arg	Val	Glu	Ile	Cys	Pro	Asn	Ser	195	200	205	
Ile	Lys	Leu	Leu	Glu	Lys	Ser	Leu	Met	Ala	Ser	Thr	Val	Arg	Lys	Asn	210	215	220	
Ile	Leu	Gln	Lys	Leu	His	Ile	Pro	Ile	Asn	Lys	Thr	Leu	Phe	Ile	Tyr	225	230	235	240
Gly	Gly	Asn	Leu	Gly	Arg	Pro	Gln	Gly	Leu	Ile	Phe	Leu	Leu	Asp	Val	245	250	255	
Ile	Ala	Ala	Asn	Glu	Glu	Arg	Asn	Asp	Ser	Tyr	Phe	Ile	Ile	Val	Gly	260	265	270	
Ser	Gly	Thr	Glu	Tyr	Gly	Lys	Ile	Lys	Ser	Trp	Phe	Glu	Ala	Asn	His	275	280	285	
Pro	Asp	Asn	Ser	Met	Leu	Leu	Ser	Ser	Leu	Pro	Lys	Lys	Glu	Tyr	Asp	290	295	300	
Asp	Leu	Val	Lys	Ala	Cys	Asp	Val	Gly	Leu	Ile	Phe	Leu	Asp	Arg	Arg	305	310	315	320
Phe	Thr	Ile	Pro	Asn	Tyr	Pro	Ser	Arg	Leu	Leu	Ser	Tyr	Leu	Glu	Asn	325	330	335	
Arg	Met	Pro	Val	Leu	Leu	Ala	Thr	Asp	Leu	Asn	Thr	Asp	Ile	Gly	Arg	340	345	350	
Ile	Ala	Glu	Arg	Asn	Gly	Tyr	Gly	Phe	Trp	Thr	Glu	Asn	Gly	Asn	Leu	355	360	365	
Asp	Thr	Phe	Met	Glu	Met	Val	Asp	Ser	Leu	Ser	Ala	Asp	Arg	Glu	Lys	370	375	380	
Ile	Lys	Val	Met	Gly	Glu	Lys	Gly	Tyr	Glu	Tyr	Leu	Lys	Ser	Asn	Tyr	385	390	395	400
Thr	Val	Glu	Arg	Gly	Tyr	Arg	Met	Ile	Met	Lys	His	Phe	Glu			405	410		

<210> 6212
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 6212
 Leu His Leu Leu Glu Leu Gln Gln Leu Gln Asn Leu Val Trp Lys Pro
 1 5 10 15
 Leu Leu Leu Tyr Leu Asn Asp Leu Asp Glu Ser Tyr Pro His Ser Phe
 20 25 30
 Gln His Lys Leu Phe Tyr Ile Phe Pro Ser Tyr Ile Glu Phe Ile Arg
 35 40 45
 Lys Asn Lys Gln Glu Val Leu Val Ile Thr Ile Tyr
 50 55 60

<210> 6213
 <211> 162
 <212> PRT
 <213> B.fragilis

<400> 6213
 Arg Ile Ser Pro Leu Ser Ser Pro Gln Arg Gly Gly Arg Arg Ala Glu
 1 5 10 15
 Gly Gly Phe Cys Leu Ser Pro Asp Thr Gly Ile Arg Leu Gln Tyr Asn
 20 25 30
 Asp Ala Gln Leu Leu Gly Thr Asp Gly His Ala Lys Glu Ile Glu His
 35 40 45
 Tyr Arg His Arg Gly Ser Lys Leu His Thr Gln Ala Val Gly Leu Trp
 50 55 60
 Glu Glu Gly Asn Asp Gly Met Glu Thr Asp Cys Gln His Leu Leu Glu
 65 70 75 80
 Arg His Arg Ser Gln Arg Lys Ile Pro Asp Ser Gly Ala Lys Gln Asp
 85 90 95
 Glu Lys Lys Val Ala Glu Ser Val Ser Pro Leu Phe Val Val Asp Lys
 100 105 110
 Lys Ala Asn Ile Gln Ala Phe Asp Gln Lys Gly Ile Gln Arg Asn Lys
 115 120 125
 Glu Val Lys Ser Val Leu Asn Glu Leu Lys His Ser Val Phe Lys Ala
 130 135 140
 Gln Asp Phe Ser Arg Pro Lys Leu Cys Phe Asn Ala Thr Leu Lys Leu
 145 150 155 160
 Val Leu

<210> 6214
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6214
 Glu Cys Leu Pro Lys Asp Arg Asn Leu Phe Ser Phe Gly Asn Gly Val
 1 5 10 15
 Asn Ile Val Ser Leu Ile Asp Ser Val Lys Met Ile Phe Arg Leu Asn
 20 25 30
 Leu Val Leu Val Leu Pro Phe Gly Lys Ser Leu Leu Ala Leu Tyr Glu
 35 40 45
 Leu Phe Trp Gly Glu Cys Arg Cys Gly Tyr Gln Ile Leu
 50 55 60

<210> 6215
 <211> 98
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (19)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6215
 Lys Ala Ala Thr Ala Thr Ala Ser Leu Pro Leu Asn Gly Ile His Thr
 1 5 10 15
 Arg Ser Xaa Arg Ser Trp Tyr Thr Phe Ile Leu Lys Gly Ile Asp Asn
 20 25 30
 Val Gly Leu Leu Asn Glu Ile Thr Gln Val Ile Ser Arg Gln Leu Asn
 35 40 45
 Val Asn Ile Arg Lys Leu Asp Met Glu Thr Asp Asp Gly Ile Phe Glu
 50 55 60
 Gly Lys Val Gly Leu Tyr Val His Asp Val Glu Asp Val Lys Ala Ile
 65 70 75 80
 Cys Asn Asn Leu Arg Lys Ile Pro Asn Ile Lys Ser Val Thr Arg Val
 85 90 95
 Glu Asn

<210> 6216
 <211> 387
 <212> PRT
 <213> B.fragilis

<400> 6216
 Asn Ser Asn Thr Met Leu Lys Ser Lys Tyr Lys Ile Tyr Leu Leu Leu
 1 5 10 15
 Leu Cys Leu Thr Gly Cys Val Ser Glu Tyr Asn Ala Gln Leu Pro Ser
 20 25 30
 Ser Asp Glu Glu Leu Leu Val Val Thr Gly Asp Ile Ile Ala Asn Thr
 35 40 45
 Glu Ala Ile Phe Ser Leu Ser Lys Ser Ile Pro Leu Ser Glu Asp Met
 50 55 60
 Pro Glu Asp Tyr Arg Asn Ile Tyr Ala Arg Ile Ala Val Val Gly Ser
 65 70 75 80
 Asp Gly Tyr Arg Ser Asp Phe Gly Thr Ala Leu Gly Asp Gly Lys Tyr
 85 90 95
 Gln Val Ser Ile Gly Glu Leu Gln Asp Asp Val Ser Tyr Gly Ile Glu
 100 105 110
 Ile Glu Tyr Asp Gly Glu Ile Tyr Thr Ser Ser Pro Ser Thr Pro Met
 115 120 125
 Val Ser Ser Glu Ile Asp Ser Val Ser Trp Ile Gln Pro Glu Pro Glu
 130 135 140
 Gln Ala Leu Ser Ile Arg Val Ser Thr His Gly Asp Pro Gly Lys Thr
 145 150 155 160
 Gln Tyr Tyr Met Trp Asn Tyr Arg Glu Asp Trp Glu Ile Arg Ala Ser
 165 170 175
 Tyr Ile Thr Thr Cys Tyr Phe Asp Pro Asp Met Asn Arg Ile Tyr Glu
 180 185 190
 Asp Ser Asn Tyr Pro Thr Phe Tyr Cys Trp Lys Lys Glu Ile Ser Arg
 195 200 205
 Asn Ile Leu Ile Gly Ser Thr Glu Lys Leu Lys Glu His Leu Ile Ile

210		215		220
Asn Asn Lys Leu Leu Asp Val Pro Val Asn Glu Asp Arg Phe Thr Val				
225	230	235	240	
Leu Tyr Ser Ile Gln Val Gln Gln Arg Ala Leu Ser Lys Glu Gly Tyr				
	245	250	255	
Glu Tyr Tyr Leu Asn Val Gln Gln Gln Asn Glu Glu Met Gly Gly Ile				
	260	265	270	
Phe Thr Pro Gln Pro Ser Glu Ile Gln Gly Asn Ile Ser Cys Ile Ser				
	275	280	285	
Gln Pro Gly Arg Arg Thr Ile Gly Tyr Val Gly Val Tyr Lys Asn Ile				
	290	295	300	
Ser Glu Lys Arg Ile Tyr Ile His Pro Asn Glu Ile Lys Arg Pro Pro				
305	310	315	320	
Leu Tyr Ser Gly Cys Glu Glu Val Ser Asp Ser Glu Met Asp Glu Gln				
	325	330	335	
Gly Tyr Ser Thr Tyr Leu Ile Arg Tyr Leu Val Gly Tyr Arg Pro Val				
	340	345	350	
Gly Thr Gly Thr His Ile Asp His Trp Ala Leu Arg Arg Cys Thr Glu				
	355	360	365	
Cys Glu Ala Asn Gly Gly Ser Lys Asn Lys Pro Ser Phe Trp Pro Asn				
370	375	380		
Asp His Gln				
385				

<210> 6217
 <211> 121
 <212> PRT
 <213> B.fragilis

<400> 6217

Leu Arg Asn Thr Leu Gln Thr Lys Arg Asn Leu Cys His Ser Lys Ile				
1	5	10	15	
Lys Ser Thr Asn Ser Arg Asn Gln Ile His Asn Ile Leu Gly Ile Ser				
	20	25	30	
Leu Leu Ile Lys Gln Ile Leu Ser Ile Phe Val Ser Asn Ser Gln Tyr				
	35	40	45	
Ile Gly Asn Met Lys Gln Ile Gly Ile Gln Ile Arg Gln Arg Arg Lys				
	50	55	60	
Met Leu Gly Ile Asn Gln Thr Leu Ala Asp Leu Ala Gln Ile Ser				
65	70	75	80	
Ile Asn Thr Ile Thr Lys Ile Glu Asn Gly Glu Ile Asn Ile Asn Phe				
	85	90	95	
Gln Lys Leu Tyr Ala Ile Leu Glu Val Leu Gly Leu Glu Leu Ser Leu				
	100	105	110	
Lys Ile Lys Asn Lys Glu Gly His Leu				
	115	120		

<210> 6218
 <211> 681
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (363), (629)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6218
 Ile Met Asp Thr Glu Asn Gln Lys Glu Ile Ala Glu Glu Gln Met Ile

1	5	10	15
Glu Gln Ala Phe	Gln Glu Leu Leu	Asn Asp Tyr Leu	Ala Thr Lys His
20	25	30	
Arg Lys Arg Ile	Glu Ile Ile Thr	Lys Ala Phe Asn	Phe Ala Asn Gln
35	40	45	
Ala His Lys Gly	Ile Lys Arg Arg	Ser Gly Glu Pro	Tyr Ile Met His
50	55	60	
Pro Ile Ala Val	Ala Lys Ile Val	Cys Asn Glu Ile	Gly Leu Gly Ser
65	70	75	80
Thr Ser Ile Cys	Ala Ala Leu Leu	His Asp Val Val	Glu Asp Thr Asp
85	90	95	
Tyr Thr Val Glu	Asp Ile Glu Asn	Ile Phe Gly Ala	Lys Ile Ala Gln
100	105	110	
Ile Val Asp Gly	Leu Thr Lys Ile	Ser Gly Gly Ile	Phe Gly Asp Arg
115	120	125	
Ala Ser Ala Gln	Ala Glu Asn Phe	Lys Lys Leu Leu	Leu Thr Met Ser
130	135	140	
Asp Asp Ile Arg	Val Ile Leu Ile	Lys Ile Ala Asp	Arg Leu His Asn
145	150	155	160
Met Arg Thr Leu	Gly Ser Met Leu	Pro Asn Lys Gln	Tyr Lys Ile Ala
165	170	175	
Gly Glu Thr Leu	Tyr Ile Tyr Ala	Pro Leu Ala Asn	Arg Leu Gly Leu
180	185	190	
Tyr Lys Ile Lys	Thr Glu Leu Glu	Asn Leu Ser Phe	Lys Tyr Glu His
195	200	205	
Pro Glu Glu Tyr	Gln Glu Ile Glu	Glu Lys Leu Asn	Ala Thr Ala Ala
210	215	220	
Glu Arg Asp Lys	Val Phe Asn Glu	Phe Thr Ala Pro	Ile Arg Glu Gln
225	230	235	240
Leu Asp Lys Met	Gly Leu Lys Tyr	Arg Ile Leu Ala	Arg Val Lys Ser
245	250	255	
Ile Tyr Ser Ile	Trp Asn Lys Met	Gln Thr Lys His	Val Pro Phe Glu
260	265	270	
Glu Ile Tyr Asp	Leu Leu Ala Val	Arg Ile Ile Phe	Glu Pro Arg Asn
275	280	285	
Ile Asp Glu Glu	Leu Asn Asp Cys	Phe Asp Ile Tyr	Val Ser Ile Ser
290	295	300	
Lys Ile Tyr Lys	Pro His Pro Asp	Arg Leu Arg Asp	Trp Val Ser His
305	310	315	320
Pro Lys Ala Asn	Gly Tyr Gln Ala	Leu His Val Thr	Leu Met Gly Asn
325	330	335	
Asn Gly Gln Trp	Ile Glu Val Gln	Ile Arg Ser Glu	Arg Met Asn Asp
340	345	350	
Val Ala Glu Gln	Gly Phe Ala Ala	His Trp Xaa Tyr	Lys Glu Arg Gly
355	360	365	
Gly Ser Glu Asp	Glu Ser Glu Leu	Glu Lys Trp Leu	Arg Thr Ile Lys
370	375	380	
Glu Ile Leu Asp	Asp Pro Gln Pro	Asp Ala Ile Asp	Phe Leu Asp Thr
385	390	395	400
Ile Lys Leu Asn	Leu Phe Ala Ser	Glu Ile Phe Val	Phe Thr Pro Lys
405	410	415	
Gly Glu Leu Lys	Thr Met Pro Gln	Asn Ser Thr Ala	Leu Asp Phe Ala
420	425	430	
Phe Ser Leu His	Thr Asp Ile Gly	Ser His Cys Ile	Gly Ala Lys Val
435	440	445	
Asn His Lys Leu	Val Pro Leu Ser	His Lys Leu Gln	Ser Gly Asp Gln
450	455	460	
Val Glu Ile Leu	Thr Ser Lys Ser	Gln Arg Val Gln	Pro Gln Trp Glu
465	470	475	480

Val Phe Ala Thr Thr Ala Arg Ala Arg Ala Lys Ile Ala Ala Ile Leu
 485 490 495
 Arg Lys Glu Arg Lys Thr Phe Gln Lys Glu Gly Glu Glu Leu Leu Asn
 500 505 510
 Glu Phe Phe Lys Lys Glu Glu Ile Arg Pro Glu Ala Ala Val Ile Glu
 515 520 525
 Lys Leu Cys Lys Leu His Asn Met Lys Asn Glu Glu Glu Phe Leu Val
 530 535 540
 Ala Ile Gly Asn Lys Thr Ile Val Leu Gly Asp Ala Asp Lys Asn Glu
 545 550 555 560
 Leu Lys Glu Lys Gln Ser Ser Asn Trp Met Lys Tyr Leu Thr Phe Ser
 565 570 575
 Phe Gly Asn Asn Lys Asp Lys Gln Gln Glu Glu Lys Glu Pro Gln Glu
 580 585 590
 Lys Glu Lys Ile Asn Thr Lys Gln Ile Leu Lys Leu Thr Glu Asp Ala
 595 600 605
 Leu Gln Lys Lys Tyr Ile Met Ala Glu Cys Cys His Pro Ile Pro Gly
 610 615 620
 Asp Asp Val Leu Xaa Tyr Met Asp Glu Asn Asp Arg Ile Ile Ile His
 625 630 635 640
 Lys Arg Gln Cys Pro Val Ala Ala Lys Leu Lys Ser Ser Tyr Gly Asn
 645 650 655
 Arg Ile Ile Ala Thr Glu Trp Asp Thr His Lys Lys Leu Ser Phe Leu
 660 665 670
 Val Tyr Ile Tyr Ile Lys Arg Asn Arg
 675 680

<210> 6219

<211> 295

<212> PRT

<213> B.fragilis

<400> 6219

Ser Lys Lys Thr Asn Met Ala Ile Ala Tyr Asp Gly Ile Asn Tyr Phe
 1 5 10 15
 Pro Val Gly Val Asn Phe Met Glu Glu Asn Ala Met Glu Val Ile Glu
 20 25 30
 Ala Lys Tyr Gly Ile Lys Gly Ser Ala Ile Val Leu Lys Leu Met Cys
 35 40 45
 Lys Ile Tyr Lys Glu Gly Tyr Tyr Ile Arg Trp Asp Glu Glu Gln Cys
 50 55 60
 Leu Ile Phe Ala Asn Lys Ala Gly Arg Glu Val Gln Ala Glu Glu Val
 65 70 75 80
 Gln Gly Ile Ile Glu Ile Leu Phe Thr Lys Gly Ile Leu Asp Arg Asn
 85 90 95
 Ser Tyr Gln Glu Asn Gly Ile Leu Thr Ser Glu Ser Ile Gln Lys Val
 100 105 110
 Trp Met Glu Ala Thr Lys Arg Arg Lys Arg Glu Leu Ser Glu Leu Pro
 115 120 125
 Tyr Leu Met Val Lys Pro Glu Lys Glu Asn Gly Lys Ala Asp Thr Pro
 130 135 140
 Pro Ala Leu Gln Glu Ile Gln Gln Pro Glu Leu Phe Lys Lys Glu Lys
 145 150 155 160
 Thr Pro Val Asn Pro Lys Asn Val Val His His Val Ala Val Asp Ala
 165 170 175
 Lys Asn Ala Cys Asn Ser Gly Gln Ser Lys Val Lys Glu Lys Lys Ala
 180 185 190
 Glu Glu Asn Lys Glu Phe Pro Pro Ser Ala Pro Pro Lys Gly Glu Glu
 195 200 205

Glu Glu Arg Lys Gly Asp Ser Ala Tyr Leu Pro Ile Pro Gly Tyr Ala
 210 215 220
 Phe Asn Thr Met Thr His Asn Tyr Ser Gly Leu Met Asp Thr Leu Lys
 225 230 235 240
 Arg Leu Ser Ile Thr Asp Thr Gly Glu Val Asn Ser Ile Leu Arg Leu
 245 250 255
 Ser Asp Tyr Gly Arg Lys Gly Thr Thr Val Trp Lys Leu Ile Ala Asn
 260 265 270
 Thr Cys Trp Ser Asp Ile Gly Ala Lys Gly Arg Tyr Leu Ile Ala Ala
 275 280 285
 Leu Asn Lys Thr Lys Arg Arg
 290 295

<210> 6220
 <211> 121
 <212> PRT
 <213> B.fragilis

<400> 6220
 Thr Thr Lys Thr Asn Asn Lys Lys Lys Lys Lys Glu Phe Lys Lys Asn
 1 5 10 15
 Lys Thr Gly Asn Lys Gln Ile Ser Asp Asn Arg Asp Leu Lys Ser Asn
 20 25 30
 Arg Gly Arg Lys Lys Glu Lys Pro Ile Gln Gly Ile Val Leu Lys His
 35 40 45
 Tyr Glu Cys Leu Lys Leu Leu Ile Thr Leu Tyr Gln Asp Gly Ala Met
 50 55 60
 Gly Ile Lys Lys Glu Thr Ser Gln Val Ala Leu Ala Arg Tyr Ile Asp
 65 70 75 80
 Asp Lys Lys Leu Leu Gly Asn Ile Arg Asn Gly Ile Phe Ile Pro Leu
 85 90 95
 Lys Phe Ser Thr Ile Leu Lys Glu Thr Asn Thr Ile Trp Asn Glu Met
 100 105 110
 Leu Arg Asp Lys Ser Ile Gly Ile Lys
 115 120

<210> 6221
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 6221
 Met Asn Glu Thr Lys Val Leu Ile Glu Lys Ile Thr Glu Gly Ile Gln
 1 5 10 15
 Glu Lys Lys Gly Lys Asn Ile Val Ile Ala Asp Leu Thr Asn Ile Asp
 20 25 30
 Asp Thr Ile Cys Lys Tyr Phe Val Ile Cys Gln Gly Asn Ser Pro Ser
 35 40 45
 Gln Val Ile Ala Ile Val Asp Ser Ile Lys Glu Phe Thr Arg Lys Gly
 50 55 60
 Ala Gly Thr Lys Pro Ser Ala Ile Asp Gly Gln Arg Asn Ala Glu Trp
 65 70 75 80
 Val Ala Met Asp Phe Ser Asp Val Leu Val His Val Phe Leu Pro Glu
 85 90 95
 Ala Arg Asn Phe Tyr Asn Leu Glu His Leu Trp Ala Asp Ala Lys Leu
 100 105 110
 Thr Thr Ile Pro Asp Ile Asp
 115

<210> 6222
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 6222

Asn	Leu	Ser	Thr	Met	Ile	Glu	Leu	Thr	Cys	Cys	Pro	Ser	Thr	Leu	Gln
1				5					10					15	
Lys	Gly	Phe	Ser	Thr	Tyr	Ser	Pro	Val	Ala	Leu	Lys	Glu	Leu	Phe	Asn
			20					25					30		
Ser	Gln	Lys	Val	Asn	His	Ile	Leu	Pro	Tyr	Asn	Gly	Met	Asp	Asn	Asn
		35					40					45			
Glu	Thr	Glu	Gln	Lys	Glu	Phe	Gln	Asp	Asn	Asn	Lys	His	Met	Ser	Ile
	50					55					60				
Ser	Gly	Ala	Gln	Gln	Asn	Lys	Ser	Ser	Gln						
65					70										

<210> 6223
 <211> 367
 <212> PRT
 <213> B.fragilis

<400> 6223

Leu	Ile	Ser	Ala	Met	Glu	His	Pro	Glu	Asn	Asn	Glu	Ala	Tyr	Lys	Gly
1				5					10					15	
Leu	Val	Val	Asn	Ala	Gly	Ile	Glu	Gln	Pro	Ser	Ser	Val	Asn	Pro	Tyr
			20					25					30		
Leu	Lys	Arg	Lys	Val	Lys	Lys	Arg	Gln	Leu	Ser	Val	Ser	Glu	Phe	Val
		35					40					45			
Glu	Gly	Ile	Val	Lys	Gly	Asp	Val	Thr	Ile	Leu	Ser	Gln	Ala	Val	Thr
	50				55						60				
Leu	Val	Glu	Ser	Val	Arg	Pro	Glu	His	Gln	Ala	Thr	Ala	Gln	Glu	Val
65					70				75					80	
Ile	Glu	Lys	Cys	Leu	Pro	Tyr	Ser	Gly	Asn	Ser	Ile	Arg	Val	Gly	Ile
			85					90						95	
Ser	Gly	Val	Pro	Gly	Ala	Gly	Lys	Ser	Thr	Ser	Ile	Asp	Val	Phe	Gly
		100					105						110		
Leu	His	Val	Leu	Glu	Lys	Gly	Gly	Lys	Leu	Ala	Val	Leu	Ala	Ile	Asp
	115					120						125			
Pro	Ser	Ser	Glu	Arg	Ser	Lys	Gly	Ser	Ile	Leu	Gly	Asp	Lys	Thr	Arg
	130					135					140				
Met	Glu	Gln	Leu	Ser	Val	His	Pro	Lys	Ser	Phe	Ile	Arg	Pro	Ser	Pro
145					150					155					160
Ser	Ala	Gly	Ser	Leu	Gly	Gly	Val	Ala	Arg	Lys	Thr	Arg	Glu	Thr	Ile
			165						170					175	
Ile	Leu	Cys	Glu	Ala	Ala	Gly	Phe	Asp	Lys	Ile	Phe	Val	Glu	Thr	Val
		180					185						190		
Gly	Val	Gly	Gln	Ser	Glu	Thr	Ala	Val	His	Ser	Met	Val	Asp	Phe	Phe
	195					200						205			
Leu	Leu	Ile	Gln	Leu	Ala	Gly	Thr	Gly	Asp	Glu	Leu	Gln	Gly	Ile	Lys
	210					215					220				
Arg	Gly	Ile	Met	Glu	Met	Ala	Asp	Gly	Ile	Val	Ile	Asn	Lys	Ala	Asp
225					230					235					240
Gly	Ser	Asn	Ile	Asp	Lys	Ala	Lys	Leu	Ala	Ala	Ala	Gln	Phe	Arg	Asn
			245						250					255	
Ala	Leu	His	Leu	Phe	Pro	Ala	Pro	Asp	Ser	Gly	Trp	Thr	Pro	Arg	Val
		260						265					270		
Leu	Thr	Tyr	Ser	Gly	Phe	Tyr	Asn	Leu	Gly	Val	Lys	Glu	Ile	Trp	Asp
		275					280						285		

Met Val Tyr Glu Tyr Ile Asp Phe Val Lys Gly Asn Gly Tyr Phe Glu
 290 295 300
 Tyr Arg Arg Asn Glu Gln Ser Lys Tyr Trp Met Tyr Glu Ser Ile Asn
 305 310 315 320
 Glu Gln Leu Arg Asp Ser Phe Tyr His Asn Ala Lys Ile Glu Ser Met
 325 330 335
 Leu Gln Glu Lys Glu Gln Gln Val Leu Arg Gly Asn Leu Thr Ser Phe
 340 345 350
 Val Ala Ala Lys Ser Leu Leu Asp Thr Tyr Phe Glu Asp Leu Lys
 355 360 365

<210> 6224

<211> 401

<212> PRT

<213> B.fragilis

<400> 6224

Leu Leu Tyr Ala Asn Gln Arg Asn Phe Arg Ile Asn Thr Trp Tyr Lys
 1 5 10 15
 Ser Ile Lys Lys Met Ile Ser Pro Lys Phe Phe Ile Asp Ser Leu Ser
 20 25 30
 Asp Arg Gln Ile Asp Phe Phe Ser Gly Val Pro Asp Ser Leu Leu Lys
 35 40 45
 Asn Ile Cys Ala Tyr Ile Ala Asp Asn Lys Asp Ala Lys His Asn Ile
 50 55 60
 Ile Thr Ala Asn Glu Gly Ala Ala Val Gly Leu Ala Val Gly His Tyr
 65 70 75 80
 Leu Ala Thr Arg Glu Ile Pro Val Val Tyr Met Gln Asn Ser Gly Glu
 85 90 95
 Gly Asn Ile Ile Asn Pro Leu Ala Ser Leu Thr Asp Lys Glu Val Tyr
 100 105 110
 Asn Ile Pro Ile Leu Leu Leu Ile Gly Trp Arg Gly Glu Pro Gly Val
 115 120 125
 His Asp Glu Pro Gln His Val Lys Gln Gly Lys Val Thr Ile Pro Leu
 130 135 140
 Leu Asp Val Met Gly Ile Lys Asn Thr Val Met Ser Lys Ser Glu Val
 145 150 155 160
 Asp Phe Thr Lys Gln Leu Asp Asp Ala Leu Val Tyr Met Arg Glu Thr
 165 170 175
 Asn Glu Ala Phe Ala Leu Ile Ile Glu Lys Asp Thr Phe Glu Ser Tyr
 180 185 190
 Ser Leu Lys Leu Lys Glu Asp Ser Val Leu Gln Gln Leu Ser Met Ser
 195 200 205
 Arg Glu Asn Ala Ile Gln Met Val Val Asp Ser Ile Gly Lys Lys Asp
 210 215 220
 Val Ile Val Ser Thr Thr Gly Met Ile Ser Arg Glu Leu Phe Glu Tyr
 225 230 235 240
 Arg Thr Lys Met Asn Glu Ser His Gln Ser Asp Phe Leu Thr Val Gly
 245 250 255
 Ser Met Gly His Ala Ser Gln Ile Ala Leu Gly Ile Ala Leu Glu Ile
 260 265 270
 Pro Asp Arg Lys Ile Tyr Cys Phe Asp Gly Asp Gly Ala Val Ile Met
 275 280 285
 His Met Gly Ser Met Ala Ile Ile Gly Asp Lys Gly Pro Glu Asn Leu
 290 295 300
 Ile His Val Val Phe Asn Asn Gly Ser His Asp Ser Val Gly Gly Gln
 305 310 315 320
 Pro Thr Val Gly Leu Lys Ile Asn Ile Pro Ala Ile Ala Arg Ala Val
 325 330 335

Gly	Tyr	Lys	Val	Val	Tyr	Ser	Val	Asp	Cys	Glu	Glu	Ala	Leu	Lys	Thr
			340					345					350		
Ala	Leu	Glu	Lys	Val	Ile	Lys	Glu	Ala	Gly	Pro	Ile	Leu	Leu	Glu	Val
		355					360					365			
Lys	Val	Lys	Lys	Gly	Asn	Arg	Lys	Asp	Leu	Gly	Arg	Pro	Ser	Ile	Thr
	370					375					380				
Pro	Ile	Gln	Asn	Lys	Leu	Ser	Phe	Met	Thr	Phe	Leu	Asn	Asn	Glu	Lys
385					390					395					400
Lys															

<210> 6225

<211> 419

<212> PRT

<213> B.fragilis

<400> 6225

Lys	Ser	Phe	Tyr	Met	Glu	Gln	Ile	Thr	Glu	Lys	Ile	Asn	Asp	Leu	Phe
1				5					10					15	
Val	Ser	Trp	Gly	Phe	Asp	Ser	Ser	Glu	Val	Gly	Pro	Ile	Met	Thr	Leu
			20					25					30		
Val	Leu	Ile	Ile	Gly	Ile	Ala	Phe	Leu	Ala	Asp	Leu	Ile	Cys	Arg	Asn
		35					40					45			
Ile	Leu	Leu	Arg	Val	Val	Ala	Lys	Leu	Val	Lys	Lys	Thr	Lys	Ala	Thr
	50					55					60				
Trp	Asp	Asp	Ile	Val	Phe	Asp	Arg	Lys	Val	Leu	Ile	Tyr	Leu	Ser	His
65					70					75					80
Leu	Val	Pro	Pro	Ile	Ile	Ile	Tyr	Val	Leu	Ile	Pro	Leu	Ala	Ile	Pro
				85					90					95	
Asn	Val	Ser	Ala	Leu	Asp	Phe	Ile	Arg	Arg	Ile	Cys	Met	Ile	Tyr	Ile
			100					105					110		
Ile	Ala	Val	Phe	Leu	Arg	Phe	Ile	Ser	Ala	Phe	Leu	Ser	Ala	Val	Tyr
		115					120					125			
His	Val	Tyr	Ser	Glu	Arg	Glu	Gln	Phe	Arg	Asp	Arg	Pro	Leu	Lys	Gly
	130					135					140				
Leu	Leu	Gln	Thr	Ala	Gln	Val	Ile	Leu	Phe	Phe	Ile	Gly	Gly	Ile	Val
145					150					155					160
Val	Ile	Ser	Val	Leu	Ile	Asp	Lys	Ser	Pro	Met	Val	Leu	Leu	Thr	Gly
				165					170					175	
Leu	Gly	Ala	Ser	Ala	Ala	Ile	Leu	Met	Leu	Val	Phe	Lys	Asp	Ser	Ile
			180					185					190		
Met	Gly	Phe	Val	Ser	Gly	Ile	Gln	Leu	Ser	Ala	Asn	Asn	Met	Leu	Lys
		195					200					205			
Val	Gly	Asp	Trp	Ile	Ala	Met	Pro	Lys	Tyr	Gly	Ala	Asp	Gly	Thr	Val
	210					215					220				
Ile	Glu	Val	Thr	Leu	Asn	Thr	Val	Lys	Val	Arg	Asn	Trp	Asp	Asn	Thr
225					230					235					240
Ile	Thr	Thr	Ile	Pro	Pro	Tyr	Leu	Leu	Val	Ser	Asp	Ser	Phe	Gln	Asn
				245					250					255	
Trp	Arg	Gly	Met	Gln	Glu	Ser	Gly	Gly	Arg	Arg	Val	Lys	Arg	Ser	Ile
			260					265					270		
Asn	Ile	Asp	Met	Asn	Ser	Val	Arg	Phe	Cys	Thr	Pro	Glu	Met	Leu	Ala
		275					280					285			
Lys	Tyr	Lys	Lys	Ile	Gln	Leu	Leu	Thr	Asp	Tyr	Val	Glu	Gln	Thr	Glu
	290					295					300				
Gln	Val	Val	Lys	Glu	Tyr	Asn	Lys	Glu	His	His	Ile	Asp	Asn	Ser	Ile
305					310					315					320
Leu	Val	Asn	Gly	Arg	Arg	Gln	Thr	Asn	Leu	Gly	Val	Phe	Arg	Ala	Tyr
				325					330					335	

Leu Thr Asn Tyr Leu Lys Ser Leu Pro Asp Val Asn Lys Asn Leu Thr
 340 345 350
 Cys Met Val Arg Tyr Leu Gln Pro Thr Glu Gln Gly Ile Pro Val Glu
 355 360 365
 Leu Tyr Phe Phe Ser Ala Val Lys Glu Trp Val Pro Tyr Glu Gly Ile
 370 375 380
 Gln Ala Asp Val Phe Asp His Leu Leu Ala Ile Val Pro Glu Phe Gly
 385 390 395 400
 Leu Arg Val Phe Gln Asn Pro Thr Gly Glu Asp Phe Arg Glu Trp Asn
 405 410 415
 Arg Arg Asn

<210> 6226
 <211> 279
 <212> PRT
 <213> B.fragilis

<400> 6226
 Ala Lys Phe Leu Phe Phe Ser Arg Arg Ser Glu Asp Leu Ser Leu Ile
 1 5 10 15
 Ser Leu Pro Ile Asn Leu Asp Asn Met Gly Lys Ile Ile Ala Leu Ala
 20 25 30
 Asn Gln Lys Gly Gly Val Gly Lys Thr Thr Thr Thr Ile Asn Leu Ala
 35 40 45
 Ala Ser Leu Ala Thr Leu Glu Lys Lys Val Leu Val Val Asp Ala Asp
 50 55 60
 Pro Gln Ala Asn Ala Ser Ser Gly Leu Gly Val Asp Ile Lys Gln Ser
 65 70 75 80
 Glu Cys Thr Ile Tyr Glu Cys Ile Ile Asp Arg Ala Asn Val Gln Asp
 85 90 95
 Ala Ile His Asp Thr Glu Ile Asp Ser Leu Lys Val Ile Ser Ser His
 100 105 110
 Ile Asn Leu Val Gly Ala Glu Ile Glu Met Leu Asn Leu Lys Asn Arg
 115 120 125
 Glu Lys Ile Leu Lys Glu Val Leu Thr Pro Leu Lys Glu Glu Tyr Asp
 130 135 140
 Tyr Ile Leu Ile Asp Cys Ser Pro Ser Leu Gly Leu Ile Thr Ile Asn
 145 150 155 160
 Ala Leu Thr Ala Ala Asp Ser Val Ile Ile Pro Val Gln Ala Glu Tyr
 165 170 175
 Phe Ala Leu Glu Gly Ile Ser Lys Leu Leu Asn Thr Ile Lys Ile Ile
 180 185 190
 Lys Ser Lys Leu Asn Pro Ala Leu Glu Ile Glu Gly Phe Leu Leu Thr
 195 200 205
 Met Tyr Asp Ser Arg Leu Arg Gln Ala Asn Gln Ile Tyr Asp Glu Val
 210 215 220
 Lys Arg His Phe Gln Glu Leu Val Phe Lys Thr Val Ile Gln Arg Asn
 225 230 235 240
 Val Lys Leu Ser Glu Ala Pro Ser Tyr Gly Leu Pro Thr Ile Leu Tyr
 245 250 255
 Asp Ala Glu Ser Thr Gly Ala Lys Asn His Leu Ala Leu Ala Lys Glu
 260 265 270
 Leu Ile Ser Arg Asn Ser Lys
 275

<210> 6227
 <211> 204
 <212> PRT

<213> B.fragilis

<400> 6227

Val Gly Met Tyr Gln Tyr Val Ile Lys Arg Leu Ile Asp Phe Val Val
 1 5 10 15
 Val Phe Phe Val Leu Ile Ile Ile Trp Pro Val Leu Leu Leu Val Thr
 20 25 30
 Leu Trp Leu His Phe Ala Asn Lys Gly Ala Gly Thr Phe Phe Leu Gln
 35 40 45
 Glu Arg Pro Gly Arg His Gly Lys Ile Phe Lys Val Ile Lys Phe Lys
 50 55 60
 Thr Met Thr Asp Glu Arg Asp Ala Glu Gly Asn Leu Leu Pro Asp Asp
 65 70 75 80
 Lys Arg Leu Thr Lys Val Gly Lys Phe Val Arg Ser Thr Ser Ile Asp
 85 90 95
 Glu Leu Pro Gln Leu Ile Asn Ile Leu Lys Gly Asp Met Ser Phe Ile
 100 105 110
 Gly Pro Arg Pro Leu Leu Pro Gln Tyr Leu Pro Leu Tyr Asn Lys Glu
 115 120 125
 Gln Ala Arg Arg His Glu Val Arg Pro Gly Ile Thr Gly Trp Ala Gln
 130 135 140
 Val Asn Gly Arg Asn Ala Ile Ser Trp Val Arg Lys Phe Glu Leu Asp
 145 150 155 160
 Val Trp Tyr Val Asp His Cys Ser Phe Phe Leu Asp Leu Lys Ile Phe
 165 170 175
 Phe Leu Thr Ile Lys Lys Val Phe Val Arg Glu Gly Ile Ser Ser Asp
 180 185 190
 Thr Ser Val Thr Met Glu Pro Phe Thr Gly Asn Asn
 195 200

<210> 6228

<211> 355

<212> PRT

<213> B.fragilis

<400> 6228

Ser Ser Met Gln Ile Phe Cys Thr Leu Phe Asn Val Ala Tyr Leu Asp
 1 5 10 15
 Lys Ala Ile Thr Met Tyr Asn Ser Leu Glu Arg Val Ser Ser Glu Phe
 20 25 30
 Thr Leu Tyr Ala Leu Ala Met Asp Asp Arg Cys Tyr Glu Ile Leu Val
 35 40 45
 Asp Leu Asn Phe Arg Asn Leu Lys Pro Ile Lys Leu Ser Asp Phe Glu
 50 55 60
 Asp Asp Asp Leu Leu Lys Val Lys Ser Asp Arg Thr Phe Gly Glu Tyr
 65 70 75 80
 Cys Trp Thr Cys Ser Ser Ser Leu Ile Ser Tyr Val Leu His Glu Tyr
 85 90 95
 Cys Glu Pro His Cys Thr Tyr Ile Asp Ala Asp Ile Tyr Phe Phe Ser
 100 105 110
 Asp Pro Ile Val Leu Met Asn Glu Met Leu His Lys Asn Ala Ser Val
 115 120 125
 Leu Ile Val Gly His Arg Phe Asn Asp Tyr Asn Arg Asp Leu Met Cys
 130 135 140
 Arg Thr Val Gly Lys Tyr Cys Val Gln Tyr Asn Thr Phe Leu Asn Asp
 145 150 155 160
 Glu Asn Gly Asn Ile Leu Leu Glu Ile Trp Arg Arg Gln Cys Ile Thr
 165 170 175
 His Cys Ser Cys Asp Gly Asp Gly Val Tyr Trp Gly Asp Gln Lys Tyr

225		230		235		240									
Ser	Ile	Gly	Thr	Ile	Ala	Tyr	Leu	Ser	Arg	Thr	Gln	Gly	Ala	Ser	Val
				245					250					255	
Val	Ile	Asn	Tyr	Phe	Phe	Gly	Ile	Ile	Val	Asn	Gly	Ala	Phe	Ala	Ile
				260					265					270	
Val	Phe	Gln	Ile	Glu	Asn	Phe	Ile	Met	Met	Phe	Val	Asn	Asn	Leu	Gly
				275					280					285	
Thr	Ala	Ser	Asp	Pro	Gln	Ile	Thr	Gln	Ser	Tyr	Ala	Ser	Gly	Asn	Tyr
				290					295					300	
Arg	Asp	Ala	Phe	Ser	Leu	Val	Glu	Lys	Ile	Ser	Lys	Tyr	Ser	Met	Phe
305					310					315					320
Ile	Met	Leu	Leu	Val	Thr	Phe	Ser	Ile	Gly	Val	Glu	Leu	Glu	Phe	Leu
				325					330					335	
Leu	Arg	Leu	Trp	Leu	Gly	Thr	Leu	Pro	Glu	Gly	Ile	Leu	Val	Leu	Ser
				340					345					350	
Arg	Trp	Met	Leu	Val	Ser	Leu	Leu	Val	Arg	Ser	Ile	Asn	Ser	Ser	Cys
				355					360					365	
Gly	Ser	Ile	Ile	Gln	Ala	Ser	Gly	His	Val	Lys	Trp	Phe	Gln	Ile	Ile
				370					375					380	
Ser	Ser	Val	Leu	Leu	Leu	Leu	Gly	Leu	Pro	Ile	Ser	Trp	Leu	Leu	Tyr
385					390					395					400
Lys	Trp	Gly	Met	Pro	Pro	Val	Thr	Ile	Ile	Ile	Thr	Phe	Thr	Val	Thr
				405					410					415	
Asp	Phe	Ile	Ser	Arg	Met	Ile	Tyr	Leu	Trp	Leu	Met	His	Arg	Ile	Ile
				420					425					430	
Lys	Phe	Asp	Val	Leu	His	Phe	Ser	Lys	Lys	Val	Phe	Leu	Pro	Val	Ile
				435					440					445	
Lys	Val	Leu	Cys	Leu	Ser	Gly	Leu	Tyr	Leu	Tyr	Leu	Tyr	Asn	Ser	Ile
				450					455					460	
Met	Leu	Gln	Thr	Asp	Phe	Met	Arg	Val	Met	Gly	Ile	Gly	Val	Ser	Cys
465					470					475					480
Met	Phe	Tyr	Val	Cys	Leu	Cys	Leu	Phe	Val	Gly	Met	Asn	Arg	Leu	Glu
				485					490					495	
Arg	Asn	Ser	Ile	Phe	Phe	Tyr	Ile	Lys	Asn	Lys	Ile				
				500					505						

<210> 6230

<211> 345

<212> PRT

<213> B.fragilis

<400> 6230

His	Leu	Thr	Lys	Thr	Arg	Pro	Met	Ala	Ile	Ser	Leu	Lys	Asp	Asn	Leu
1				5					10					15	
Thr	Ser	Ser	Tyr	Phe	Asn	Ala	Ala	His	Lys	Leu	Tyr	Ser	Lys	Lys	Ala
				20					25					30	
Arg	Arg	Arg	Ile	Val	Ala	Tyr	Val	Glu	Ser	Tyr	Asp	Asp	Val	Ala	Phe
				35					40					45	
Trp	Arg	Thr	Leu	Leu	Glu	Glu	Phe	Glu	Asp	Glu	Glu	His	Tyr	Phe	Gln
				50					55					60	
Val	Met	Leu	Pro	Ser	Ala	Thr	Ser	Leu	Ala	Lys	Gly	Lys	Lys	Met	Val
65					70					75					80
Leu	Met	Asn	Thr	Leu	Asn	Thr	Ala	Glu	Leu	Gly	Lys	Ser	Leu	Ile	Ala
				85					90					95	
Cys	Val	Asp	Ser	Asp	Tyr	Asp	Phe	Leu	Leu	Gln	Gly	Ala	Thr	Ala	Thr
				100					105					110	
Ser	Arg	Lys	Ile	Asn	Arg	Asn	Arg	Tyr	Ile	Phe	Gln	Thr	Tyr	Ala	Tyr
				115					120					125	
Ala	Ile	Glu	Asn	Tyr	His	Cys	Tyr	Ala	Asp	Ser	Leu	His	Glu	Val	Cys

130	135	140
Val Gln Ala Thr Leu	Asn Asp Arg His Leu	Ile Asp Phe Asn Glu Phe
145	150	155
Met Lys Arg Tyr Ser	Gln Ile Ala Tyr Pro	Leu Phe Leu Trp Ser Val
	165	170
Trp Phe Tyr Arg Arg	His Asp Thr Tyr Thr	Phe Thr Met Ser Glu Phe
	180	185
Asn Ala Cys Val Arg	Leu His Asp Val Ser	Leu Arg His Pro Glu Arg
	195	200
Ser Leu Glu Ala Val	Arg Arg Ser Val Thr	Ser Lys Leu Ser Glu Leu
	210	215
Ser Thr Arg Phe Pro	Gln Gly Ile Glu Glu	Val Asp Lys Leu Ser Val
225	230	235
Glu Leu Lys Gly Leu	Gly Val Leu Pro Asp	Thr Thr Tyr Leu Phe Ile
	245	250
Gln Gly His His Ile	Met Asp Asn Val Val	Met Lys Val Leu Thr Pro
	260	265
Val Cys Thr Ala Leu	Arg Arg Glu Arg Glu	Gln Glu Ile Lys Lys Leu
	275	280
Ala Glu His Asp Glu	Gln Phe His Asn Glu	Leu Thr Cys Tyr Gln Asn
290	295	300
Ser Gln Val Asn Val	Glu Val Met Leu Arg	Lys Asn Ser Ala Tyr Lys
305	310	315
Asp Leu Tyr Leu Tyr	Gln Trp Leu Lys Glu	Asp Ile Lys Glu Phe Leu
	325	330
Tyr Gly Thr Asp Asn	Arg Lys Asn Lys	
	340	345

<210> 6231

<211> 254

<212> PRT

<213> B.fragilis

<400> 6231

Ser Gln Thr Lys Ala	Gln His Phe Met	Lys Asn Arg His	Tyr Leu Arg
1	5	10	15
His Ile Leu Ala Ile	Thr Ala Leu Leu	Phe Asn Gly Glu	Ala Ile Tyr
	20	25	30
Ser Gln Thr Tyr Pro	Ile Glu Asn Tyr	Leu Lys Ala Ala	Gly Asp Tyr
	35	40	45
Val Thr Ile Tyr Asn	Gly Glu Ile Glu	Leu Thr Tyr Ser	Leu Ala Gln
	50	55	60
Tyr Asp Asn Leu Pro	Tyr Phe Gln Gly	Asp Glu Phe Thr	Thr Gly Glu
65	70	75	80
Ile Ile Phe Lys Gly	Asn Arg Tyr Pro	Gly Leu Asp Leu	His Leu Asp
	85	90	95
Leu His Lys Asp Gln	Leu Cys Ala Leu	Thr Pro Asp Ser	His Tyr Ser
	100	105	110
Met Ile Ile Asn Asn	Glu Gly Ile Glu	Gln Val Asn Leu	His Asn Thr
	115	120	125
Thr Phe Ile Tyr Phe	Arg Pro Thr Lys	Lys Thr Asp Leu	Asn Lys Gly
	130	135	140
Phe Tyr Glu Leu Leu	Gln Asp Gly Lys	Arg Leu Arg Leu	Leu Ala Arg
145	150	155	160
Lys Thr Tyr Ser Val	Ala Gln Ile Asn	Val Glu Lys Ile	Ala Lys Thr
	165	170	175
Arg Lys His Gln Thr	Glu Tyr Phe Ile	Tyr Gly Val Lys	Tyr Tyr Leu
	180	185	190
Glu Tyr Asn Gly Ile	Tyr Tyr Pro Val	Ser Asn Asn Lys	Ser Phe Ala

195 200 205
 Lys Ile Phe Pro Glu Gln His Lys Leu Ile Lys Arg Tyr Ala Arg Lys
 210 215 220
 His Lys Leu Asn Phe Arg His Asp Ala Asp Ala Ser Leu Ile Ala Leu
 225 230 235 240
 Thr Asn Phe Cys Glu Glu Leu Ile Asp Gln Lys Gln Thr Arg
 245 250

<210> 6232
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 6232
 Asn His Tyr Asn Met Lys Lys Leu Lys Ser Pro Ala Ser Gln Ser Glu
 1 5 10 15
 Ala Met Lys Leu Arg Trp Lys Lys Arg Ile Val Phe Glu Lys Gly Tyr
 20 25 30
 Thr Glu Ser Cys Ala Glu Trp Met Ala Glu Arg Leu Glu Ala Leu Leu
 35 40 45
 Asp His Met Gln Tyr Gly His Ala Thr Val Ala Tyr Arg Lys Gln Asn
 50 55 60
 Gly Ser Phe Gln Leu Val Lys Ala Thr Leu Ile Tyr Tyr Glu Ala Glu
 65 70 75 80
 Phe Arg Lys Lys Tyr Asp Pro Thr Lys Ile Glu Gly Ala Val Val Tyr
 85 90 95
 Trp Asn Val Asp Glu Gln Arg Trp Thr Thr Phe Gln Val Glu Asn Phe
 100 105 110
 Met Glu Trp Arg Pro Val Val
 115

<210> 6233
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 6233
 Met Lys Asn Lys Glu Leu Gly Met Lys Lys Leu Ile Lys Lys Ala Leu
 1 5 10 15
 Lys Leu Ile Leu Pro Leu Val Leu Gly Gly Phe Ile Leu Tyr Trp Val
 20 25 30
 Tyr Arg Asp Phe Asp Phe Val Lys Ala Met Glu Val Leu Gln His Gly
 35 40 45
 Thr Asn Trp Trp Trp Met Ala Phe Ser Leu Leu Phe Gly Ile Phe Ala
 50 55 60
 Gln Val Phe Arg Gly Trp Arg Trp Arg Gln Thr Leu Glu Pro Leu Gly
 65 70 75 80
 Ala Phe Pro Arg Arg Arg Asp Cys Val Asp Ala Ile Phe Ile Ser Tyr
 85 90 95
 Ala Ala Ser Leu Val Val Pro Arg Val Gly Glu Val Ser Arg Cys Gly
 100 105 110
 Val Leu Ala Lys Tyr Asp Asn Val Ser Phe Ala Lys Ser Leu Gly Thr
 115 120 125
 Val Val Thr Glu Arg Leu Val Asp Thr Val Thr Ile Leu Leu Ile Thr
 130 135 140
 Gly Val Thr Val Leu Leu Gln Met Pro Val Phe Val Thr Phe Leu Glu
 145 150 155 160
 Gln Thr Gly Thr Lys Ile Pro Ser Phe Met His Leu Leu Thr Ser Val
 165 170 175

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<210> 6234
<211> 444
<212> PRT
<213> B.fragilis
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<400> 6234															
Ile	Leu	Cys	Lys	Met	Glu	Lys	Cys	Lys	Lys	Val	Tyr	Val	Gly	Met	Ser
1				5					10					15	
Ala	Asp	Met	Ile	His	Pro	Gly	His	Leu	Asn	Ile	Ile	Arg	Glu	Ala	Ser
			20					25					30		
Lys	Leu	Gly	Ser	Val	Thr	Val	Gly	Val	Leu	Thr	Asp	Ala	Ala	Ile	Ala
		35					40					45			
Ser	Tyr	Lys	Arg	Leu	Pro	Tyr	Leu	Asp	Tyr	Glu	Gln	Arg	Ala	Glu	Ile
	50					55				60					
Val	Lys	Ser	Ile	Lys	Gly	Val	Asp	Ser	Val	Ile	Pro	Gln	Glu	Thr	Leu
65					70					75					80
Asp	Tyr	Val	Pro	Asn	Leu	Glu	Lys	Leu	Arg	Pro	Asp	Tyr	Val	Val	His
				85					90					95	
Gly	Asp	Asp	Trp	Ile	Asp	Gly	Val	Gln	Ser	Asn	Thr	Arg	Lys	Arg	Val
			100					105					110		
Ile	Lys	Cys	Leu	Leu	Glu	Trp	Gly	Lys	Val	Val	Val	Asp	Ile	Ala	Tyr
		115					120					125			
Thr	Lys	Gly	Phe	Ser	Ser	Thr	Ala	Met	Asn	Glu	Arg	Ile	Lys	Glu	Ile
	130					135					140				
Gly	Thr	Thr	Pro	Glu	Ile	Arg	Gln	Lys	Arg	Leu	Arg	Arg	Leu	Ile	Asn
145				150						155					160
Ala	Lys	Pro	Ile	Val	Arg	Ile	Leu	Glu	Ser	His	Asn	Gly	Leu	Thr	Gly
				165					170					175	
Leu	Ile	Ala	Glu	Asn	Ala	Ser	Val	Ile	Ile	Asn	Gly	Val	Lys	His	Glu
			180					185					190		
Phe	Asp	Gly	Met	Trp	Ser	Ser	Ser	Leu	Thr	Asp	Ser	Thr	Ser	Lys	Gly
	195						200					205			
Lys	Pro	Asp	Ile	Glu	Ala	Val	Asp	Leu	Thr	Thr	Arg	Leu	His	Asp	Leu
	210					215					220				
Asn	Asp	Thr	Leu	Glu	Cys	Thr	Thr	Lys	Pro	Val	Ile	Phe	Asp	Gly	Asp
225				230						235					240
Thr	Gly	Gly	Lys	Val	Glu	His	Phe	Val	Phe	Thr	Val	Arg	Thr	Leu	Glu
			245						250					255	

2900

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Arg Leu Gly Ile Ser Ala Ile Ile Ile Glu Asp Lys Ile Gly Leu Lys
    260                      265                      270
Gln Asn Ser Leu Phe Gly Thr Asp Ala Val Gln Thr Gln Asp Ser Ile
    275                      280                      285
Glu Ser Phe Cys His Lys Ile Arg Ser Gly Lys Asn Ala Gln Val Thr
    290                      295                      300
Asp Ser Phe Met Ile Ile Ala Arg Ile Glu Ser Leu Ile Ala Gly Lys
    305                      310                      315                      320
Ser Met Glu Asp Ala Leu Glu Arg Ala Ala Ala Tyr Val Lys Ala Gly
    325                      330                      335
Ala Asp Gly Val Met Ile His Ser Lys Asp Lys Ser Gly Met Asp Ile
    340                      345                      350
Lys Asn Phe Cys Thr Cys Phe Arg Lys Ile Asp Ser Thr Thr Pro Ile
    355                      360                      365
Val Ala Val Pro Thr Thr Tyr Asn Gln Phe Thr Glu Ser Glu Leu Ala
    370                      375                      380
Ser Trp Gly Ile Asn Val Val Ile Tyr Ala Asn His Met Leu Arg Ser
    385                      390                      395                      400
Ala Tyr Pro Ala Met Leu Asp Cys Ala Lys Ser Ile Leu Thr His Glu
    405                      410                      415
Arg Ser Leu Glu Ala Ser Asn Asp Tyr Cys Met Pro Ile Lys Glu Ile
    420                      425                      430
Leu Glu Leu Ile Pro Gly Thr Lys Ala Leu Lys Arg
    435                      440

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<210> 6235

<211> 383

<212> PRT

<213> B.fragilis

<400> 6235

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Thr Glu Ile Leu Gly Ile Met Lys Tyr Tyr Leu Ile Val Gly Glu Ala
1      5      10      15
Ser Gly Asp Leu His Ala Ser His Leu Met Ala Ala Leu Lys Glu Glu
    20      25      30
Asp Pro Glu Ala Glu Phe Arg Phe Gly Gly Asp Leu Met Ala Ala
    35      40      45
Val Gly Gly Thr Met Val Lys His Tyr Lys Glu Leu Ala Tyr Met Gly
    50      55      60
Phe Ile Pro Val Leu Leu His Leu Thr Thr Ile Phe Ala Asn Met Lys
    65      70      75      80
Arg Cys Lys Glu Asp Ile Val Ala Trp Ser Pro Asp Val Val Ile Leu
    85      90      95
Val Asp Tyr Pro Gly Phe Asn Leu Asp Ile Ala Lys Phe Val His Ala
    100     105     110
Lys Thr Lys Ile Pro Val Tyr Tyr Tyr Ile Ser Pro Lys Ile Trp Ala
    115     120     125
Trp Lys Glu Tyr Arg Ile Lys Asn Ile Lys Arg Asp Val Asp Glu Leu
    130     135     140
Phe Ser Ile Leu Pro Phe Glu Val Gly Phe Phe Lys Gly His Arg Tyr
    145     150     155     160
Pro Ile His Tyr Val Gly Asn Pro Thr Val Asp Glu Val Thr Ala Phe
    165     170     175
Lys Ala Ser His Gln Glu Ser Phe Ala Asp Phe Ile Ala Asp Ser Glu
    180     185     190
Leu Ala Asp Lys Pro Ile Ile Ala Leu Leu Ala Gly Ser Arg Lys Gln
    195     200     205
Glu Ile Lys Asp Asn Leu Pro Asp Met Ile Arg Ala Ala Ser Ala Phe
    210     215     220

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Pro Gly Tyr Gln Leu Val Leu Ala Ala Ala Pro Gly Ile Ser Pro Glu
225          230          235          240
Tyr Tyr Ala Lys Phe Val Lys Gly Thr Glu Leu Ala Val Ile Phe Asp
          245          250          255
Arg Thr Tyr Arg Leu Leu Gln Gln Ala Asp Val Ala Leu Val Thr Ser
          260          265          270
Gly Thr Ala Thr Leu Glu Thr Ala Leu Phe Arg Val Pro Gln Val Val
          275          280          285
Cys Tyr His Thr Pro Val Gly Lys Leu Val Ser Phe Leu Arg Arg His
          290          295          300
Ile Leu Lys Val Lys Phe Ile Ser Leu Val Asn Leu Ile Ala Gly Arg
305          310          315          320
Glu Val Val Arg Glu Leu Val Ala Asp Thr Met Thr Val Glu Asn Met
          325          330          335
Arg Ala Glu Leu Glu Cys Leu Leu Phe Arg Glu Asp Tyr Arg Arg Lys
          340          345          350
Met Leu Asp Gly Tyr Glu Glu Met Ala Arg Leu Leu Gly Pro Ala Gly
          355          360          365
Ala Pro Arg His Ala Ala Arg Glu Met Val Lys Leu Leu Lys Lys
          370          375          380

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<210> 6236

<211> 284

<212> PRT

<213> B.fragilis

<400> 6236

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Lys Arg Asn Asn Thr Leu Lys Asn Asn Phe Leu Gln Arg Ala Ile Thr
1          5          10          15
Gly Ile Leu Phe Val Ala Ile Ile Val Gly Cys Ile Leu Tyr Asp Pro
          20          25          30
Leu Ala Phe Gly Thr Leu Phe Val Ile Val Ser Ala Leu Thr Ile Arg
          35          40          45
Glu Phe Gly His Leu Val Asn Gln Ser Gly Glu Val Ser Ile Asn Arg
          50          55          60
Thr Ile Thr Met Leu Gly Gly Ala Tyr Leu Phe Leu Ala Ile Met Gly
65          70          75          80
Phe Cys Ile Asp Ala Ala Gly Ser Lys Ile Phe Ile Pro Tyr Leu Ile
          85          90          95
Leu Ile Ile Tyr Leu Met Val Ser Glu Leu Tyr Leu Lys Lys Lys Asn
          100          105          110
Pro Val Leu Asn Trp Ala Tyr Ser Met Leu Ser Gln Met Tyr Ile Ala
          115          120          125
Leu Pro Phe Ala Met Leu Asn Val Leu Ala Phe Gln Asn Asp Pro Glu
          130          135          140
Ala Ser Ser Val Ser Tyr Asn Pro Ile Leu Pro Leu Ser Ile Phe Val
145          150          155          160
Phe Leu Trp Leu Asn Asp Thr Gly Ala Tyr Cys Phe Gly Ser Leu Phe
          165          170          175
Gly Lys His Arg Leu Phe Glu Arg Ile Ser Pro Lys Lys Ser Trp Glu
          180          185          190
Gly Ser Ile Gly Gly Gly Ile Val Ala Ile Ala Ser Ser Phe Val Phe
          195          200          205
Ala Cys Tyr Phe Pro Ile Met Thr Trp Ala Glu Trp Ala Gly Leu Ala
          210          215          220
Leu Val Val Val Ile Phe Gly Thr Trp Gly Asp Leu Thr Glu Ser Leu
225          230          235          240
Leu Lys Arg Gln Leu Gln Ile Lys Asp Ser Gly Ser Ile Leu Pro Gly
          245          250          255

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His Gly Gly Met Leu Asp Arg Phe Asp Ser Ser Leu Met Ala Ile Pro
 260 265 270
 Ala Gly Val Ile Tyr Leu Tyr Ala Leu Thr Leu Val
 275 280

<210> 6237
 <211> 314
 <212> PRT
 <213> B.fragilis

<400> 6237
 Lys Lys Leu Lys Lys Cys Val Ile Phe Val Ala Asn Asn Thr Ile Leu
 1 5 10 15
 Ala Met Asn Ala Leu Gln Ser Asn Ile Ile Arg Glu Ile Thr Pro Leu
 20 25 30
 Ser Asp Lys Asp Cys Phe Tyr Ile Ala Glu Arg Tyr Lys Thr Glu Phe
 35 40 45
 Thr Tyr Pro Ile His Asn His Ala Glu Phe Glu Leu Asn Phe Thr Glu
 50 55 60
 Lys Ala Ala Gly Val Arg Arg Ile Val Gly Asp Ser Ala Glu Val Ile
 65 70 75 80
 Ser Asp Tyr Asp Leu Val Leu Ile Thr Gly Lys Asp Leu Glu His Val
 85 90 95
 Trp Glu Gln His Asp Cys His Ser Lys Glu Ile Arg Glu Ile Thr Ile
 100 105 110
 Gln Phe Ser Ser Asp Leu Phe Phe Lys Ser Phe Ile Asn Lys Asn Gln
 115 120 125
 Phe Asp Ser Ile Arg Asp Met Leu Glu Lys Ala Gln Lys Gly Leu Cys
 130 135 140
 Phe Pro Met Ser Ala Ile Leu Lys Ile Tyr Pro Leu Leu Asp Thr Leu
 145 150 155 160
 Ala Ser Glu Lys Gln Gly Phe Tyr Ala Val Ile Lys Phe Leu Thr Ile
 165 170 175
 Leu Tyr Glu Leu Ser Leu Phe Asn Glu Glu Ala Arg Thr Leu Ser Ser
 180 185 190
 Ser Ser Phe Ala Lys Ile Gly Ile His Ser Asp Ser Arg Arg Val Gln
 195 200 205
 Lys Val Gln Glu Tyr Ile Asn Ala His Tyr Gln Glu Ile Arg Leu
 210 215 220
 Asn Gln Leu Ala Asp Met Val Gly Met Thr Pro Val Ser Phe Ser Arg
 225 230 235 240
 Phe Phe Lys Leu Arg Thr Gly Lys Asn Leu Ser Asp Tyr Ile Ile Asp
 245 250 255
 Ile Arg Leu Gly Phe Ala Ala Arg Leu Leu Val Asp Ser Thr Met Ser
 260 265 270
 Ile Ala Glu Ile Cys Tyr Glu Cys Gly Phe Asn Asn Leu Ser Asn Phe
 275 280 285
 Asn Arg Ile Phe Lys Lys Lys Lys Glu Cys Ser Pro Lys Glu Phe Arg
 290 295 300
 Glu Asn Tyr Arg Lys Lys Lys Lys Leu Val
 305 310

<210> 6238
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 6238
 Leu Lys Gln Lys Glu Ala Ile Met Lys Arg Ile Phe Thr Leu Tyr Leu

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1           5           10           15
Phe Ile Leu Phe Cys Leu Ile Leu Gln Ala Gln Glu Glu Leu Tyr Glu
20           25           30
Arg Val Tyr Val His Thr Asp Lys Thr Cys Tyr Leu Ala Gly Glu Glu
35           40           45
Val Trp Leu Lys Phe Tyr Thr Ile Asp Thr His Phe Arg Pro Ser Ser
50           55           60
Phe Ser Lys Val Gly Tyr Ile Glu Ile Ser Asn Thr Glu Arg Pro Lys
65           70           75           80
Ala Gln Leu Lys Leu Ala Leu Asp Asn Gly Ser Gly Ser Gly Lys Val
85           90           95
Lys Ile Pro Thr Asp Ala Pro Ser Gly Ile Leu
100           105

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<210> 6239

<211> 288

<212> PRT

<213> B.fragilis

<400> 6239

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Met Ala Lys Lys Thr Lys Ile Tyr Pro Leu Tyr Ile Ala Leu Leu Leu
1           5           10           15
Cys Phe Phe Gln Val Ala Gly Ile Asp Val Tyr Ala Gln Glu Pro Val
20           25           30
Lys Val Ser Gln Asp Ser Ile Ser Pro Val Arg Glu Ala Pro Lys Ala
35           40           45
Arg Ala Arg Arg His Arg Glu Pro Val Val Ser Thr Pro Ala Thr Asp
50           55           60
Ser Val Lys Val Glu Lys Ala Val Val Leu Pro Pro Ile Asp Ser Leu
65           70           75           80
Glu Asn Leu Lys Pro Ala Ile Val Thr Ala Asp Ser Leu Glu Glu Val
85           90           95
Asn Arg Gln Asn Leu Glu Arg Ile Glu Thr Pro Val Met Pro Ser Val
100           105           110
Val Lys Ala Asp Ser Leu Pro Pro Val Met Pro Lys Lys Leu Phe Val
115           120           125
Pro Asn Pro Thr Lys Ala Thr Trp Tyr Ala Ile Val Phe Pro Gly Gly
130           135           140
Gly Gln Ile Tyr Asn Arg Lys Tyr Trp Lys Leu Pro Ile Ile Tyr Gly
145           150           155           160
Gly Phe Ala Gly Cys Ala Tyr Ala Leu Ser Trp Asn Gly Lys Met Tyr
165           170           175
Lys Asp Tyr Ala Gln Ala Tyr Met Asp Ile Met Asp Asn Asn Pro Asn
180           185           190
Thr Asn Ser Phe Gln Asp Leu Leu Pro Pro Asn His Asn Tyr Thr Asp
195           200           205
Thr Gln Leu Lys Asp Leu Leu Arg Lys Arg Lys Asp Thr Tyr Arg Arg
210           215           220
Tyr Arg Asp Leu Ser Ile Phe Ala Val Ile Gly Val Tyr Leu Ile Ser
225           230           235           240
Ile Ile Asp Ala Tyr Val Asp Ala Glu Leu Ser Asn Phe Asp Ile Ser
245           250           255
Pro Asp Leu Ser Met Arg Val Glu Pro Thr Ile Ile Asn Asn Asn Pro
260           265           270
Leu Gln Pro Gly Ser Lys Ser Val Gly Val Gln Cys Ser Leu Arg Phe
275           280           285

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<210> 6240

<211> 401

<212> PRT

<213> B.fragilis

<400> 6240

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Leu Tyr Met Lys Leu Leu Tyr Ile Gly Ala Phe Cys Glu Pro Ser Thr
1          5          10          15
Asp Phe Leu Ile Arg Lys Arg Thr Lys Gly His Ile Thr Val Ser Ala
20          25          30
Thr Thr Phe Gln Lys Ala Leu Leu Ser Gly Phe Glu Asn Leu Glu Lys
35          40          45
Lys Leu Asp Tyr Ile Ile Asn Ile Pro Asp Ile Gly Ser Phe Pro Leu
50          55          60
Arg Cys Asn Asn Pro Phe Phe Ser Arg Thr Asn Phe Gln Phe Ala Phe
65          70          75          80
Met Lys Gly Val Asn Gly Ser Phe Leu Asn Ile Thr Tyr Leu Lys Lys
85          90          95
Tyr Ser Ile Tyr Gln Ser Val Ile Asn Glu Ala Lys Arg Trp Leu Asn
100         105         110
Leu His Arg Asp Glu Glu Val Thr Ile Ile Val Tyr Ser Leu Met Tyr
115         120         125
Pro Tyr Leu Lys Ala Ala Ile Asp Leu Lys Lys His Tyr Ser Asn Met
130         135         140
Lys Val Cys Cys Ile Val Leu Asp Leu Pro Glu Tyr Phe Gly Asp Asn
145         150         155         160
Ser Ser Ile Leu His Arg Val Leu Glu Ala Arg Asn Thr Asn Lys Ile
165         170         175
Tyr Ser Leu Val Gln Glu Ile Asp Ser Phe Ile Leu Leu Thr Glu Phe
180         185         190
Met Lys Asp Lys Leu Arg Val Gly Ile Arg Pro Trp Tyr Leu Leu Glu
195         200         205
Gly Ile Tyr Ser Pro Val Glu Val Ala Leu Gln Lys Lys Arg Arg Lys
210         215         220
Thr Ile Leu Tyr Thr Gly Lys Leu Asp Ala Arg Phe Gly Ile Arg Asp
225         230         235         240
Leu Ile Glu Ser Phe Ile Lys Ile Asp Asp Arg Glu Phe Ser Leu Trp
245         250         255
Ile Cys Gly Phe Gly Thr Asp Arg Ala Phe Val Glu Thr Ala Ala Lys
260         265         270
Asn Asp Cys Arg Ile Thr Tyr Trp Gly Leu Val Asp Gln Lys Arg Val
275         280         285
Phe Glu Met Gln Gln Gln Ala Thr Leu Leu Ile Asn Pro Arg Lys Gly
290         295         300
Asp Ala Glu Tyr Thr Lys Tyr Ser Phe Pro Ser Lys Thr Met Glu Tyr
305         310         315         320
Met Ala Ser Gly Thr Pro Thr Ile Met Tyr Lys Leu Pro Gly Leu Pro
325         330         335
Ala Asn Tyr Leu Asn His Leu Ile Leu Ile Pro Asp His Ser Arg Glu
340         345         350
Thr Leu Thr Thr Leu Leu Lys Glu Trp Gly Asn Lys Gly Gln Asp Glu
355         360         365
Leu Asp Asp Phe Gly Lys His Ala Arg Gln Phe Ile Leu Asp Asn Lys
370         375         380
Asn Ser Glu Asn Gln Ala Arg Arg Leu Leu Glu Phe Leu Val Asn Lys
385         390         395         400
Thr

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<210> 6241

<211> 342

<212> PRT

<213> B.fragilis

<400> 6241

```

Asp Met Lys Lys Lys Lys Ile Leu Phe Tyr Ser Ser Val Arg Ser Leu
1      5      10      15
Glu Leu Leu Asn Thr Gln Lys Phe Tyr Gln Ile Asp Ile Ala Leu Leu
20     25     30
Arg Asn Leu Gly Tyr Asp Val Cys Leu Ser Asn Arg Ile Val Asp Ser
35     40     45
Leu Lys Phe Trp Glu Tyr Asp Ile Leu Phe Ser Tyr Phe Tyr Arg Tyr
50     55     60
Ser Phe Phe Ala Ser Phe Phe Ala Lys Cys Leu Gly Lys Arg Thr Tyr
65     70     75     80
Phe Thr Gly Gly Ile Asp Asn Leu Asp Glu Asn Tyr Ala Ser Thr Arg
85     90     95
Asn Tyr Lys Ile Gln Val Leu Phe Phe Lys Leu Cys Tyr Trp Val Ser
100    105    110
Ser Ser Cys Ile Ile Val Ser Gln Ser Asp Leu Lys Asn Ile Ala Lys
115    120    125
Val Phe His Phe Arg Arg Arg Leu Ser Tyr Ser Glu His Val Val Asp
130    135    140
Thr Ala Gln Phe Met Ser Asp Val Pro Lys Glu Lys Leu Phe Thr Thr
145    150    155    160
Val Val Trp Met Gly Glu Glu Gly Asn Val Arg Arg Lys Gly Val Asp
165    170    175
Lys Ala Leu Arg Ile Phe Ala Glu Leu Lys Lys Ile Thr Ser Phe Ser
180    185    190
Asp Tyr Arg Phe Ile Ile Met Gly Lys Lys Gly Glu Gly Thr Ala Leu
195    200    205
Val Gln Ser Leu Ile Asn Glu Tyr Asp Leu Glu Lys Phe Val Glu Leu
210    215    220
Val Gly Glu Val Ser Glu Glu Glu Lys Ile Ala Phe Leu Lys Arg Ser
225    230    235    240
Lys Tyr Tyr Phe Gln Leu Ser Leu Tyr Glu Gly Phe Gly Leu Ala Ala
245    250    255
Leu Glu Ala Leu Cys Ala Asn Asn Ile Leu Ile His Ser Gly Arg Gly
260    265    270
Gly Leu Ala Asn Pro Ile Tyr Thr Asp Gln Leu Leu Phe Asp Ile Asp
275    280    285
Asn Asp Phe Asp Lys Glu Phe Ser Ile Leu Thr Lys Lys Leu Ala Ser
290    295    300
Phe Thr Ser Leu Ile Pro Asn Asp Glu Val Leu Ser Tyr Tyr Asp Ile
305    310    315    320
Gln Arg Arg Lys Glu Asp Phe Lys Ala Ile Ile Thr Asp Asn Asn Arg
325    330    335
Asn Tyr Lys Leu Asn Asn
340

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<210> 6242

<211> 124

<212> PRT

<213> B.fragilis

<400> 6242

```

Leu Leu Asn Leu Lys Ser Ile Phe Met Lys Ile Lys Lys Leu Phe Thr
1      5      10      15
Ile Leu Thr Val Leu Cys Phe Ser Ala Leu Ala Gly Val Val Phe Leu
20     25     30

```

Lys Phe Val Asp Asn Lys Lys Asn Ala Arg Asp Ile Ala Leu Ala Asn
 35 40 45
 Val Glu Ser Leu Ala Asn Ala Glu Gly Asp Gly Ile Gly Asn Glu Asp
 50 55 60
 Asn Pro Ser Thr Thr Ile Lys Lys Cys Val Ser Ser Ser Glu Phe Thr
 65 70 75 80
 Lys Asp Asp Ser Thr Gly Glu Tyr Tyr Leu Val Cys Asn Ser Gly Thr
 85 90 95
 Thr Glu Ser Val Ile Tyr Arg Cys Pro Ser Gly Thr Thr Glu Gly His
 100 105 110
 Lys Asp Trp Ile Tyr Ser Phe Leu Tyr Cys Thr Arg
 115 120

<210> 6243

<211> 326

<212> PRT

<213> B.fragilis

<400> 6243

Thr Asn Ile Glu Asn Ser Asn Asp Lys Leu Val Thr Phe Ala Ser Val
 1 5 10 15
 Phe Asn Lys Gly Asn Ile Phe Gly Met Glu Ile Asp Lys Asn Leu Lys
 20 25 30
 Gly His Ala Leu Ala Phe Thr Ala Asn Met Met Trp Gly Leu Met Ser
 35 40 45
 Pro Ile Gly Lys Ser Ala Leu Ala Glu Phe Ser Ala Leu Ser Val Thr
 50 55 60
 Thr Phe Arg Met Val Gly Ala Ala Ala Phe Trp Ile Leu Ser Ala
 65 70 75 80
 Phe Cys Lys Gln Glu Gln Val Gly His Arg Asp Met Val Lys Ile Phe
 85 90 95
 Phe Ala Ser Leu Phe Ala Leu Val Phe Asn Gln Gly Ile Phe Ile Phe
 100 105 110
 Gly Leu Ser Leu Thr Ser Pro Ile Asp Ala Ser Ile Val Thr Thr Thr
 115 120 125
 Ser Pro Ile Ile Thr Met Ile Val Ala Ala Ile Tyr Leu Lys Glu Pro
 130 135 140
 Val Thr Asn Lys Lys Val Leu Gly Ile Phe Ile Gly Ala Met Gly Ala
 145 150 155 160
 Leu Ile Leu Ile Leu Ser Ser Gln Ala Val Ser Ala Gly Gly Gly Ser
 165 170 175
 Ile Trp Gly Asp Leu Leu Cys Met Ile Ala Gln Leu Ser Phe Ser Ile
 180 185 190
 Tyr Leu Thr Val Phe Lys Gly Leu Ser Gln Arg Tyr Ser Ala Ile Thr
 195 200 205
 Ile Asn Lys Trp Met Phe Ile Tyr Ala Ser Ile Cys Tyr Ile Pro Phe
 210 215 220
 Ser Tyr Gln Asp Ile Ala Ser Ile Lys Trp Asp Ser Ile Ser Thr Ala
 225 230 235 240
 Ala Ile Tyr Gln Val Leu Tyr Val Val Leu Cys Gly Ser Phe Ile Ala
 245 250 255
 Tyr Ile Cys Ile Met Thr Ala Gln Lys Leu Met Arg Pro Thr Val Val
 260 265 270
 Ser Met Tyr Asn Tyr Val Gln Pro Ile Val Ala Ser Ile Ala Ala Ile
 275 280 285
 Leu Met Gly Ile Gly Ser Phe Gly Trp Glu Lys Gly Val Ala Ile Ala
 290 295 300
 Leu Val Phe Leu Gly Val Tyr Phe Val Thr Gln Ser Lys Ser Lys Ala
 305 310 315 320

Asp Leu Glu Gly Val Ser
325

<210> 6244
<211> 251
<212> PRT
<213> B.fragilis

<400> 6244
Leu Lys Lys Glu Met Lys Lys Ile Lys Leu Leu Trp Met Ala Met Leu
1 5 10 15
Thr Leu Met Leu Pro Ala Leu Gln Ser Cys Asp Asp Asn Asp Gly Tyr
20 25 30
Ser Leu Gly Asp Ile Ala Val Asp Trp Ala Thr Val Arg Val Val Gly
35 40 45
Gly Asp Thr Tyr Ser Leu Asn Ala Asp Arg Trp Gly Thr Leu Trp Pro
50 55 60
Ala Ala Thr Ala Ile Pro Phe Tyr Lys Pro Ile Asp Gly Gln Arg Val
65 70 75 80
Ile Thr Tyr Phe Asn Pro Leu Tyr Asp Asn Tyr Glu Gly Tyr Asp His
85 90 95
Ala Val Lys Val Glu His Asn Tyr Asn Val Leu Thr Lys Gln Val Glu
100 105 110
Asp Leu Thr Ala Glu Asn Glu Ser Glu Phe Gly Asn Asp Pro Val Trp
115 120 125
Val Asn Lys Asp Met Met Trp Ile Gly Gly Gly Tyr Leu Asn Val Ile
130 135 140
Phe Arg Gln Asn Leu Pro Val Lys Glu Lys His Leu Val Ser Leu Val
145 150 155 160
Arg Asp Lys Trp Ala Thr Ala Ala Glu Gly Glu Asp Asp Gly Tyr Ile
165 170 175
His Leu Glu Phe Arg Tyr Asn Thr Tyr Asp Asp Val Thr Ala Arg Gln
180 185 190
Ala Asn Gly Ala Val Ser Phe Asn Leu Asn Ser Leu Asp Leu Thr Gly
195 200 205
Lys Lys Gly Ile Lys Val Lys Leu Asn Ser Val Lys Asp Gly Glu Thr
210 215 220
Glu Val Val Phe Asn Leu Lys Gly Gln Ser Met Pro Glu Glu Ala Lys
225 230 235 240
Gln Val Thr Leu Ser Asp Glu Val Gln Ile Lys
245 250

<210> 6245
<211> 300
<212> PRT
<213> B.fragilis

<400> 6245
Ile Asn Glu Asp Met Ala Thr Gln Arg Arg Asn Ala Leu Gly Arg Gly
1 5 10 15
Leu Asp Ala Leu Leu Ser Met Glu Glu Val Lys Thr Glu Gly Ser Ser
20 25 30
Ser Ile Asn Glu Ile Glu Leu Ser Lys Ile Ser Val Asn Pro Asn Gln
35 40 45
Pro Arg Arg Glu Phe Asp Glu Thr Ala Leu Glu Glu Leu Ala Asp Ser
50 55 60
Ile Arg Glu Ile Gly Ile Ile Gln Pro Ile Thr Leu Arg Lys Val Ser
65 70 75 80
Asp Asp Glu Tyr Gln Ile Ile Ala Gly Glu Arg Arg Tyr Arg Ala Ser

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<210> 6246
<211> 269
<212> PRT
<213> B.fragilis
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Thr	Ile	Tyr	Cys	His	Thr	Met	Ala	Trp	Thr	Ile	Met	Lys	Arg	Asn	Lys
1				5					10					15	
Lys	Asn	Phe	Arg	Ile	Thr	Thr	Asn	Thr	Cys	Leu	Tyr	Pro	Glu	Leu	Asn
			20					25				30			
Lys	Ile	Ser	Pro	Ala	Asn	Glu	His	Leu	Thr	Met	Gln	Ile	Ala	Ser	Gln
		35					40				45				
Val	Tyr	Asn	Ile	Pro	Thr	Ala	Ala	Asn	Gly	Leu	Cys	Phe	Phe	Gln	Asn
	50					55					60				
Asp	Glu	Pro	Ala	Tyr	Ile	Thr	Arg	Arg	Phe	Asp	Ile	Ala	Pro	Asn	Gly
65					70					75				80	
Arg	Lys	Phe	Arg	Lys	Glu	Asp	Phe	Ala	Ser	Leu	Ala	Gly	Ile	Ser	Lys
				85					90					95	
Gly	Asn	Lys	Gly	Pro	Asn	Tyr	Lys	Tyr	Asp	Val	Leu	Ser	Tyr	Glu	Glu
			100					105					110		
Met	Ala	Asp	Ile	Ile	Lys	Gln	Tyr	Val	Ser	Ala	Ser	Ser	Val	Glu	Val
		115					120					125			
Leu	Lys	Phe	Phe	Arg	Leu	Val	Ile	Phe	Asn	Phe	Leu	Phe	Ser	Asn	Gly
	130					135					140				
Asp	Ala	His	Ala	Lys	Asn	Phe	Ser	Leu	Leu	Glu	Thr	Pro	Ser	Gly	Asp
145					150					155				160	
Phe	Ile	Leu	Ala	Pro	Ala	Tyr	Asp	Leu	Leu	Asn	Thr	Arg	Leu	His	Ile
				165						170				175	
Phe	Asp	Asp	His	Val	Phe	Ala	Leu	Gln	Arg	Gly	Leu	Phe	Lys	Glu	Asn
			180					185				190			
Thr	Leu	Asn	Gly	Asn	Asp	Gly	Ala	Val	Thr	Gly	Lys	Glu	Phe	Ile	Glu

```

      195              200              205
Phe Gly Ile Arg Ile Gly Ile Pro Pro Lys Arg Val His Lys Glu Leu
  210              215              220
Ile Ser Phe Cys Gln Lys Ala Glu Gln Val Gln Asp Leu Val Glu Lys
  225              230              235              240
Ser Phe Leu Pro Asn Gln Leu Lys Lys Gln Tyr Leu Leu His Tyr Gln
      245              250              255
Met Arg Lys Asp Ser Tyr Leu Ser Val Gly Ile Leu Thr
      260              265

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<210> 6247

<211> 480

<212> PRT

<213> B.fragilis

<400> 6247

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Gln Trp Glu Arg Phe Gly Gln Ser Lys Asp Ser Tyr Arg Arg Ser Phe
  1              5              10              15
Gly Asn Phe Met Ile Trp Thr Glu Ser Thr Arg Tyr Met Arg Asn Glu
      20              25              30
Gly Glu Lys Val Phe Phe Arg Asn Pro Ile Ala Val Ile Asn Thr Ser
      35              40              45
Arg Val Ser Asp Ser Asp Pro Ile Glu Leu Ala Asp Ser Ala Glu Ile
      50              55              60
Tyr Pro Lys Gly Lys Pro Gly Thr Thr Glu Asn Ile His Ile Lys Thr
      65              70              75              80
Ser Arg Ser Asn Tyr Asn Thr Arg Gln Leu Val Glu Leu Thr Ile Asn
      85              90              95
Arg Leu Pro Asp Glu Val Ser Asp Leu Thr Val Ser Val Ser Arg Asn
      100              105              110
Asp Ser Leu Val Thr Leu Pro Pro Leu Glu Glu Ser Thr Trp Ser Lys
      115              120              125
Gln Val Thr Ala Thr Pro Gly Thr Phe Ser Gly Lys Trp Ile Pro Glu
      130              135              140
Tyr Glu Gly His Ile Ile Cys Gly Gln Ile Glu Ser Pro Thr Gly Glu
      145              150              155              160
Thr Leu Lys Gln Val Gln Asn Glu Pro Ile Ser Ala Asp Ile Ala Phe
      165              170              175
Val Gly Lys Asp Ile Arg Tyr Val Gln Gly Gln Val Glu Ser Gly Gly
      180              185              190
Asn Thr Leu Phe Tyr Thr Ser His Val Tyr Gly Thr Asn Asp Val Val
      195              200              205
Ala Ala Ala Trp Asn Ile Asn Gly Glu Pro Phe Arg Met Asn Ile Leu
      210              215              220
Ser Pro Phe Ser Glu Lys Leu Pro Gln Asn Leu Pro Ser Leu Lys Leu
      225              230              235              240
Tyr Arg Asn Lys Lys Arg Leu Leu Glu Arg Ser Ile Gly Ile Gln Leu
      245              250              255
Gln Gln Val Thr Val Leu Asp Ser Leu Asp His Ala Ile Pro Leu Gln
      260              265              270
Ser Cys Tyr Gly Leu Gln Pro Tyr Leu Asn Tyr Asn Leu Asp Glu Tyr
      275              280              285
Thr Arg Phe Asn Thr Met Thr Glu Thr Phe Val Glu Phe Val Arg Ser
      290              295              300
Val Ile Ile Arg Lys Val Asn Gly Lys Arg Arg Leu Arg Val Leu Lys
      305              310              315              320
Glu Gly Glu Lys Arg Phe Asn Ile Gly Asn Thr Leu Val Leu Leu Asp
      325              330              335
Gly Val Pro Ile His Asp His Glu Asp Ile Leu Lys Tyr Asn Pro Arg

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<210> 6248
<211> 316
<212> PRT
<213> B.fragilis
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<400> 6248																
Pro 1	Cys	His	Ser	Tyr 5	Lys	Arg	His	Asn	Arg 10	Thr	Ile	Glu	Lys 15	Cys	Ser	
Gly	Asn	Asn	Lys 20	Leu	Asn	Asn	Tyr	Leu 25	Ser	Met	Asn	Glu	Gly 30	Leu	Thr	
Lys	Glu	Tyr 35	Arg	Val	Lys	Leu	Leu 40	Glu	Thr	Phe	Ala	Ala 45	Phe	Asp	Arg	
Phe	Cys 50	Lys	Ala	Asn	Gly	Ile 55	Lys	Tyr	Tyr	Ala	Ala 60	Tyr	Gly	Thr	Leu	
Ile 65	Gly	Ala	Val	Arg	His 70	Lys	Gly	Leu	Ile	Pro 75	Trp	Asp	Asp	Asp	Ile 80	
Asp	Val	Tyr	Met	Leu 85	Arg	Glu	Asp	Tyr	Asp 90	Lys	Phe	Cys	Ser	Leu 95	Lys	
Gly	Lys	Val	Met	Asp 100	His	Tyr	Asp	Ile 105	Met	Asp	Ile	Asn	Asp 110	Asp	Gly	
Tyr	Trp	Leu	Leu	Ser	Leu	Ala	Lys 120	Phe	Val	Asp	Thr	Asn	Thr 125	Thr	Leu	
Trp	Glu	Phe	Lys	Asn	Arg	Pro	Leu 135	Ile	Leu	Gly	Val	Tyr	Ile 140	Asp	Val	
Phe 145	Pro	Leu	Asp	Glu	Cys 150	Asn	Met	Glu	Gln	Val	Ile	Thr	Leu	Lys	Asn 160	
Arg	Tyr	Asp	Lys	Tyr 165	Ser	Leu	Leu	Val	Ala 170	Gln	Ser	Met	Met	Arg	Tyr 175	
Ser	Leu	Gly	Asp 180	Ile	Leu	His	Ser	Leu 185	Phe	Arg	Leu	Lys	Leu 190	Lys	Cys	
Leu	Leu	Leu	Gln	Ile	Ser	Cys	Val	Phe 200	Tyr	Lys	Arg	His	Lys 205	Tyr	Ala	
Tyr	Tyr	Lys	Gln	Lys	Tyr	Leu	Ser	Cys 215	Val	Glu	Asp	Ile	Lys 220	Lys	Ser	
Lys 225	Gly	Asn	Phe	Leu	Val	Ser	Tyr	Asp	Gly	Pro	Tyr	Gly	Met	Gly	Glu 240	
Val	Leu	Asp	Lys	Lys	Leu	Phe	Ser	Glu	Ser	Val	Leu	Val	Pro	Phe	Glu 255	
Ser	Met	Ser	Ile 260	Glu	Val	Pro	Ile	Gly 265	Tyr	Glu	Glu	Cys	Leu	Lys	Ser	
Ile	Tyr	Gly	Asp	Tyr	Met	Lys	Leu	Pro	Pro	Lys	Glu	Lys	Arg	Ile	Ser	

	275		280		285
His	His Ser Arg Tyr Tyr	Leu Asn Leu Asn	His Arg Leu Ser Phe Ser		
	290	295	300		
Glu	Ile Ser Arg Glu Ile	Ser Leu Arg Gly Lys	Ile		
305		310	315		

<210> 6249

<211> 925

<212> PRT

<213> B.fragilis

<400> 6249

Arg	Ile	Asp	Arg	Pro	Lys	Thr	Asn	Thr	Met	Lys	Lys	Ser	Thr	Tyr	Leu
1				5					10					15	
Trp	Met	Leu	Pro	Leu	Leu	Phe	Ala	Trp	Pro	Gln	Gln	Met	Thr	Ala	Gln
			20					25					30		
His	Pro	Leu	Ser	Leu	Pro	Ala	Asp	Ser	Ile	Thr	Ile	Asp	Ser	Leu	Leu
		35					40					45			
Glu	Thr	Val	Glu	Lys	Asn	Thr	Pro	Tyr	Arg	Ile	Phe	Ser	Thr	Ile	Ser
	50					55					60				
Ala	Pro	Phe	Lys	Val	Leu	Val	Lys	Gly	Lys	Ala	Ser	Pro	Leu	Gln	Gln
65					70					75				80	
Leu	Lys	Glu	Ala	Leu	Glu	Pro	Thr	Pro	Tyr	Lys	Leu	Ser	Val	Ser	Gly
				85					90					95	
Asn	Asn	Leu	Phe	Val	Leu	Lys	Glu	Gln	Glu	Leu	Ile	Thr	Leu	Leu	Pro
			100					105					110		
Ala	Lys	Leu	Thr	Gly	Glu	Pro	Glu	Lys	Gly	Glu	Ser	Tyr	Tyr	Gly	Asp
		115					120					125			
Val	Tyr	Thr	Tyr	Leu	Ser	Gly	Glu	Pro	Glu	Lys	Ala	Ser	Ser	Glu	Asn
	130					135					140				
Lys	Val	Tyr	Asn	Val	Gly	Asp	Val	Arg	Ile	Lys	Gln	Pro	Pro	Arg	Lys
145				150						155				160	
Ala	Val	Leu	Lys	Gly	Gln	Val	Thr	Asn	Phe	Lys	Thr	Gly	Glu	Pro	Met
				165					170					175	
Ile	Gly	Ile	Asn	Leu	Ile	Leu	Lys	Asp	Pro	Trp	Ile	Ala	Thr	Thr	Thr
		180						185					190		
Asp	Val	Lys	Gly	Asn	Phe	Thr	Leu	Glu	Leu	Pro	Thr	Gly	His	Lys	Gln
	195						200					205			
Ile	Asp	Ile	Lys	Gly	Leu	Asn	Ile	Lys	Asp	Thr	Arg	Gln	Ile	Met	
	210					215					220				
Leu	Tyr	Ser	Asp	Gly	Thr	Leu	Asp	Ile	Glu	Leu	Glu	Glu	Thr	Thr	His
225					230					235					240
Met	Leu	Asp	Glu	Val	Thr	Ile	Thr	Ser	Gly	Arg	Ile	Gln	Asn	Val	Lys
				245					250					255	
Ser	Thr	Gln	Leu	Gly	Ala	Glu	Thr	Leu	Arg	Pro	Thr	Gln	Leu	Lys	Asn
		260						265					270		
Ile	Pro	Met	Ala	Leu	Gly	Glu	Val	Asp	Ile	Leu	Lys	Met	Val	Gln	Ala
		275					280					285			
Leu	Pro	Gly	Val	Lys	Thr	Val	Gly	Glu	Ala	Ser	Ser	Gly	Phe	Asn	Val
	290					295					300				
Arg	Gly	Gly	Ala	Thr	Asp	Gln	Asn	Leu	Ile	Leu	Leu	Asn	Asp	Gly	Thr
305					310					315				320	
Ile	Tyr	Asn	Pro	Asn	His	Leu	Phe	Gly	Phe	Phe	Ala	Ala	Phe	Asn	Ser
				325					330					335	
Asp	Met	Val	Lys	Glu	Ala	Glu	Ile	Tyr	Lys	Ser	Ser	Ile	Pro	Ala	Gln
		340						345					350		
Tyr	Gly	Gly	Arg	Ile	Ser	Ser	Ile	Leu	Asp	Ile	Thr	Gly	Lys	Glu	Ala
	355						360					365			
Asn	Lys	Glu	Lys	Phe	Thr	Gly	Ser	Ala	Gly	Ile	Gly	Leu	Val	Thr	Ser

370	375	380
Lys Leu Asn Leu Glu Ile	Pro Ile Ile Lys Asp	Arg Thr Ser Val Leu
385	390	400
Leu Ser Gly Arg Thr Tyr Ser Asp Trp Ile Met Lys Gln Leu Pro		
405	410	415
Glu Lys Ser Glu Tyr Lys Asn Gly Thr Ala Gly Phe Tyr Asp Leu Ala		
420	425	430
Ala Ile Val Ala His Lys Phe Asn Asp Lys His Ser Leu Asn Val Tyr		
435	440	445
Gly Tyr Tyr Ser His Asp Arg Phe Ala Phe Asn Ser Asn Glu Lys Tyr		
450	455	460
Gly Tyr Asn Asn Leu Asn Ala Ser Ala Arg Trp Arg Ala Val Phe Asn		
465	470	480
Glu Lys Leu Ile Gly Tyr Phe Ser Ala Gly Tyr Asp His Tyr Asp Tyr		
485	490	495
Asn Asn Arg Glu Thr Val Asn Ala Ser Thr Ala Tyr Lys Leu Ser Phe		
500	505	510
Asp Ile Asn Gln Tyr Phe Val Lys Ala Asp Phe Thr Asn Ile Leu Ala		
515	520	525
Asp Lys His Thr Leu Asn Phe Gly Phe Lys Ser Met Leu Tyr His Ile		
530	535	540
Asn Ser Gly Thr Tyr Glu Pro Glu Gly Ser Glu Ser Phe Val Lys Lys		
545	550	560
Asp Val Leu Gln Lys Asp Lys Ala Leu Glu Thr Ala Phe Tyr Leu Gly		
565	570	575
Asp Glu Trp Glu Ile Thr Pro Lys Leu Ser Val Asn Ala Gly Ile Arg		
580	585	590
Tyr Ser Leu Phe Ser Ala Leu Gly Pro Arg Ser Tyr Tyr Gln Tyr Ala		
595	600	605
Ser Gly Met Leu Pro His Glu Ser Thr Ile Thr Asp Thr Ile Thr Ala		
610	615	620
Gly Ala Gly Lys Phe Met Lys Thr Tyr His Gly Pro Glu Phe Arg Leu		
625	630	635
Ser Ala Arg Tyr Ala Phe Thr Asp Asn Phe Ser Val Lys Ala Gly Phe		
645	650	655
Asn Ser Met Arg Gln Tyr Ile His Lys Leu Ser Asn Thr Val Ile Met		
660	665	670
Ser Pro Thr Asp Thr Trp Lys Leu Ser Asp Val Asn Ile Lys Pro Gln		
675	680	685
Arg Gly Trp Gln Ala Ala Ala Gly Leu Tyr Leu Asn Ser Pro Ser Gly		
690	695	700
Ile Trp Glu Tyr Ser Val Glu Gly Tyr Tyr Lys Arg Met Ser Asp Tyr		
705	710	715
Leu Asp Tyr Arg Gly Gly Ala Lys Leu Leu Met Asn His His Ile Glu		
725	730	735
Thr Asp Val Ile Asn Thr Gln Gly His Ala Tyr Gly Val Glu Leu Gln		
740	745	750
Val Lys Lys Gln Val Gly Lys Leu Asn Gly Trp Met Ser Tyr Thr Tyr		
755	760	765
Ser Arg Thr Phe Leu Arg Gln Asn Asp Lys Arg Ile Glu Lys Pro Val		
770	775	780
Asn Asn Gly Asp Trp Tyr Pro Thr Glu Tyr Asp Lys Pro His Asp Phe		
785	790	795
Lys Phe Val Gly Asn Tyr Lys Phe Thr His Arg Tyr Ser Met Ser Ile		
805	810	815
Asn Val Asp Tyr Ser Thr Gly Arg Pro Thr Thr Ile Pro Ala Gly Gln		
820	825	830
Tyr Tyr Asp Glu Ser Thr Gln Ser Met Arg Val Tyr Tyr Thr Glu Arg		
835	840	845

Asn Ser Tyr Arg Ile Pro Asp Tyr Phe Arg Thr Asp Ile Ser Phe Asn
 850 855 860
 Ile Glu Pro Ser His His Leu Thr Leu Leu Thr His Ser Ser Ile Ser
 865 870 875 880
 Ile Gly Val Tyr Asn Val Thr Gly Arg Lys Asn Val Tyr Ser Ile Tyr
 885 890 895
 Tyr Met Pro Glu Gly Gln Ile Lys Gly Tyr Gln Ile Ser Ile Phe
 900 905 910
 Gly Val Pro Ile Pro Phe Ile Thr Tyr Asn Ile Lys Phe
 915 920 925

<210> 6250

<211> 338

<212> PRT

<213> B.fragilis

<400> 6250

Gln Trp Cys Arg Asn Ile Leu Ser Asp Leu Phe Arg Arg Tyr Ala Cys
 1 5 10 15
 Phe Val Ser Glu Phe Ser Asp Phe Gln Glu Asn Pro Ile Leu Glu Glu
 20 25 30
 Val Asn Asn Gly Cys Asn Phe Phe Glu Lys Ser Lys Ser Asp Ile Ile
 35 40 45
 Ile Ala Cys Gly Gly Gly Ser Val Leu Asp Met Ala Lys Leu Ile Arg
 50 55 60
 Phe Lys Ala Ala Tyr Asp Gly Asp Leu Val Asp Ser Val Phe Glu Lys
 65 70 75 80
 Lys Lys Glu Leu Thr Pro Leu Ile Ala Leu Pro Thr Thr Ala Gly Thr
 85 90 95
 Gly Cys Glu Ala Thr Pro Phe Ala Val Cys Tyr Lys Asn Ser Ile Lys
 100 105 110
 Tyr Ser Val Ala His Asn Asp Met Leu Pro Asp Tyr Ala Val Ile Phe
 115 120 125
 Pro Gln Phe Thr Tyr Asn Asn Ser Ser Tyr Leu Thr Ala Cys Thr Gly
 130 135 140
 Phe Asp Ala Leu Ser Gln Ser Ile Glu Ala Tyr Trp Asn Val Asn Ala
 145 150 155 160
 Thr Ala Glu Ser Asp Glu Tyr Ala Lys Arg Ala Ile Ser Val Leu Trp
 165 170 175
 Asp Asn Leu Pro Lys Val Val Asn Ser Pro Ser Asn Glu Ile Arg Asp
 180 185 190
 Leu Met Ser Val Ala Ala Tyr Trp Ser Gly Cys Ala Ile Ala Ile Thr
 195 200 205
 Lys Thr Thr Ala Pro His Ala Phe Ser Tyr Ala Phe Thr Thr His Cys
 210 215 220
 Gly Tyr Pro His Gly His Ala Val Ala Leu Ser Phe Pro Phe Phe Met
 225 230 235 240
 Ala Leu Asn Leu Leu Glu Lys Gln Asp Phe Ala Phe Gln Pro Arg Ile
 245 250 255
 Asn Ile Asp Glu Tyr Tyr Lys Lys Thr Ala Trp Leu Gln Ser Gln Leu
 260 265 270
 Gly Phe Ser Asp Glu Ile Asn Ile Gln Ser Glu Met Gln Ser Tyr Leu
 275 280 285
 Asn Asn Ile Gly Leu Cys Asn Asn Gly Tyr Gly Asp Asn Asp Leu Thr
 290 295 300
 Ile Met Leu Asn Gln Val Asn Ile Gln Arg Leu Val Asn Asn Pro Val
 305 310 315 320
 Ile Val Thr Lys Asp Ile Ile Glu Arg Leu Lys Asn Val Leu Gly Thr
 325 330 335

Ile Asn

<210> 6251

<211> 418

<212> PRT

<213> B.fragilis

<400> 6251

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Leu Leu Cys Gly Val Thr Ser Val Leu Ile Pro Val Gly Arg Ile Leu
1      5      10      15
Ile Leu Lys Lys Phe Asn Ser Ile Met Glu Ile Lys Leu Asp Tyr Ser
20      25      30
Asp Ile Lys Phe Arg Tyr Asp Gly Lys Leu Arg Leu Leu Ile Ile Val
35      40      45
Gly Thr Arg Pro Glu Ile Ile Arg Leu Ala Ala Val Ile Asn Lys Cys
50      55      60
Arg Arg Tyr Phe Asp Cys Ile Leu Ala His Thr Gly Gln Asn Tyr Asp
65      70      75      80
Tyr Asn Leu Asn Gly Val Phe Phe His Asp Leu Ser Leu Gln Ala Pro
85      90      95
Asp Val Tyr Met Asp Ala Val Gly Asp Asp Leu Gly Ser Thr Met Gly
100     105     110
Asn Ile Leu Asn Ala Ser Tyr Lys Leu Met Ser His Leu Arg Pro Asp
115     120     125
Ala Val Leu Val Leu Gly Asp Thr Asn Ser Cys Leu Ser Val Ile Ser
130     135     140
Ala Lys Arg Leu His Ile Pro Ile Phe His Met Glu Ala Gly Asn Arg
145     150     155     160
Cys Phe Asp Glu Cys Leu Pro Glu Glu Thr Asn Arg Arg Ile Val Asp
165     170     175
Ile Ile Ser Asp Met Asn Leu Cys Tyr Ser Glu His Ala Arg Arg Tyr
180     185     190
Leu Asn Ala Ser Gly Val Ala Lys Glu Arg Thr Tyr Val Thr Gly Ser
195     200     205
Pro Met Ala Glu Val Leu Ser Glu Asn Leu Ser Ala Ile Glu Ser Ser
210     215     220
Asp Ile His Ala Arg Leu Gly Leu Arg Lys Gly Gln Tyr Ile Leu Leu
225     230     235     240
Ser Ala His Arg Glu Asn Ile Asp Thr Asp Lys Asn Phe Ala Ser
245     250     255
Leu Phe Glu Gly Ile Asn Ala Met Ala Glu Lys Tyr Asp Met Pro Val
260     265     270
Leu Tyr Ser Cys His Pro Arg Ser Arg Asn Arg Leu Glu Ser Ser Gly
275     280     285
Phe Lys Leu Asp Ser Arg Val Ile Arg His Ala Pro Leu Gly Phe His
290     295     300
Asp Tyr Asn Cys Leu Gln Met His Ala Tyr Ala Val Val Ser Asp Ser
305     310     315     320
Gly Thr Leu Pro Glu Glu Ser Ser Phe Phe Thr Ser Val Gly His Ser
325     330     335
Phe Pro Ala Val Cys Ile Arg Thr Ser Thr Glu Arg Pro Glu Ala Leu
340     345     350
Asp Lys Gly Cys Phe Ile Leu Ala Gly Ile Asp Lys Ala Ser Leu Leu
355     360     365
Gln Ala Val Asp Thr Ala Val Glu Met Asn Arg Asn Gly Asp Asn Gly
370     375     380
Val Pro Val Pro Asp Tyr Met Asp Arg Asn Val Ser Thr Lys Val Val
385     390     395     400

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Lys Leu Ile Gln Ser Tyr Thr Gly Ile Val Asn Lys Ile Val Trp Arg
 405 410 415
 Lys Ser

<210> 6252
 <211> 141
 <212> PRT
 <213> B.fragilis

<400> 6252
 Ile Glu Cys Gly Met Asp Met Gln Asp Val Lys Val Leu Asp Leu Pro
 1 5 10 15
 Lys Ile Leu Asp Lys Arg Gly Asn Leu Ser Ile Ile Gln Glu Val Glu
 20 25 30
 Asn Ile Pro Phe Lys Ile Lys Arg Ile Tyr Trp Ile Tyr Asp Val Pro
 35 40 45
 Gly Gly Glu Arg Arg Gly Gly His Ala Tyr Lys Lys Asn Gln Glu Phe
 50 55 60
 Ile Val Ala Leu Ser Gly Ser Phe Asp Val Val Leu Asp Asp Gly Asn
 65 70 75 80
 Cys Glu Lys Val Phe Ser Leu Asn Arg Ser Tyr Tyr Gly Ile Tyr Val
 85 90 95
 Pro Gln Gly Ile Trp Arg Lys Met Gln Asn Phe Ser Thr Asn Ala Leu
 100 105 110
 Ala Leu Val Leu Ser Ser Thr Asn Tyr Asp Pro Asp Asp Tyr Ile Leu
 115 120 125
 Glu Tyr Ile Asp Phe Val Gln Ser Lys Lys Asn Ser Leu
 130 135 140

<210> 6253
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 6253
 Leu Leu Met Gly Asn Leu Thr Glu Asn Asp Phe Gln Arg Val Ala Asp
 1 5 10 15
 Leu Leu Gly Ile Glu Val Ala Val Val Lys Ala Val Gln Ala Val Glu
 20 25 30
 Thr Ser Gly His Gly Gly Phe Val Ala Pro Gly Arg Pro Met Ile Leu
 35 40 45
 Phe Glu Gly His Ile Phe Trp Arg Glu Leu Lys Lys Arg Gly Leu Asp
 50 55 60
 Pro Glu Arg Tyr Val Ala Gly Asn Glu Asn Ile Leu Tyr Pro Lys Trp
 65 70 75 80
 Glu Lys Gly His Tyr Tyr Gly Gly Met Lys Glu Tyr Glu Arg Leu Glu
 85 90 95
 Lys Ala Trp Gln Ile His Lys Glu Ala Ala Asp Ala Ser Thr Ser Trp
 100 105 110
 Gly Met Phe Gln Val Met Gly Phe Asn Tyr Ala Met Cys Gly Tyr Gly
 115 120 125
 Ser Val Glu Glu Met Val Lys Asp Met Cys Val Gly Glu Asp Lys Gln
 130 135 140
 Leu Glu Ala Phe Ala Arg Phe Val Lys Leu Ala Lys Leu Gln Ser Tyr
 145 150 155 160
 Leu Glu Gln Lys Asp Trp Val Gly Phe Ala Lys Arg Tyr Asn Gly Pro
 165 170 175
 Gly Tyr Ala Arg Asn Gln Tyr Asp Lys Lys Leu Glu Gly Ala Tyr Arg

180
Lys Phe Thr Lys Glu
195

185

190

<210> 6254
<211> 166
<212> PRT
<213> B.fragilis

<400> 6254
Phe Lys Phe Ile Met Thr Leu Ser Glu Glu Val Ala Ser Leu Gln Arg
1 5 10 15
Ala Ala His Asp Leu Met Tyr Leu Gly Met Asp Gly Ser Pro Ile Tyr
20 25 30
Ser Asp Asp Leu Ser Arg Arg Asn Asn Glu Val Tyr Arg Leu Thr Thr
35 40 45
Thr Leu Tyr Asn Ser Gly Val Gln Gly Ser Thr Val Glu Glu Gln Ala
50 55 60
Ser Val Cys Leu Ala Leu Leu Met Gly Tyr Asn Ala Ser Phe Ile Asp
65 70 75 80
His Gly Glu Lys Arg Glu His Val Gln Lys Ile Leu Asp Arg Cys Trp
85 90 95
Asp Ile Leu Asp Thr Leu Pro Ala Ser Leu Leu Lys Leu Arg Leu Leu
100 105 110
Thr Ala Cys Tyr Gly Glu Val Phe Asp Glu Pro Leu Ala Asp Glu Ala
115 120 125
Arg Ser Ile Ile Ala Ser Trp Asp Ser Val Ser Leu Thr Thr Glu Gln
130 135 140
Gln Glu Ala Ile Asn Glu Phe Gln Thr Val Val Asp Asn Pro Tyr Pro
145 150 155 160
Trp Glu Tyr Val Glu Glu
165

<210> 6255
<211> 296
<212> PRT
<213> B.fragilis

<400> 6255
Val Leu Ile Met Lys Gly Ile Val Leu Ala Gly Gly Ser Gly Thr Arg
1 5 10 15
Leu Tyr Pro Ile Thr Lys Gly Val Ser Lys Gln Leu Leu Pro Ile Phe
20 25 30
Asp Lys Pro Met Ile Tyr Tyr Pro Ile Ser Val Leu Met Leu Ala Gly
35 40 45
Ile Arg Glu Ile Leu Ile Ile Ser Thr Pro Tyr Asp Leu Pro Gly Phe
50 55 60
Gln Arg Leu Leu Gly Asp Gly Ser Asp Tyr Gly Val Arg Phe Glu Tyr
65 70 75 80
Ala Glu Gln Pro Ser Pro Asp Gly Leu Ala Gln Ala Phe Ile Ile Gly
85 90 95
Glu Lys Phe Ile Gly Asp Asp Ser Val Cys Leu Val Leu Gly Asp Asn
100 105 110
Ile Phe Tyr Gly Asp Gly Leu Ile Glu Met Val Gln Ala Ala Val Lys
115 120 125
Lys Ala Asp Leu Glu Asn Lys Ala Thr Val Phe Gly Tyr Trp Val Ser
130 135 140
Asp Pro Lys Arg Tyr Gly Val Val Glu Phe Asp Lys Glu Gly Ser Val
145 150 155 160

```

Leu Ser Leu Glu Glu Lys Pro Arg Asp Pro Lys Ser Asn Tyr Ala Val
      165      170      175
Ile Gly Leu Tyr Phe Tyr Pro Asn Val Val Ile Glu Leu Ala Lys Asn
      180      185      190
Val Ile Pro Ser Ser Arg Gly Glu Leu Glu Ile Thr Ser Ile Asn Gln
      195      200      205
Glu Phe Leu Tyr Lys Lys Met Leu Thr Val Gln Leu Leu Gly Arg Gly
      210      215      220
Phe Ala Trp Leu Asp Thr Gly Thr His Asp Ser Leu Ala Glu Ala Ser
225      230      235      240
Thr Phe Ile Glu Val Ile Glu Lys Arg Gln Gly Leu Lys Ile Ala Cys
      245      250      255
Leu Glu Asp Ile Ala Phe Gly Gln Arg Trp Ile Thr Ile Asp Lys Leu
      260      265      270
Arg Lys Leu Ala Glu Lys Met Lys Asn Asn Gln Tyr Gly Lys Tyr Leu
      275      280      285
Leu Lys Ile Val Glu Gly Leu Asn
      290      295

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<210> 6256

<211> 265

<212> PRT

<213> B.fragilis

<400> 6256

```

Lys Cys Val Met Ala Lys Leu Tyr Pro Ile Gly Ile Gln Asn Phe Glu
1      5      10      15
Lys Ile Arg Arg Glu Gly Tyr Leu Tyr Ile Asp Lys Thr Ala Leu Val
      20      25      30
Cys Arg Leu Val Lys Thr Gly Ser Tyr Tyr Phe Leu Ser Arg Pro Arg
      35      40      45
Arg Phe Gly Lys Ser Leu Leu Ile Ser Thr Leu Glu Ala Tyr Phe Gln
      50      55      60
Gly Lys Lys Asp Leu Phe Arg Gly Leu Ala Met Glu Glu Leu Glu Lys
      65      70      75      80
Asp Trp Ile Lys Tyr Pro Ile Leu His Leu Asp Leu Asn Thr Glu Lys
      85      90      95
Tyr Asp Thr Pro Glu Ser Leu Asp Arg Ile Leu Asn Asp Thr Leu Ala
      100      105      110
Lys Trp Glu Met Val Tyr Gly Thr Ala Pro Ser Glu Thr Ser Ile Pro
      115      120      125
Leu Arg Phe Lys Gly Ile Val Gln Arg Ala Cys Glu Gln Ser Gly Gln
      130      135      140
Arg Val Val Ile Leu Ile Asp Glu Tyr Asp Lys Pro Met Leu Gln Ala
      145      150      155      160
Ile Gly Asn Glu Glu Leu Gly Glu Lys Tyr Arg Asp Thr Leu Lys Gly
      165      170      175
Phe Tyr Ser Val Leu Lys Thr Met Asp Gly Tyr Ile Arg Phe Ala Leu
      180      185      190
Leu Thr Gly Val Thr Lys Phe Gly Lys Val Ser Val Phe Ser Asp Leu
      195      200      205
Asn Asn Leu Asn Asp Ile Ser Met Asp Glu Pro Tyr Val Glu Leu Cys
      210      215      220
Gly Ile Thr Glu Lys Glu Ile His His Tyr Leu Glu Pro Glu Ile Arg
      225      230      235      240
Gln Leu Ala Lys Tyr Gln Lys Met Ser Tyr Glu Asp Ala Cys Arg Leu
      245      250      255
His His Arg Ala Gly Arg Ile Leu Glu
      260      265

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<210> 6257
 <211> 295
 <212> PRT
 <213> B.fragilis

<400> 6257

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Leu Ser Ser Met Glu Asn Glu Glu Thr Phe Ala Phe Leu Phe Gly Ser
1          5          10          15
Val Val Asp Thr Ser Ser Phe Cys Tyr Phe Cys Ala Phe Arg Lys His
          20          25          30
Lys Ile Thr Asp Lys Val Asp Cys Met Glu Asn Lys Arg Pro Leu Ile
          35          40          45
Leu Val Ser Asn Asp Asp Gly Ile Met Ala Lys Gly Ile Ser Glu Leu
          50          55          60
Ile Lys Phe Leu Arg Pro Leu Gly Glu Ile Val Val Met Ala Pro Asp
65          70          75          80
Ala Pro Arg Ser Gly Ser Gly Cys Ala Leu Thr Val Thr Gln Pro Val
          85          90          95
His Tyr Gln Leu Leu Lys Lys Asp Val Gly Leu Thr Val Tyr Lys Cys
          100          105          110
Ser Gly Thr Pro Thr Asp Cys Ile Lys Leu Ala Arg Asn Gln Ile Leu
          115          120          125
Asp Arg Lys Pro Asp Leu Val Gly Gly Ile Asn His Gly Asp Asn
          130          135          140
Ser Ala Thr Asn Val His Tyr Ser Gly Thr Met Gly Ile Val Ile Glu
145          150          155          160
Gly Cys Leu Asn Gly Ile Pro Ser Ile Gly Phe Ser Ile Cys Asp His
          165          170          175
Ala Pro Gly Ala Asp Phe Asp Ala Ala Gly Pro Tyr Val Arg Arg Ile
          180          185          190
Ala Ala Met Val Leu Glu Lys Gly Leu Pro Pro Leu Thr Cys Leu Asn
          195          200          205
Val Asn Phe Pro Asn Thr Gln Glu Ile Lys Gly Val Arg Ile Cys Glu
          210          215          220
Gln Ala Lys Gly His Trp Ser Gly Glu Trp Gln Ala Cys Pro Arg Arg
225          230          235          240
Asp Asp Ala Asn Phe Tyr Trp Leu Thr Gly Glu Phe Ile Asp His Glu
          245          250          255
Pro Glu Asn Glu Lys Asn Asp His Trp Ala Leu Ala Asn Gly Tyr Val
          260          265          270
Ala Ile Thr Pro Thr Val Val Asp Met Thr Ala Tyr His Phe Met Asp
          275          280          285
Glu Leu Lys Ser Trp Glu Leu
          290          295

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<210> 6258
 <211> 182
 <212> PRT
 <213> B.fragilis

<400> 6258

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Asn Asn Arg Ile Met Glu Val Glu Lys Glu Thr Glu Ile Trp Phe Ala
1          5          10          15
Met Arg Ala Thr Tyr Arg Arg Glu Thr Asp Ala Met Arg Leu Leu Ala
          20          25          30
Lys Glu Asn Leu Gly Cys Phe Val Pro Met Gln Tyr Lys Ile Ser Ile
          35          40          45
Lys Lys Gly Lys Lys Val Arg Val Leu Val Pro Ile Ile His Asn Leu

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      50              55              60
Ile Phe Ile His Ala Cys Pro Ser Glu Val Lys Arg Val Lys Ser Met
65              70              75              80
Val Ala Tyr Leu Gln Tyr Ile Thr Asp Thr Arg Ser Gly Lys Lys Ile
      85              90              95
Ile Ile Pro Asp Asn Glu Met Gln Arg Phe Ile Ala Val Ala Gly Thr
      100              105              110
Tyr Ser Asp His Leu Leu Tyr Phe Gln Pro Asp Glu Leu Asn Leu Ser
      115              120              125
Lys Gly Thr Lys Val Arg Ile Thr Gly Gly Asp Phe Glu Gly Gln Glu
      130              135              140
Gly Val Phe Leu Lys Val Lys Gly Ala Arg Asp Arg Arg Val Val Ile
145              150              155              160
Ala Ile Gln Gly Val Ile Ala Val Ala Met Ala Thr Ile His Pro Asp
      165              170              175
Leu Ile Glu Val Ile Lys
      180

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<210> 6259

<211> 680

<212> PRT

<213> B.fragilis

<400> 6259

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Ser Ile Ser Met Asp Asn Asn Ser Lys Lys Pro Asn Asn Lys Val Asn
1              5              10              15
Met Pro Lys Phe Asn Leu Asn Trp Met Tyr Met Ile Ile Ala Leu Met
      20              25              30
Leu Leu Gly Leu Tyr Phe Ala Asn Gly Ser Ser Ser Val Ser Lys Asn
      35              40              45
Ile Ser Tyr Asp Glu Phe Gln Gln Tyr Val Arg Asp Gly Tyr Val Ser
      50              55              60
Lys Val Ile Gly Tyr Asp Asp Asn Ser Val Glu Ile Tyr Ile Lys Pro
65              70              75              80
Gln Tyr Val Gly Thr Val Phe Lys Gln Asp Ser Thr Arg Val Gly Arg
      85              90              95
Asn Pro Met Ile Thr Thr Glu Ala Pro Ser Arg Glu Asn Leu Asp Asn
      100              105              110
Phe Leu Gln Lys Glu Lys Glu Glu Thr His Phe Asp Gly Ser Val Ser
      115              120              125
Tyr Asp Lys Lys Lys Asp Tyr Phe Ser Ala Ile Leu Trp Asn Val Leu
      130              135              140
Pro Ile Val Phe Leu Ile Ala Leu Trp Ile Phe Phe Met Arg Arg Met
145              150              155              160
Gly Ser Gly Ala Ser Gly Gly Ala Gly Gly Val Phe Asn Val Gly Lys
      165              170              175
Ser Lys Ala Gln Leu Phe Glu Lys Gly Gly Ser Ile Lys Val Thr Phe
      180              185              190
Lys Asp Val Ala Gly Leu Ala Glu Ala Lys Gln Glu Val Glu Glu Ile
      195              200              205
Val Glu Phe Leu Lys Glu Pro Gln Lys Tyr Thr Asp Leu Gly Gly Lys
      210              215              220
Ile Pro Lys Gly Ala Leu Leu Val Gly Pro Pro Gly Thr Gly Lys Thr
225              230              235              240
Leu Leu Ala Lys Ala Val Ala Gly Glu Ala Asn Val Pro Phe Phe Ser
      245              250              255
Leu Ala Gly Ser Asp Phe Val Glu Met Phe Val Gly Val Gly Ala Ser
      260              265              270
Arg Val Arg Asp Leu Phe Lys Gln Ala Lys Glu Lys Ala Pro Cys Ile

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275	280	285
Val Phe Ile Asp Glu Ile Asp Ala	Val Gly Arg Ala Arg Gly Lys Asn	
290	295	300
Pro Ala Met Gly Gly Asn Asp Glu Arg Glu Asn Thr Leu Asn Gln Leu		
305	310	315
Leu Thr Glu Met Asp Gly Phe Gly Ser Asn Ser Gly Val Ile Ile Leu		
325	330	335
Ala Ala Thr Asn Arg Val Asp Val Leu Asp Lys Ala Leu Leu Arg Ala		
340	345	350
Gly Arg Phe Asp Arg Gln Ile His Val Asp Leu Pro Asp Leu Asn Glu		
355	360	365
Arg Lys Glu Val Phe Gly Val His Leu Arg Pro Ile Lys Ile Asp Asp		
370	375	380
Thr Val Asp Val Asp Leu Leu Ala Arg Gln Thr Pro Gly Phe Ser Gly		
385	390	395
Ala Asp Ile Ala Asn Val Cys Asn Glu Ala Ala Leu Ile Ala Ala Arg		
405	410	415
His Gly Lys Lys Phe Val Gly Lys Gln Asp Phe Leu Asp Ala Val Asp		
420	425	430
Arg Ile Ile Gly Gly Leu Glu Lys Lys Thr Lys Ile Thr Thr Glu Ala		
435	440	445
Glu Arg Arg Ser Ile Ala Leu His Glu Ala Gly His Ala Ser Ile Ser		
450	455	460
Trp Leu Leu Glu Tyr Ala Asn Pro Leu Ile Lys Val Thr Ile Val Pro		
465	470	475
Arg Gly Arg Ala Leu Gly Ala Ala Trp Tyr Leu Pro Glu Glu Arg Gln		
485	490	495
Ile Thr Thr Lys Glu Gln Met Leu Asp Glu Met Cys Ala Thr Leu Gly		
500	505	510
Gly Arg Ala Ala Glu Asp Leu Phe Ile Gly Arg Val Ser Ser Gly Ala		
515	520	525
Ala Asn Asp Leu Glu Arg Val Thr Lys Gln Ala Tyr Gly Met Ile Ala		
530	535	540
Tyr Leu Gly Met Ser Glu Lys Leu Pro Asn Leu Cys Tyr Tyr Asn Asn		
545	550	555
Asp Glu Tyr Ser Phe Gln Arg Pro Tyr Ser Glu Lys Thr Ala Glu Leu		
565	570	575
Ile Asp Glu Glu Val Lys Arg Met Val Asn Glu Gln Tyr Glu Arg Ala		
580	585	590
Lys Gln Ile Leu Ser Glu His Lys Glu Gln His Asn Glu Leu Ala Gln		
595	600	605
Leu Leu Ile Asp Lys Glu Val Ile Phe Ala Glu Asp Val Glu Arg Ile		
610	615	620
Phe Gly Lys Arg Pro Trp Ala Ser Arg Ser Glu Glu Ile Met Ala Ala		
625	630	635
Asn Asn Lys Gln Glu Asn Ala Val His Pro Ala Asp Gly Glu Asp Val		
645	650	655
Asp Thr Thr Thr Pro Gln Ala Thr Glu Ser Gln Glu Gly Asn Thr Gln		
660	665	670
Gln Glu Ser Ala Ala Ser Gln Asn		
675	680	

<210> 6260

<211> 140

<212> PRT

<213> B.fragilis

<400> 6260

Lys Glu Phe Ile Met Thr Val Phe Asp Cys Ser Ile Ile Glu Phe Pro

1		5		10		15									
Lys	Ile	Glu	Asp	Arg	Ser	Gly	Asn	Ile	Thr	Pro	Val	His	Ser	Glu	Glu
		20					25						30		
Asn	Val	Pro	Phe	Asp	Ile	Lys	Arg	Val	Phe	Tyr	Ser	Tyr	Asp	Ile	Pro
		35					40					45			
Gly	Gly	Gly	Ala	Arg	Gly	Ala	His	Ala	His	Lys	Glu	Cys	His	Gln	Cys
	50					55					60				
Leu	Ile	Ala	Ala	Ser	Gly	Ser	Phe	Glu	Val	Val	Leu	Asp	Asp	Gly	Val
65					70					75				80	
Asn	Arg	Lys	Thr	Val	Leu	Leu	Asn	Arg	Pro	Tyr	Tyr	Gly	Leu	His	Ile
				85					90					95	
Pro	Pro	Gly	Val	Trp	Ala	Ser	Glu	Gln	Gly	Phe	Ser	Ser	Gly	Ala	Ile
			100					105					110		
Cys	Leu	Val	Leu	Ala	Ser	His	Val	Tyr	Asp	Glu	Asn	Asp	Tyr	Val	Arg
		115					120					125			
Asn	Tyr	Gln	Asn	Phe	Leu	Asn	Asn	Lys	Glu	Ile	Leu				
	130					135					140				

<210> 6261

<211> 198

<212> PRT

<213> B.fragilis

<400> 6261

Ser	Val	Thr	Ile	Met	Phe	Leu	Tyr	Gly	Ala	Ser	Gly	His	Ala	Lys	Val
1			5					10				15			
Ile	Ile	Asp	Ile	Leu	Arg	Ala	Gly	His	Glu	Ser	Ile	Glu	Ala	Leu	Phe
		20					25					30			
Asp	Asp	Asn	Val	Glu	Val	Thr	Ser	Leu	Leu	Gly	His	Pro	Val	Leu	Arg
		35					40				45				
Pro	Ser	Glu	Val	Arg	Gly	Pro	Leu	Ile	Val	Ser	Ile	Gly	Asn	Asn	Arg
		50				55					60				
Ile	Arg	Lys	Arg	Ile	Val	Asp	Thr	Leu	Ser	Val	Glu	Phe	Gly	Cys	Ala
65				70				75						80	
Ile	His	Pro	Leu	Ser	Ile	Val	Ser	Glu	Phe	Ala	Asp	Ile	Gly	Glu	Gly
			85					90					95		
Ser	Val	Val	Met	Gln	Gly	Ser	Ile	Ile	Gln	Val	Cys	Ala	Gln	Val	Gly
		100						105					110		
Arg	His	Cys	Ile	Ile	Asn	Thr	Gly	Ala	Ser	Val	Asp	His	Glu	Cys	Val
		115				120					125				
Ile	Glu	Asp	Tyr	Val	His	Ile	Ser	Pro	His	Ser	Thr	Leu	Cys	Gly	Asn
	130					135					140				
Val	Leu	Val	Gly	Glu	Gly	Ser	Trp	Ile	Gly	Ala	Gly	Thr	Thr	Ile	Ile
145					150					155				160	
Pro	Gly	Val	Lys	Ile	Gly	Lys	Trp	Ser	Val	Ile	Gly	Ala	Gly	Ser	Val
			165					170					175		
Val	Thr	Lys	Asp	Ile	Pro	Asp	His	Val	Leu	Ala	Val	Gly	Asn	Lys	Cys
		180					185					190			
Lys	Ile	Ile	Lys	Ser	Ile										
	195														

<210> 6262

<211> 205

<212> PRT

<213> B.fragilis

<400> 6262

Ile	Leu	Lys	Ile	Ile	Asp	Cys	Thr	Leu	Arg	Val	Lys	Met	Ile	Arg	Phe
1			5					10				15			

Gly Leu Met Thr Phe Pro Gly Leu Val Asn Glu Val Leu Met Gly Lys
 20 25 30
 Leu Gly Ile Leu Ser Leu Met Phe Cys Thr Ile Val Leu Leu Ser Cys
 35 40 45
 Gly Lys Lys Lys Asn Val Tyr Pro Glu Leu Glu Ala Phe Ile Gly Lys
 50 55 60
 Glu Ile Ile Phe Ser Asp Lys Asn Phe Asn Thr Val Gly Asn Lys Ala
 65 70 75 80
 Phe Lys Asp Gln Phe Leu Leu Ile Ser Tyr Val Asp Ser Gly Asn Cys
 85 90 95
 Thr Pro Cys Ser Leu Glu Lys Met Gln Tyr Met Lys Thr Asn Lys Arg
 100 105 110
 Arg Leu Leu Asp Thr His Thr Gly Val Leu Met Ile Val His Glu Lys
 115 120 125
 Asp Thr Phe Thr Val Asn Glu Val Phe Arg Gln Met His Val Ser Tyr
 130 135 140
 Pro Ile Phe Phe Asp Ser Leu Gly Cys Phe Lys Lys Glu Asn Gly Ile
 145 150 155 160
 Phe Asp Asn Pro Leu Tyr Gln Asp Phe Val Ile Asp Arg Ser Asn Lys
 165 170 175
 Val Val Trp Leu Gly Asn Pro Leu Arg Asn Lys Gln Ser Trp Gln Gln
 180 185 190
 Tyr Glu Lys Ala Ile Ser Met Leu Met Asp Ser Gly Lys
 195 200 205

<210> 6263

<211> 298

<212> PRT

<213> B.fragilis

<400> 6263

Val Ile Glu Ile Tyr Val Ile Leu Leu Leu Ile Asn Met Val Ser Val
 1 5 10 15
 Ile Ile Pro Leu Tyr Asn Lys Tyr Leu Ala Ile Gly Arg Thr Ile Glu
 20 25 30
 Ser Val Ile Val Gln Thr Tyr Lys Asp Trp Glu Leu Leu Ile Ile Asp
 35 40 45
 Asp Gly Ser Asn Asp Gly Ser Gly Gln Val Ala Glu Gln Tyr Thr Phe
 50 55 60
 Asp Glu Arg Ile His Tyr Ile Tyr Lys Ser Asn Gly Gly Val Ser Ser
 65 70 75 80
 Ala Arg Asn Met Gly Ile Gln Met Ala Lys Gly Glu Trp Leu Leu Tyr
 85 90 95
 Ile Asp Ala Asp Asp Tyr Leu Leu Pro Asn Ala Leu Glu Thr Leu Leu
 100 105 110
 Asn Leu Ala Glu Lys Phe Glu Val Ser Ile Ala Ala Ser Asn Phe Tyr
 115 120 125
 Val Glu Phe Glu Gly Lys Lys Arg Arg Cys Leu Tyr Asn Val Ser Glu
 130 135 140
 Gly Val Val Leu Asn Asn Phe Arg Ser Leu Phe Phe Asn Ser Phe Asp
 145 150 155 160
 Ile Arg Ala Gly Ala Thr Leu Tyr Lys Ser Ser Leu Ile Lys Gln Tyr
 165 170 175
 Lys Phe Asp Glu Thr Leu Ile Arg Tyr Glu Asp Ala Lys Leu Glu Phe
 180 185 190
 Asp Ile Leu Arg Asn His Lys Val Ala Ile Thr Pro Gln Phe Thr Met
 195 200 205
 Val Tyr Thr Lys Asp Tyr Ala Gly Leu Ser Lys Pro Ala Ser Asp Phe
 210 215 220

Ser Lys Asp Tyr Ile Ser Cys Met Ser Phe Glu Gly Lys Pro Phe Trp
 225 230 235 240
 Glu Lys Met Lys Leu Gly Ser Leu Ala Asn Tyr Gly Leu Asp Ile Tyr
 245 250 255
 Pro Asn Asn Arg Ser Glu Ile Lys Ala Ile Tyr Ser Asn Asp Leu Lys
 260 265 270
 Trp Ile Tyr Leu Ser Ala Lys Ile Gly Phe Phe Val Tyr Leu Phe Asn
 275 280 285
 Lys Cys Cys Asn Leu Leu His Lys Leu Lys
 290 295

<210> 6264

<211> 498

<212> PRT

<213> B.fragilis

<400> 6264

Pro Val Glu Ile Asp Leu Lys Pro Ile Asn Asn Ser Phe Met Ser Thr
 1 5 10 15
 Ile Leu Asp Leu Ala Pro Gln Asn Val Trp Lys His Phe Tyr Ser Leu
 20 25 30
 Thr Gln Ile Pro Arg Pro Ser Gly His Met Glu Lys Ile Thr Glu Phe
 35 40 45
 Leu Val Asn Phe Gly Asn Ser Leu Gly Leu Lys Thr Phe Val Asp Asp
 50 55 60
 Ala Gly Asn Val Ile Ile Arg Lys Pro Ala Thr Pro Gly Met Glu Asn
 65 70 75 80
 Arg Lys Gly Val Ile Leu Gln Ala His Met Asp Met Val Pro Gln Lys
 85 90 95
 Asn Asn Asp Thr Val His Asp Phe Glu Lys Asp Pro Ile Glu Thr Tyr
 100 105 110
 Ile Asp Gly Glu Trp Val Lys Ala Lys Gly Thr Thr Leu Gly Ala Asp
 115 120 125
 Asn Gly Leu Gly Val Ala Ala Ile Met Ala Val Leu Glu Asp Gln Asn
 130 135 140
 Leu Lys His Gly Pro Leu Glu Ala Leu Ile Thr Lys Asp Glu Glu Thr
 145 150 155 160
 Gly Met Tyr Gly Ala Phe Gly Leu Lys Pro Gly Thr Val Asn Gly Glu
 165 170 175
 Ile Leu Leu Asn Leu Asp Ser Glu Asp Gly Glu Leu Tyr Ile Gly
 180 185 190
 Cys Ala Gly Gly Met Asp Val Thr Ala Ser Leu Glu Tyr Lys Glu Val
 195 200 205
 Ala Pro Glu Glu Gly Asp Ile Ala Ile Arg Val Asn Leu Lys Gly Leu
 210 215 220
 Arg Gly Gly His Ser Gly Leu Glu Ile Asn Gln Gly Arg Ala Asn Ala
 225 230 235 240
 Asn Lys Leu Leu Val Arg Phe Ile Arg Glu Ala Val Ala Thr Tyr Glu
 245 250 255
 Ala Arg Leu Ala Ser Trp Glu Gly Gly Asn Met Arg Asn Ala Ile Pro
 260 265 270
 Arg Glu Ala His Ala Val Val Thr Ile Pro Ala Glu Asn Glu Glu Glu
 275 280 285
 Leu Leu Ala Leu Val Lys Tyr Cys Glu Asp Leu Phe Asn Glu Glu Phe
 290 295 300
 Lys Ala Ile Glu Thr Pro Ile Cys Phe Thr Ala Glu Arg Val Glu Leu
 305 310 315 320
 Pro Ala Gly Glu Val Pro Glu Glu Ile Gln Asp Asn Leu Ile Asp Ala
 325 330 335

Ile Phe Ala Cys Gln Asn Gly Val Met Arg Met Ile Pro Thr Ile Pro
 340 345 350
 Asp Thr Val Glu Thr Ser Ser Asn Leu Ala Ile Ile Asn Ile Gly Glu
 355 360 365
 Gly Lys Ala Ser Phe Lys Ile Leu Ala Arg Ser Ser Ser Asp Ser Met
 370 375 380
 Lys Glu Cys Leu Thr Thr Ser Leu Glu Cys Cys Phe Ser Met Ala Gly
 385 390 395 400
 Met Lys Val Glu Met Thr Gly Gly Tyr Ser Gly Trp Gln Pro Asp Ile
 405 410 415
 Asn Ser Pro Ile Leu His Ala Met Lys Glu Ser Tyr Lys Lys Gln Phe
 420 425 430
 Gly Thr Glu Pro Ala Val Lys Val Ile His Ala Gly Leu Glu Cys Gly
 435 440 445
 Ile Ile Gly Ala Ile Ile Pro Gly Leu Asp Met Ile Ser Phe Gly Pro
 450 455 460
 Thr Leu Arg Ser Pro His Ser Pro Asp Glu Arg Ala Leu Ile Pro Thr
 465 470 475 480
 Val Gln Lys Phe Tyr Asp Phe Leu Ile Ala Thr Leu Glu Gln Thr Pro
 485 490 495
 Met Lys

<210> 6265

<211> 1927

<212> PRT

<213> B.fragilis

<400> 6265

Tyr Met Arg Ile Lys Leu Ile Cys Ile Ile Val Leu Leu Ser Met Gly
 1 5 10 15
 Met Met Ser Trp Thr His Ala Gln Ser Tyr Asp Arg Leu Trp Lys Gln
 20 25 30
 Val Glu Gln Ala Gln Gln Lys Ser Leu Pro Gln Thr Val Val Arg Leu
 35 40 45
 Thr Gly Glu Ile Tyr Gln Lys Ala Lys Ala Glu Lys Asn Ser Pro Gln
 50 55 60
 Met Leu Lys Ala Tyr Ile Trp Gln Met Lys Phe Arg Glu Glu Ile Thr
 65 70 75 80
 Pro Asp Ser Phe Tyr Val Ser Leu Asn Gly Leu Glu Gln Trp Ala Val
 85 90 95
 Thr Thr Asp Lys Pro Leu Asp Arg Ala Ile Leu His Ser Leu Ile Gly
 100 105 110
 Ser Met Tyr Ala Asp Tyr Ala Ser Gln Asn Arg Trp Lys Leu Asn Gln
 115 120 125
 Arg Thr Asp Leu Glu Glu Glu Ala Pro Ser Val Asp Ile Arg Glu Trp
 130 135 140
 Ser Lys Asn Gln Phe Val Thr Lys Val Met Thr Glu Ile Ala Val Thr
 145 150 155 160
 Phe Gln Asp Ser Leu Leu Leu Leu Asp Thr Ser Ser Arg Ser Tyr Ile
 165 170 175
 Pro Phe Val Glu Leu Gly Val Thr Ser Asp Tyr Tyr His His Asp Met
 180 185 190
 Tyr His Leu Leu Ala Ser Arg Ala Ile Thr Ser Leu Glu Asn Leu Ser
 195 200 205
 Gly Phe Gly His Asp Ser Leu Ile Asn Val Arg Ile Glu Glu Ile Tyr
 210 215 220
 Gln His Met Met Asn Ser Tyr His Arg Thr Asp Asn His Asp Ala Leu
 225 230 235 240

Leu Leu Thr Thr Leu Asp Tyr Leu Gln Trp Lys Arg Arg Thr Asp Ile
 245 250 255
 Asp Phe Arg Pro Tyr Arg Ala Pro Glu Gly Lys Leu Gly Leu Thr Gln
 260 265 270
 Asp Pro Tyr Leu Ala Ala Leu Asp Lys Leu Ile Ala Glu Asn Lys Ser
 275 280 285
 His Asp Val Cys Ala Glu Val Tyr Leu Leu Lys Ala Gln Ala Ala Met
 290 295 300
 Asp Ala Gly Val Pro Ala Ser Ala Leu Gln Leu Cys Glu Glu Ala Ile
 305 310 315 320
 Ser Arg Tyr Pro Asp Tyr Arg Arg Ile Asn Ala Leu Lys Glu Leu Lys
 325 330 335
 Gln Glu Ile Leu Arg Pro Asp Leu Thr Val Gln Ser Pro Ser Thr Val
 340 345 350
 Tyr Pro Gly Glu Glu Phe Asp Leu Lys Val Ser Phe Lys Asn Leu Lys
 355 360 365
 Asp Phe Thr Val Glu Leu Tyr Ala Ile Asn Leu Pro Ala Arg Pro Asn
 370 375 380
 Thr Val Glu Ala Pro Asn Asp Ala Phe Leu Lys Lys His Gly Arg Leu
 385 390 395 400
 Leu Ser Ser Glu His Tyr Val Leu Phe Pro Ser Asp Asp Tyr Lys Val
 405 410 415
 Lys Asp Ser Ile Tyr His Ile Lys Ala Pro Glu Thr Gly Leu Tyr Ala
 420 425 430
 Leu Arg Val Ile Pro Gly Val Lys Val Arg Ser Asn Val Ser Lys Phe
 435 440 445
 Leu Tyr Ser Thr Cys Phe Lys Val Leu Thr Arg Ser Leu Pro Ser Asn
 450 455 460
 Leu Ser Glu Val Ala Ile Leu Asp Ala Met Ser Gly Lys Pro Leu Gln
 465 470 475 480
 Gly Val Val Leu Ser Phe Phe Asp Arg Gln Asn Lys Gln Leu Leu Thr
 485 490 495
 Ala Thr Thr Asn Thr Glu Gly Lys Val Gln Phe Ala Ser Ser Glu Lys
 500 505 510
 Tyr Arg Tyr Leu Thr Ala Ala Lys Gly Asn Asp Thr Ala Met Pro Gln
 515 520 525
 Met Tyr Leu Trp Gly Gly Asp Tyr Asn Phe Ala Asp His Ser Lys Pro
 530 535 540
 Val Ser Val Val Thr Leu Leu Thr Asp Arg Ser Val Tyr Arg Pro Gly
 545 550 555 560
 Gln Thr Val Tyr Val Lys Gly Ile Ala Tyr Glu Gln Tyr Pro Asp Ser
 565 570 575
 Ala His Val Ile Ala Gly Gln Glu Tyr Thr Leu Thr Leu Ser Asp Ala
 580 585 590
 Asn Gly Gln Glu Ile Ser Ala Lys Lys Leu Arg Thr Asn Asp Phe Gly
 595 600 605
 Ser Phe Thr Ala Glu Phe Ile Leu Pro Ser Val Cys Leu Asn Gly Thr
 610 615 620
 Phe Ser Leu Asn Thr Gln Asn Gly Phe Arg Ser Ile Arg Val Glu Asp
 625 630 635 640
 Tyr Lys Arg Pro Thr Phe Asp Ile Thr Phe Glu Pro Val Thr Glu Ser
 645 650 655
 Tyr Arg Leu Gly Asp Arg Val Glu Leu Lys Gly Ser Val Lys Thr Phe
 660 665 670
 Ser Gly Val Pro Leu Gln Asp Ile Pro Val Thr Tyr Thr Ile Thr Arg
 675 680 685
 Ser Leu Tyr Thr Trp Arg Met Trp Gly Met Asn Pro Val Ile Leu Ala
 690 695 700
 Ser Asp Thr Val Arg Leu Gly Val Asp Gly Asn Phe Glu Ile Pro Val

Met Pro Gln Ser Leu Thr Thr Trp Asn Phe Arg Gly Tyr Ala His Thr
 1185 1190 1195 1200
 Gln Asp Met Met Thr Gly Gln Met Asp Ala Thr Ala Val Thr Ser Lys
 1205 1210 1215
 Glu Phe Met Leu Thr Pro Asn Leu Pro Arg Phe Val Arg Val Gly Asp
 1220 1225 1230
 His Thr Ser Met Ala Ala Ser Val Ser Asn Leu Thr Gly Lys Asn Leu
 1235 1240 1245
 Ser Gly Thr Val Lys Leu Val Leu Phe Asp Pro Met Thr Asp Gln Val
 1250 1255 1260
 Ile Ser Thr Gln Gln Lys Lys Phe Asn Ala Gly Ala Gly Gln Ser Val
 1265 1270 1275 1280
 Gly Val Ser Phe Leu Phe Thr Val Thr Asp Lys Tyr Glu Ile Leu Gly
 1285 1290 1295
 Cys Arg Met Ile Ala Glu Gly Gly Asn Phe Ser Asp Gly Glu Gln His
 1300 1305 1310
 Leu Leu Pro Val Leu Ser Asp Lys Glu Asn Leu Thr Glu Thr Leu Pro
 1315 1320 1325
 Met Pro Val Arg Gly Glu Gln Thr Arg Thr Phe Ser Leu Ala Asp Leu
 1330 1335 1340
 Phe Asn His His Ser Lys Thr Ala Thr Asn Arg Arg Leu Thr Val Glu
 1345 1350 1355 1360
 Phe Thr Ser Asn Pro Ala Trp Tyr Ala Val Gln Ala Leu Pro Ala Leu
 1365 1370 1375
 Ser Gln Pro Arg Asn Asp Asp Ala Ile Ser Trp Ala Thr Ser Trp Tyr
 1380 1385 1390
 Ala Asn Thr Met Ala Ser Tyr Ile Met Asn Ala Gln Pro Arg Ile Gln
 1395 1400 1405
 Ala Ile Phe Asp Ser Trp Lys Leu Gln Gly Gly Thr Lys Glu Ser Phe
 1410 1415 1420
 Leu Ser Asn Leu Gln Lys Asn Gln Glu Val Lys Asn Ile Leu Leu Ser
 1425 1430 1435 1440
 Glu Ser Pro Trp Val Met Glu Ala Thr Ser Glu Ser Glu Gln Lys Glu
 1445 1450 1455
 Arg Ile Ala Thr Leu Phe Asp Leu Asn Asn Ile Arg Asn Ser Asn Thr
 1460 1465 1470
 Ala Ala Leu Leu Lys Leu Lys Glu Leu Gln Leu Pro Asp Gly Ser Trp
 1475 1480 1485
 Ser Trp Tyr Lys Gly Met Asp Gly Ser Leu Phe Val Thr Asp Phe Ile
 1490 1495 1500
 Val Glu Gln Asn Ala Arg Ile Ala Leu Leu Thr Gly Lys Pro Leu Glu
 1505 1510 1515 1520
 Gly Gly Ala Leu Asp Met Gln Gln Val Ala Phe Gly Tyr Leu His Lys
 1525 1530 1535
 Glu Ala Leu Gln Glu Tyr Arg Ser Ile Arg Glu Ala Glu Lys Val Gly
 1540 1545 1550
 Asn Lys Ser Glu Gly Ile Ser Arg Ser Ala Leu Lys Tyr Leu Tyr Leu
 1555 1560 1565
 Ile Ala Val Ser Gly Glu Lys Val Pro Ala Ser Ala Lys Glu Gly Tyr
 1570 1575 1580
 Asp Tyr Phe Leu Ser Lys Val Ala Pro Ser Leu Ser Gln Gln Ser Val
 1585 1590 1595 1600
 Thr Glu Lys Ala Trp Ser Ala Ile Val Leu Gln Lys Ala Gly Lys Val
 1605 1610 1615
 Lys Glu Ala Gln Glu Phe Met Ala Ser Leu Lys Glu Tyr Leu Thr Gln
 1620 1625 1630
 Thr Asp Glu Gln Gly Met Phe Phe Asp Arg Thr Asp Ser Pro Tyr Ala
 1635 1640 1645
 Trp Asn Asn Leu Lys Val Pro Ala His Val Asp Val Met Glu Ala Phe

1650 1655 1660
 Glu Met Val Gly Ser Asn Ala Thr Ile Val Glu Glu Met Lys Met Trp
 1665 1670 1675 1680
 Leu Leu Lys Gln Lys Gln Thr Gln Gln Trp Asp Ser Pro Val Ala Thr
 1685 1690 1695
 Ala Asp Ala Val Tyr Ala Leu Leu Tyr Arg Gly Thr Asn Leu Leu Asp
 1700 1705 1710
 Asn Gln Gly Asp Val Arg Ile Val Leu Gly Asn Glu Val Leu Glu Thr
 1715 1720 1725
 Ile Ser Pro Ala Lys Thr Thr Val Pro Gly Leu Gly Tyr Ile Lys Lys
 1730 1735 1740
 Thr Phe Thr Asp Lys Lys Thr Val Asn Thr Asp Glu Ile Ile Val Glu
 1745 1750 1755 1760
 Lys Arg Asp Pro Gly Ile Ala Trp Gly Ala Val Tyr Ala Gln Phe Glu
 1765 1770 1775
 Glu Asn Leu Asp Lys Val Val Arg Gln Gly Ser Gly Leu Asn Val Asp
 1780 1785 1790
 Lys Lys Leu Tyr Val Glu Thr Ile Val Asn Asn Asn Arg Arg Leu Gln
 1795 1800 1805
 Pro Val Ile Gly Lys Thr Gln Leu Lys Val Gly Asp Lys Val Val Val
 1810 1815 1820
 Arg Leu Thr Val Arg Leu Asp Arg Thr Met Asp Phe Val Gln Leu Lys
 1825 1830 1835 1840
 Asp Gln Arg Ala Ala Cys Leu Glu Pro Val Glu Val Leu Ser Gly Tyr
 1845 1850 1855
 Arg Asn Val Gly Asp Val Gly Cys Tyr Val Ala Val Lys Asp Ala Ser
 1860 1865 1870
 Thr Asp Phe Phe Phe Asp Thr Leu Asn Lys Gly Thr Tyr Val Leu Glu
 1875 1880 1885
 Tyr Ser Tyr Arg Val Asp Arg Ala Gly Ser Tyr Glu Ala Gly Ile Ala
 1890 1895 1900
 Thr Ile Gln Ser Ala Tyr Ala Pro Glu Tyr Ala Ala His Ser Ala Ser
 1905 1910 1915 1920
 Ala Arg Tyr Glu Val Ser Gln
 1925

<210> 6266

<211> 362

<212> PRT

<213> B.fragilis

<400> 6266

His Arg Val Ile Leu Phe Ser Ser Asn Asp Ser Cys Val Ile Val Ile
 1 5 10 15
 Val Tyr Ile Phe Leu Ile Phe Val Ser Thr Val Ile Phe Ile Ser His
 20 25 30
 Ile Tyr Val Lys Ser Glu Lys Val Asn Lys Ile Thr Ala Phe Leu Trp
 35 40 45
 Val Ile Met Met Thr Leu Phe Val Gly Ser Gln Asp Gly Ile Gly Asn
 50 55 60
 Asp His Ala Asn Tyr Ile Ala Gln Ile Lys Ser Pro Trp Ala Thr Pro
 65 70 75 80
 Gln Glu Pro Phe Thr Leu Phe Ile Phe Tyr Ile Ile Arg Ser Cys Asp
 85 90 95
 Leu Ser Val Tyr Val Phe Phe Tyr Ile Tyr Ala Phe Leu Thr Tyr Tyr
 100 105 110
 Phe Leu Tyr Lys Val Ile Leu Leu Ser Asp Lys Ser Ile Arg Phe Ile
 115 120 125
 Ile Val Met Met Ile Leu Gln Ser Leu Leu Phe Phe Gln Ser Phe Asn

130 135 140
 Leu Ile Arg Gln Ile Leu Ala Cys Ala Ile Phe Leu Tyr Gly Ile Ser
 145 150 155 160
 Leu Ile Leu Asn Asn Lys Lys Gly Tyr Trp Phe Leu Leu Leu Ala Cys
 165 170 175
 Leu Val His Tyr Ser Ala Phe Phe Gly Leu Leu Ile Val Trp Ile Ala
 180 185 190
 Ser Lys Ile Arg Val Ser Thr Val Met Leu Ile Val Tyr Ile Met Ser
 195 200 205
 Val Ala Leu Leu Tyr Thr Gly Gly Phe Ile Gly Asp Phe Ile Ser Lys
 210 215 220
 Tyr Glu Phe Leu Ile Arg Met Thr Tyr Tyr Gly Tyr Tyr Leu Asp Ser
 225 230 235 240
 Ser Leu Ile Asn Asp Asp Val Ala Ala Asn Phe Gly Val Val Tyr Lys
 245 250 255
 Ile Thr Phe Ile Leu Cys Leu Val Val Tyr Thr Lys Arg Lys Phe Phe
 260 265 270
 Lys Ser Asn Gly Gln Ile Leu Leu Phe Asn Leu Phe Phe Val Gly Gln
 275 280 285
 Ile Leu Tyr Asn Leu Ser Ser Ala Asn Ile Thr Ile Gln Arg Ala Thr
 290 295 300
 Tyr Phe Pro Tyr Phe Ser Met Ile Leu Val Ile Pro Leu Leu Ala Lys
 305 310 315 320
 Cys Phe Ser Pro Tyr Trp Asn Ser Arg Leu Ala Leu Val Leu Tyr Ser
 325 330 335
 Leu Tyr Phe Leu Phe Ile Ser Ala Ser Leu Ala Ser Gln Asp Cys Pro
 340 345 350
 Tyr Val Pro Tyr Lys Asn Ile Ile Trp Asn
 355 360

<210> 6267

<211> 281

<212> PRT

<213> B.fragilis

<400> 6267

Arg Ala Ala Ile Arg Ala Ala Ser Leu His Thr Leu Ala Met Ser Ala
 1 5 10 15
 Pro Glu Asn Pro Gly Val Trp Arg Ala Ser Lys Ser Thr Ser Thr Val
 20 25 30
 Ser Ser Ile Leu Met Gly Arg Lys Cys Thr Pro Asn Thr Ser Leu Arg
 35 40 45
 Ser Phe Arg Ser Gly Lys Ser Thr Trp Ile Cys Arg Ser Lys Arg Pro
 50 55 60
 Ala Arg Ser Asn Ala Leu Ser Ser Thr Ser Thr Arg Leu Val Ala Ala
 65 70 75 80
 Arg Ile Ile Thr Pro Leu Phe Glu Pro Lys Pro Ser Ile Ser Val Ser
 85 90 95
 Asn Trp Phe Asn Val Phe Ser Arg Ser Ser Phe Pro Pro Ile Ala Gly
 100 105 110
 Phe Leu Pro Arg Ala Arg Pro Thr Ala Ser Ile Ser Ser Met Lys Thr
 115 120 125
 Ile Gln Gly Ala Phe Ser Leu Ala Cys Leu Lys Arg Ser Arg Thr Arg
 130 135 140
 Asp Ala Pro Thr Pro Thr Asn Ile Ser Thr Lys Ser Glu Pro Ala Lys
 145 150 155 160
 Glu Lys Lys Gly Thr Leu Ala Ser Pro Ala Thr Ala Phe Ala Ser Asn
 165 170 175
 Val Leu Pro Val Pro Gly Gly Pro Thr Asn Arg Ala Pro Leu Gly Ile

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<210> 6268
<211> 440
<212> PRT
<213> B.fragilis
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<400>	6268														
Pro	Met	Lys	Ile	Glu	Gln	Ile	Arg	Met	Lys	Lys	Leu	Ala	Asn	Tyr	Cys
1				5					10					15	
Pro	Leu	Ile	Leu	Leu	Phe	Leu	Phe	Ala	Thr	Pro	Lys	Val	Asn	Ala	Gln
			20					25					30		
Ser	Val	Asp	Val	Val	Ile	Arg	Asp	Asn	Gly	Lys	Glu	Arg	Gln	Glu	Ser
		35					40					45			
Ile	Glu	Leu	Pro	Lys	Ser	Met	Thr	Tyr	Pro	Leu	Asp	Ser	Leu	Leu	Asn
	50					55					60				
Asp	Trp	Lys	Ala	Lys	Asn	Tyr	Ile	Asp	Leu	Gly	Lys	Asp	Cys	Ser	Thr
65					70					75					80
Ala	Glu	Ile	Asn	Pro	Leu	Phe	Ser	Asp	Ser	Val	Tyr	Ile	Asp	Arg	Leu
			85						90					95	
Ser	Arg	Met	Pro	Thr	Val	Met	Glu	Met	Pro	Tyr	Asn	Glu	Ile	Val	Arg
			100					105					110		
Lys	Phe	Ile	Asp	Met	Tyr	Ala	Gly	Arg	Leu	Arg	Asn	Gln	Val	Ser	Phe
		115					120					125			
Met	Leu	Ser	Ala	Cys	Asn	Phe	Tyr	Met	Pro	Ile	Phe	Glu	Glu	Ala	Leu
	130					135					140				
Asp	Ala	Tyr	Asn	Leu	Pro	Leu	Glu	Leu	Lys	Tyr	Leu	Pro	Ile	Ile	Glu
145					150					155					160
Ser	Ala	Leu	Asn	Pro	Ser	Ala	Val	Ser	Arg	Ala	Gly	Ala	Gly	Gly	Leu
			165						170					175	
Trp	Gln	Phe	Met	Ile	Gly	Thr	Gly	Lys	Met	Tyr	Gly	Leu	Glu	Ser	Asn
			180					185					190		
Ser	Leu	Val	Asp	Asp	Arg	Arg	Asp	Pro	Ile	Lys	Ala	Thr	Trp	Ala	Ala
		195					200					205			
Ala	Arg	Tyr	Leu	Lys	Asp	Leu	Tyr	Asp	Ile	Tyr	His	Asp	Trp	Asn	Leu
	210					215					220				
Val	Ile	Ala	Ala	Tyr	Asn	Cys	Gly	Pro	Gly	Thr	Ile	Asn	Lys	Ala	Ile
225					230					235					240
Arg	Arg	Ser	Gly	Gly	Glu	Thr	Asp	Tyr	Trp	Ser	Ile	Tyr	Asn	Tyr	Leu
			245						250					255	
Pro	Lys	Glu	Thr	Arg	Gly	Tyr	Val	Pro	Ala	Phe	Ile	Ala	Ala	Asn	Tyr
		260						265					270		
Val	Met	Thr	Tyr	Tyr	Cys	Asp	His	Asn	Ile	Cys	Pro	Met	Glu	Thr	Asn
		275					280					285			
Ile	Pro	Glu	Ser	Thr	Asp	Thr	Ile	Gln	Val	Asn	Lys	Asn	Leu	His	Phe
	290					295					300				
Gln	Gln	Ile	Ala	Asp	Leu	Cys	Asn	Val	Pro	Met	Asp	Gln	Ile	Arg	Ser

305 310 315 320
 Leu Asn Pro Gln Tyr Lys Lys Glu Ile Ile Pro Gly Glu Ser Lys Ser
 325 330 335
 Tyr Thr Leu Arg Leu Pro Gln Asn Ala Val Ser Ser Phe Ile Asp Arg
 340 345 350
 Gln Asp Thr Ile Tyr Ala His Arg Ala Gly Glu Leu Phe Lys Asn Arg
 355 360 365
 Arg Thr Val Ala Ile Arg Asp Asp Ser Ser Ala Ser Lys Arg Arg Gly
 370 375 380
 Ser Ser Ala Lys Ala Gly Ser Gly Thr Pro Thr Tyr Tyr Lys Ile Lys
 385 390 395 400
 Asn Gly Asp Thr Leu Gly Ala Ile Ala Ala Lys Tyr Gly Val Arg Val
 405 410 415
 Lys Asp Leu Gln Asn Trp Asn Gly Leu Arg Gly Thr Asn Ile Ser Ala
 420 425 430
 Gly Lys Arg Leu Lys Ile Tyr Lys
 435 440

<210> 6269

<211> 379

<212> PRT

<213> B.fragilis

<400> 6269

Leu Ile His Val Arg Met Met Val Leu Lys Asn Lys Trp Lys Asn Arg
 1 5 10 15
 Phe Ile Leu Ile Leu Phe Met Val Gly Phe Val Phe Phe Ala Cys Lys
 20 25 30
 Glu Glu Thr Asp Leu Tyr Phe Asn Gly Asp Ile Thr Val Ile Lys Ser
 35 40 45
 Phe Asp Asn Asp Thr Leu Leu Ser Pro Val Lys Val Glu Leu Glu Asp
 50 55 60
 Ile Tyr Asp Gly Ser Val Leu Ala Tyr Asp Ser Leu Leu Phe Phe Thr
 65 70 75 80
 Ser His Lys Tyr Ser Asp Cys Trp Met Tyr Val Phe Ser Val Asn Ser
 85 90 95
 Gly Lys His Ile Ala Ser Leu Cys Pro Lys Gly Gln Gly Pro Asn Asp
 100 105 110
 Tyr Leu Ser Cys Lys Asn Ser Gln Phe Ile Arg Glu Asn Gly Glu
 115 120 125
 Leu Lys Leu Trp Val Arg Asp Asn Ala Lys Ser Ala Arg Leu Leu Asn
 130 135 140
 Ile Thr Lys Ser Ile Glu Thr Gly Ala Thr Val Cys Asp Ala Ile Ile
 145 150 155 160
 Pro Met Asp Trp Asn Lys Tyr Phe Val Tyr Pro Ala Thr Thr Leu Phe
 165 170 175
 Phe Leu Lys Asp Gly Tyr Ile Leu Gly Gln Asn Gln Cys Glu Glu Gln
 180 185 190
 Tyr Ser Lys Gly Lys Glu Tyr Ile Pro Arg Lys Phe Tyr Leu Tyr Lys
 195 200 205
 Asp Ser Leu Gly Asn Lys Val Lys Glu Tyr Lys Leu Phe Asn Arg Pro
 210 215 220
 Val Ile Leu Lys Asp Asp Lys Tyr Asp Val Leu Ser Gly Met Phe Tyr
 225 230 235 240
 Ala Asn His Ser Tyr Ile His Pro Asp Gln Thr Lys Val Ala Ile Ala
 245 250 255
 Met Gln Arg Val Ala Gln Ile Thr Ile Leu Asp Val Lys Ser Gly Lys
 260 265 270
 Gln Val Gly Tyr Arg Met Asp Asp Thr Leu Asp Phe Ser Asp Ile Glu

275		280		285
Gln Asn Leu Glu Cys Ile Arg Tyr Tyr Tyr Thr Ser Ala Ala Val Asn				
290		295		300
Ser Arg Tyr Ile Phe Ala Leu Tyr Ile Asp Gln Ala Glu Met Gly Gly				
305		310		315
Lys Tyr Pro Phe Lys Ser Lys Thr Val His Val Phe Asp Trp Glu Gly				
		325		330
Arg Pro Val Tyr Lys Ile Gln Leu Asp Lys Glu Ile Ser Trp Ile Thr				
		340		345
Leu Asp Pro Gln Asn Asn Arg Leu Tyr Ala Gln Gly Glu Asp Asp Ser				
		355		360
Ile Trp Ala Tyr Asp Val Ser Trp Leu Ser Lys				365
370		375		

<210> 6270

<211> 272

<212> PRT

<213> B.fragilis

<400> 6270

Met Lys Leu Val Lys Pro Lys Lys Phe Leu Gly Gln His Phe Leu Lys				
1	5		10	15
Asp Leu Lys Val Ala Gln Asp Ile Ala Asp Thr Val Asp Thr Phe Pro				
	20		25	30
Asp Leu Pro Ile Leu Glu Val Gly Pro Gly Met Gly Val Leu Thr Gln				
	35		40	45
Phe Leu Val Lys Lys Glu Arg Leu Val Lys Val Val Glu Val Asp Tyr				
	50		55	60
Glu Ser Val Ala Tyr Leu Arg Glu Ala Tyr Pro Ser Leu Glu Asp Asn				
	65		70	75
Ile Ile Glu Asp Asp Phe Leu Lys Met Asn Leu Gln Arg Leu Phe Asp				
	85		90	95
Gly His Pro Phe Val Leu Thr Gly Asn Tyr Pro Tyr Asn Ile Ser Ser				
	100		105	110
Gln Ile Phe Phe Lys Met Leu Asp Asn Lys Asp Leu Ile Pro Cys Cys				
	115		120	125
Thr Gly Met Ile Gln Lys Glu Val Ala Glu Arg Ile Ala Ala Gly Pro				
	130		135	140
Gly Ser Lys Thr Tyr Gly Ile Leu Ser Val Leu Ile Gln Ala Trp Tyr				
	145		150	155
Arg Val Glu Tyr Leu Phe Thr Val Asn Glu Gln Val Phe Asn Pro Pro				
	165		170	175
Pro Lys Val Lys Ser Ala Val Ile Arg Met Thr Arg Asn Glu Thr Gln				
	180		185	190
Glu Leu Gly Cys Asp Pro Lys Leu Phe Lys Gln Ile Val Lys Thr Thr				
	195		200	205
Phe Asn Gln Arg Arg Lys Thr Leu Arg Asn Ser Ile Lys Pro Ile Leu				
	210		215	220
Gly Lys Asp Cys Pro Leu Thr Glu Asp Ala Leu Phe Asn Lys Arg Pro				
	225		230	235
Glu Gln Leu Ser Val Gln Glu Phe Ile His Leu Thr Asn Gln Val Glu				
	245		250	255
Gln Ala Leu Lys Val Pro Ile Glu Pro Val Ser Gln Ile Glu Asn Pro				
	260		265	270

<210> 6271

<211> 471

<212> PRT

<213> B.fragilis

<400> 6271

Thr Asn Lys Val Gly Asn Val Ile Tyr Lys Thr Cys Leu Pro Tyr Tyr
 1 5 10 15
 Tyr Arg Lys Leu Ser Lys Ala Val Ile Met Asn Glu Glu Tyr Ile Asp
 20 25 30
 Asn Val Lys Glu Leu Ile Glu Glu Lys Asp Ala Asp Lys Val Lys Glu
 35 40 45
 Leu Leu Ile Asp Leu His Pro Ala Asp Ile Ala Glu Leu Cys Asn Glu
 50 55 60
 Leu Asn Pro Glu Glu Ala Arg Phe Val Tyr Arg Leu Leu Asp Asn Glu
 65 70 75 80
 Thr Ala Ala Asp Val Leu Val Glu Met Asp Glu Asp Val Arg Lys Glu
 85 90 95
 Phe Leu Asp Ile Leu Pro Ser Glu Thr Ile Ala Lys Arg Phe Val Asp
 100 105 110
 Tyr Met Asp Thr Asp Asp Ala Val Asp Leu Met Arg Glu Leu Asp Glu
 115 120 125
 Asp Lys Gln Glu Glu Ile Leu Ser His Ile Glu Asp Ile Glu Gln Ala
 130 135 140
 Gly Asp Ile Val Asp Leu Leu Lys Tyr Asp Glu Asn Thr Ala Gly Gly
 145 150 155 160
 Leu Met Gly Thr Glu Met Val Thr Val Asn Glu Asn Trp Ser Met Pro
 165 170 175
 Glu Cys Leu Lys Glu Met Arg Gln Gln Ala Glu Glu Leu Asp Asp Ile
 180 185 190
 Tyr Tyr Val Tyr Val Ile Asp Asp Asp Glu Arg Leu Arg Gly Ile Phe
 195 200 205
 Pro Leu Lys Lys Met Ile Thr Ser Pro Ser Val Ser Lys Val Lys His
 210 215 220
 Val Met Gln Lys Asp Pro Ile Ser Val His Val Asp Thr Pro Ile Asp
 225 230 235 240
 Glu Val Ala Gln Ile Ile Glu Lys Tyr Asp Leu Val Ala Ile Pro Val
 245 250 255
 Leu Asp Ser Ile Gly Arg Leu Val Gly Gln Ile Thr Val Asp Asp Val
 260 265 270
 Met Asp Glu Val Arg Glu Gln Ser Glu Arg Asp Tyr Gln Leu Ala Ser
 275 280 285
 Gly Leu Ser Gln Asp Val Glu Thr Asp Asp Asn Val Leu Arg Gln Thr
 290 295 300
 Thr Ala Arg Leu Pro Trp Leu Leu Ile Gly Met Ile Gly Gly Ile Gly
 305 310 315 320
 Asn Ser Met Ile Leu Gly Asn Phe Asp Ser Thr Phe Ala Ala His Pro
 325 330 335
 Glu Met Ala Leu Tyr Ile Pro Leu Ile Gly Gly Thr Gly Gly Asn Val
 340 345 350
 Gly Thr Gln Ser Ser Ala Leu Val Val Gln Gly Leu Ala Asn Ser Ser
 355 360 365
 Leu Asp Ala Lys Asn Thr Phe Lys Gln Val Ser Lys Glu Ala Val Val
 370 375 380
 Ala Leu Ile Asn Ala Thr Ile Ile Ser Leu Leu Val Tyr Thr Tyr Asn
 385 390 395 400
 Phe Ile Arg Phe Gly Ala Thr Ala Thr Val Thr Tyr Ser Val Ser Ile
 405 410 415
 Ser Leu Phe Ser Val Val Met Phe Ala Ser Ile Phe Gly Thr Leu Val
 420 425 430
 Pro Met Thr Leu Glu Lys Met Lys Ile Asp Pro Ala Ile Ala Thr Gly
 435 440 445
 Pro Phe Ile Ala Ile Thr Asn Asp Ile Ile Gly Met Met Met Tyr Met

450 455 460
 Gly Ile Thr Val Leu Leu Ser
 465 470

<210> 6272
 <211> 367
 <212> PRT
 <213> B.fragilis

<400> 6272
 Asn Met Glu Val Arg Val Trp Asn Tyr Leu Lys Glu Tyr Ala Ser Ser
 1 5 10 15
 Lys Glu Glu Ile Leu Lys Ala Val Glu Asp Val Phe Glu Ser Gly Gln
 20 25 30
 Leu Ile Leu Gly Ala Lys Gly Lys His Phe Glu Gln Ala Tyr Ala Glu
 35 40 45
 Tyr Cys Gly Val Ser His Gly Val Gly Cys Asp Asn Gly Thr Asn Ala
 50 55 60
 Ile Ser Leu Ala Leu Leu Ala Val Gly Val Lys Pro Gly Asp Glu Val
 65 70 75 80
 Ile Thr Val Pro Asn Thr Ala Ile Pro Thr Val Ser Ala Ile Val Thr
 85 90 95
 Val Gly Ala Thr Pro Val Phe Val Asp Ile Asp Pro Leu Thr Tyr Leu
 100 105 110
 Met Asp Val Thr Lys Val Glu Ser His Ile Thr Glu Lys Thr Lys Cys
 115 120 125
 Ile Leu Pro Val His Leu Tyr Gly Gln Cys Val Asp Met Asp Glu Leu
 130 135 140
 Ile Ala Leu Ala Trp Lys Tyr Lys Leu Ser Ile Ile Glu Asp Cys Ala
 145 150 155 160
 Gln Ala Gln Gly Ala Glu Tyr Lys Gly Tyr Lys Ala Gly Ser Met Ser
 165 170 175
 Asn Ala Ser Thr Thr Ser Phe Tyr Pro Thr Lys Ile Leu Gly Ala Tyr
 180 185 190
 Gly Asp Gly Gly Met Ile Ile Thr Asn Asp Ala Glu Val Glu Gly Lys
 195 200 205
 Leu Arg Arg Leu Arg Phe Tyr Gly Ala Glu Lys Met Tyr Tyr Ala Ile
 210 215 220
 Glu His Gly Tyr Asn Ser Arg Leu Asp Glu Val Gln Ala Ala Ile Leu
 225 230 235 240
 Leu Thr Lys Leu Pro His Leu Asp Gln Tyr Ile Lys Arg Arg Arg Glu
 245 250 255
 Ile Ala Tyr Leu Tyr Asn Glu Leu Leu Lys Asp Thr Asn Leu Ile Leu
 260 265 270
 Pro Lys Glu Ala Asp Tyr Gly Lys His Ala Tyr Tyr Leu Tyr Val Val
 275 280 285
 Arg His Ser Asn Arg Asp Glu Ile Met Ala Ala Leu Lys Glu Asn Asn
 290 295 300
 Ile Phe Val Asn Ile Ser Tyr Pro Trp Pro Ile His Thr Met Thr Gly
 305 310 315 320
 Tyr Gln Phe Leu Gly Tyr Lys Glu Gly Asp Phe Pro Glu Thr Glu Ser
 325 330 335
 Ala Ala Lys Glu Ile Phe Ser Leu Pro Met Tyr Pro Thr Leu Thr Asp
 340 345 350
 Glu Glu Val His Tyr Val Ser Asp Ile Leu His Lys Ile Leu Lys
 355 360 365

<210> 6273
 <211> 379

<212> PRT

<213> B.fragilis

<400> 6273

Lys Pro Leu Phe Leu Tyr Ser Lys Gln Leu Ile Ile Ile Lys Gln Arg
 1 5 10 15
 Arg Met Lys Arg Ser Leu Leu Phe Ile Phe Thr Leu Leu Thr Ile Thr
 20 25 30
 Leu Ser Ala Val Ala Gln Pro Arg Ile Ser Ser Asn Lys Glu Thr His
 35 40 45
 His Phe Gly Gln Ile Glu Trp Lys Arg Pro Val Ser Val Glu Tyr Thr
 50 55 60
 Ile Thr Asn Thr Gly Asp Lys Pro Leu Val Leu Thr Asn Val Thr Thr
 65 70 75 80
 Ser Cys Ala Cys Ser Val Ala Asn Trp Thr Lys Thr Pro Ile Ala Pro
 85 90 95
 Gly Glu Lys Gly Thr Val Ser Ala Thr Phe Asp Ala Lys Ala Leu Gly
 100 105 110
 His Phe Asn Lys Ser Ile Gly Ile Tyr Ser Asn Ala Gln Pro Ser Leu
 115 120 125
 Val Tyr Leu Asn Phe Asp Gly Glu Val Val Gln Glu Ile Lys Asp Phe
 130 135 140
 Thr Lys Thr His Pro Tyr Ala Ile Gly Gln Ile Arg Ile Asp Arg Thr
 145 150 155 160
 Asp Ile Asp Phe Pro Asp Ala His Ser Gly Glu Lys Pro Val Ile Thr
 165 170 175
 Leu Gly Val Val Asn Leu Ser Asp Arg Pro Tyr Glu Pro Val Leu Met
 180 185 190
 His Leu Pro Pro Tyr Leu Lys Met Glu Thr Asn Pro Thr Val Leu Leu
 195 200 205
 Lys Gly Lys Lys Gly Thr Ile Thr Leu Thr Leu Asp Thr Lys Gln Leu
 210 215 220
 Met Asp Leu Gly Leu Thr Gln Ser Ser Val Tyr Leu Ala Arg Phe Ala
 225 230 235 240
 Gly Asp Lys Val Gly Glu Glu Asn Glu Ile Pro Val Ser Ala Val Leu
 245 250 255
 Leu Pro Asp Phe Ser Gly Met Thr Glu Gln Asp Lys Ala Val Ala Pro
 260 265 270
 Val Ile Arg Leu Ser Glu Ser Lys Ile Asp Leu Ser Gln Val Leu Ala
 275 280 285
 Lys Lys Asn Lys Ala Arg Arg Asp Ile Val Ile Thr Asn Thr Gly Lys
 290 295 300
 Ser Pro Leu Gln Ile Ser Lys Leu Gln Val Phe Asn Pro Ala Val Gly
 305 310 315 320
 Val Ala Leu Lys Lys Thr Val Leu Gln Pro Gly Glu Ser Thr Arg Leu
 325 330 335
 Arg Val Thr Val Leu Lys Lys Asn Leu Gly Lys Lys Lys Arg His Leu
 340 345 350
 Arg Ile Leu Met Ile Thr Asn Asp Pro Val Gln Pro Lys Val Glu Ile
 355 360 365
 Asp Val Lys Ala Thr Asn Asn Glu Ser His Asn
 370 375

<210> 6274

<211> 402

<212> PRT

<213> B.fragilis

<400> 6274

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Leu Arg Ile Phe Arg Ile Met Phe Trp Arg Trp Glu Thr Asn Val Lys
1          5          10          15
Leu Leu Arg Val Tyr Lys Ile Ile Leu Met Asn Lys Arg Ile Trp
20          25          30
Leu Ser Leu Ala His Met Gly Gly Arg Glu Gln Asp Phe Ile Lys Glu
35          40          45
Ala Phe Asp Thr Asn Trp Val Val Pro Leu Gly Pro Asn Val Asp Ala
50          55          60
Phe Glu Gln Ser Leu Val Glu Tyr Leu His Glu Asp Arg Tyr Val Val
65          70          75          80
Ala Leu Ser Ala Gly Thr Ala Ala Leu His Leu Gly Leu Ile Leu Leu
85          90          95
Asp Val Lys Pro Gly Asp Glu Val Ile Cys Gln Ser Phe Thr Phe Ala
100         105         110
Ala Ser Ala Asn Pro Ile Ser Tyr Leu Glu Ala Lys Pro Val Phe Val
115         120         125
Asp Ser Glu Lys Asp Thr Trp Asn Met Asp Pro Val Leu Leu Glu Glu
130         135         140
Ala Ile Lys Asp Arg Leu Arg Lys Thr Gly Arg Leu Pro Lys Ala Ile
145         150         155         160
Ile Pro Val His Leu Tyr Gly Met Pro Ala Lys Met Asp Glu Ile Met
165         170         175
Asp Ile Ala Gly Arg Tyr Gly Ile Ser Val Leu Glu Asp Ala Ala Glu
180         185         190
Ala Leu Gly Ser Glu Leu Asn Gly Arg Lys Cys Gly Thr Phe Gly Glu
195         200         205
Leu Ala Ala Leu Ser Phe Asn Gly Asn Lys Met Ile Thr Thr Ser Gly
210         215         220
Gly Gly Ala Leu Ile Cys Arg Thr Glu Glu Glu Ala Arg Gln Thr Lys
225         230         235         240
Phe Tyr Ala Thr Gln Ala Arg Asp Ala Ala Pro His Tyr Gln His Thr
245         250         255
His Ile Gly Tyr Asn Tyr Arg Met Ser Asn Ile Cys Ala Gly Ile Gly
260         265         270
Arg Gly Gln Met Phe Val Leu Asp Glu His Ile Ala Arg Arg Arg Ala
275         280         285
Ile His Ser Leu Tyr Val Asp Leu Leu Lys Asp Val Ala Gly Ile Thr
290         295         300
Val Met Glu Asn Pro Asp Ser Arg Phe Ala Ser Asn Phe Trp Leu Thr
305         310         315         320
Cys Ile Leu Val Asp Pro Lys Leu Ala Gly Lys Ser Arg Glu Asp Ile
325         330         335
Arg Leu Arg Leu Asp Ser Glu Asn Ile Glu Thr Arg Pro Leu Trp Lys
340         345         350
Pro Met His Leu Gln Pro Val Phe Thr Asp Ala Pro Phe Tyr Gly Asn
355         360         365
Gly Thr Ser Glu Arg Leu Phe Asp Ile Gly Leu Cys Leu Pro Ser Gly
370         375         380
Pro Thr Leu Thr Asp Glu Asp Ile Arg Arg Val Val Asp Thr Ile Arg
385         390         395         400
Ala Ile

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<210> 6275

<211> 279

<212> PRT

<213> B.fragilis

<400> 6275


```

Met Gln Pro Phe Met Glu Leu Ser Ala Asn Tyr Ile Lys Arg Ile Glu
1      5      10      15
Ile Asp Gly Leu Trp Asp Arg Phe Asn Ile Val Trp Asp Leu Arg Pro
20      25      30
Asp Val Asn Ile Leu Ser Gly Ile Asn Gly Val Gly Lys Thr Thr Ile
35      40      45
Leu Asn Arg Ser Val Gly Tyr Leu Glu Gln Leu Ser Gly Glu Val Lys
50      55      60
Ser Asp Glu Lys Asn Gly Val His Ile Phe Phe Asp Asn Pro Glu Ala
65      70      75      80
Thr Tyr Ile Pro Tyr Asp Val Ile Arg Ser Tyr Asp Arg Pro Leu Ile
85      90      95
Met Gly Asp Phe Thr Ala Arg Met Ala Asp Lys Asn Val Lys Ser Glu
100     105     110
Leu Asp Trp Gln Leu Tyr Leu Leu Gln Arg Arg Tyr Leu Asp Tyr Gln
115     120     125
Val Asn Ile Gly Asn Lys Met Ile Glu Leu Leu Ser Ser Asn Asn Glu
130     135     140
Glu Glu Arg Ser Lys Ala Ala Thr Leu Ser Ile Ala Lys Arg Arg Phe
145     150     155     160
Gln Asp Met Val Asp Glu Leu Phe Ser Tyr Thr Arg Lys Lys Ile Asp
165     170     175
Arg Arg Arg Asn Asp Ile Ala Phe Tyr Gln Asp Gly Glu Leu Leu Phe
180     185     190
Pro Tyr Lys Leu Ser Ser Gly Glu Lys Gln Met Leu Val Ile Leu Leu
195     200     205
Thr Val Leu Val Gln Asp Asn Ala His Cys Val Leu Phe Met Asp Glu
210     215     220
Pro Glu Ala Ser Leu His Ile Glu Trp Gln Gln Lys Leu Ile Ser Met
225     230     235     240
Ile Arg Glu Leu Asn Pro Asn Val Gln Ile Ile Leu Thr Thr His Ser
245     250     255
Pro Ala Val Ile Met Glu Gly Trp Leu Asp Ala Val Thr Glu Val Ser
260     265     270
Asp Ile Ala Thr Ser Tyr Lys
275

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<210> 6276

<211> 100

<212> PRT

<213> B.fragilis

<400> 6276

```

Val Ser His Ser Gln Glu Ile Lys Lys Arg Val Ser Phe Ser Gly His
1      5      10      15
Pro Leu Pro Tyr Ala Ser Ala Ser His Thr Leu Leu Leu Phe Asp Phe
20      25      30
Pro Tyr Tyr Thr Arg Leu Gly Thr Asn Thr Ile Lys Asp Ser His Phe
35      40      45
Tyr Thr Arg Tyr Gly Ile Lys Val Gly Ala Ser Gln Glu Ser Ile Pro
50      55      60
Ile Trp Val Tyr Cys Tyr Ser Phe Tyr Leu Ile Thr Ser Met Thr Phe
65      70      75      80
Leu Ile Phe Ser Leu Glu Pro Thr Phe Ser Tyr Leu Leu His Phe Phe
85      90      95
Ser Thr Pro Ser
100

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<210> 6277

<211> 77
 <212> PRT
 <213> B.fragilis

<400> 6277

Glu	Ser	Arg	Lys	Cys	Asn	Gly	Gln	Thr	Val	Arg	Glu	Ser	Lys	Gly	Thr
1				5					10					15	
Tyr	Leu	Thr	Glu	Tyr	Val	Trp	Glu	Asn	Lys	Leu	Asp	Ile	Glu	Arg	
			20				25					30			
Thr	Ala	Trp	Gln	Tyr	Asp	Pro	Tyr	Thr	His	Glu	Trp	Val	Asp	Met	Pro
		35					40					45			
Leu	Val	Ser	Lys	Gly	Lys	Lys	Gln	Ser	Glu	Glu	Leu	Pro	Glu	Pro	Glu
	50					55					60				
Tyr	Gly	Asp	Lys	Gln	Gln	Cys	Lys	Cys	Leu	Ser	Glu	Arg			
65					70					75					

<210> 6278
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 6278

Thr	Cys	Leu	Trp	Tyr	Arg	Lys	Ala	Lys	Asn	Asn	Leu	Lys	Asn	Phe	Gln
1				5					10					15	
Ser	Leu	Ser	Met	Val	Thr	Asn	Asn	Asn	Val	Ser	Val	Ser	Gln	Lys	Gly
			20					25					30		
Lys	Tyr	Gly	Ser	Val	Arg	Thr	Ser	Leu	Thr	His	Val	Tyr	Asn	Lys	Gly
		35					40					45			
Gln	Tyr	Pro	Asn	Gln	Lys	Leu	Asn	Lys	Ile	Thr	Tyr	Ser	Val	Ser	Gly
	50					55					60				
Asp	Met	Lys	Trp	Lys	Lys	Phe	Ser	Phe	Asp	Gly	Gly	Leu	Thr	Tyr	Asn
65				70					75						80
Lys	Arg	Phe	Tyr	Pro	Asn	Asp	Met	Gly	Ala	Gly	Tyr	Gly	Gly	Ser	Gly
			85					90						95	
Phe	Leu	Tyr	Asn	Leu	Leu	Val	Trp	Ser	Gly	Ala	Glu	Tyr	Asp	Ile	Arg
		100						105						110	
Asp	Tyr	Lys	Asn	Tyr	Trp	Ile	Lys	Gln	Asp	Glu	Gln	Gln	Asn	Trp	Met
	115					120						125			
Asp	Thr	Lys	Trp	Tyr	Asp	Asn	Pro	Tyr	Phe	Ile	Ala	Asn	Glu	Ile	Val
	130					135					140				
Arg	Ser	Ser	Asp	Tyr	Asp	Leu	Ile	Asn	Gly	Tyr	Leu	Ser	Ala	Asn	Tyr
145					150					155					160
Asp	Phe	Thr	Pro	Trp	Leu	Asn	Leu	Ser	Leu	Arg	Ser	Gly	Leu	Asp	Ser
			165					170						175	
Tyr	Ser	Gln	Lys	Lys	Glu	Trp	Arg	Asn	Ala	Val	Ser	Ala	Val	Gly	Gly
		180						185					190		
Trp	His	Lys	Gln	Gly	Tyr	Tyr	Gly	Leu	Gln	Arg	Leu	Gly	Gly	Tyr	Ser
	195						200						205		
Leu	Asn	Asn	Asp	Leu	Ile	Leu	Ser	Ala	Asp	His	Lys	Phe	Gly	Asp	Phe
	210					215						220			
Asn	Val	Asp	Gly	Phe	Ile	Gly	Gly	Asn	Val	Tyr	Tyr	Trp	Lys	Ser	Asp
225					230					235					240
Asn	Ile	Leu	Gly	Glu	Thr	Gln	Asn	Gly	Leu	Lys	Ile	Pro	Gly	Tyr	Tyr
		245						250						255	
Ser	Leu	Lys	Ser	Ser	Ile	Asp	Pro	Val	Lys	Thr	Thr	Ser	Gly	Ile	Thr
		260						265					270		
Lys	Lys	Leu	Val	Thr	Ser	Val	Tyr	Ala	Lys	Ala	Ser	Val	Ser	Trp	Lys
	275						280						285		
Ser	Thr	Leu	Phe	Leu	Asp	Val	Thr	Gly	Arg	Asn	Asp	Trp	Ser	Ser	Ser

290 295 300
 Leu Pro Ser Glu Thr Arg Ser Tyr Phe Tyr Pro Ser Val Ala Gly Ser
 305 310 315 320
 Val Val Leu Ser Gln Phe Ile Pro Met Pro Glu Val Ile Asp Phe Trp
 325 330 335
 Lys Val Arg Gly Ala Trp Thr Gln Thr Lys Ser Asp Leu Gly Val Tyr
 340 345 350
 Asp Thr Asn Asn Thr Tyr Ser Val Ser Thr Asp Leu Trp Asn Gly Glu
 355 360 365
 Ser Ala Ala Tyr Tyr Pro Thr Ser Ile Arg Gly Val Ala Val Lys Pro
 370 375 380
 Ser Ala Thr Arg Ser Tyr Glu Ile Gly Thr Ala Ile His Met Phe Lys
 385 390 395 400
 Asn Arg Leu Lys Leu Asp Phe Thr Tyr Tyr Asn Lys Leu Tyr Tyr Asn
 405 410 415
 Leu Thr Arg Ser Ala Gly Ile Ser Asn Ser Ser Gly Phe Thr Ser Thr
 420 425 430
 Leu Ile Asn Ile Asp Glu Glu Tyr Val Gly Arg Gly Val Glu Leu Thr
 435 440 445
 Leu Ser Gly Asp Ile Ile Arg Thr Arg Asp Leu Lys Trp Glu Ser Ser
 450 455 460
 Phe Asn Trp Ser Arg Asp Arg Trp Tyr Tyr Thr Lys Ile Asp Pro Val
 465 470 475 480
 Tyr Ser Thr Gln Lys Pro Trp Val Ala Val Gly Lys Arg Trp Asp Trp
 485 490 495
 Tyr Gly Ile Tyr Asp Trp Glu Arg Asp Ser Gln Gly Ser Leu His His
 500 505 510
 Gly Gly Gly Arg Ser Asn Val
 515

<210> 6279

<211> 274

<212> PRT

<213> B.fragilis

<400> 6279

Gln Thr Arg Phe Ala Thr Glu Arg Ile Cys Gly Ala Thr Gly Pro Phe
 1 5 10 15
 Pro Asp Pro Asp Arg Ala Gly Pro Asn Ile Pro Phe Ser Ile Arg Arg
 20 25 30
 Thr Pro Phe Arg His Pro Val Ser Val Gly Tyr Ser Asn Ile Tyr Ser
 35 40 45
 Phe Cys Arg Asp Phe Val Ser Thr Pro Arg Phe Leu Gly Ala Phe Pro
 50 55 60
 Trp Leu Glu Leu Ala Gly Thr Ile Ala Pro Leu Leu Ala Ala Tyr Asn
 65 70 75 80
 Ala Asn Ala Ser Ala Leu Ser Leu His Ile Glu Ser Pro Gln Ala Tyr
 85 90 95
 Trp Asp Ala Ala Glu Asp Arg Ile Arg Glu Ile Cys Lys Arg Lys Gly
 100 105 110
 Val Pro Tyr Ser Ala Arg Met Leu Glu Glu Phe Lys Asp Glu Ala Met
 115 120 125
 Glu Lys Phe Ala Ser Gly Val Thr Gly Arg Glu Asn Val Gly Lys Tyr
 130 135 140
 Met His Thr Thr Arg Phe Trp Asp Ala Asp Ala Asn Asp Phe Gln Gly
 145 150 155 160
 Trp Thr Ile Thr Pro Ile Asp Lys Lys Ile Arg Asp Tyr Ile Glu Ser
 165 170 175
 Gln Ile Lys Ile Ala Asn Lys Ala Asp Ala Ala Ala Thr Ser Gly Phe

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<210> 6280
<211> 158
<212> PRT
<213> B.fragilis
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<210> 6281
<211> 151
<212> PRT
<213> B.fragilis
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<400> 6281															
Asn	Cys	Ser	Ala	Met	Val	Asp	Leu	Gln	Gln	Tyr	Glu	Glu	Tyr	Trp	Ser
1				5					10					15	
Gly	Ile	Thr	Glu	Arg	Ile	Pro	Gln	Ile	Lys	Lys	Val	Val	Pro	Val	Thr
			20					25					30		
Phe	Asp	Pro	Asp	Met	Gly	Ala	Leu	Val	Gln	Gly	Leu	Lys	Ala	Asp	Glu
		35					40					45			
Leu	Pro	Ala	Leu	Leu	Leu	Ile	Ile	Pro	Ser	Ala	Lys	Gly	Lys	Ser	Pro
	50					55					60				
Asp	Val	Asp	Asn	Leu	Leu	Glu	Leu	Asn	Leu	Cys	Val	Ala	Phe	Leu	Met
65					70					75					80
Asp	Lys	Thr	Asp	Pro	Gln	Arg	Lys	Gly	Thr	Tyr	Gln	Val	Leu	Lys	Glu
				85					90					95	

Leu Gln Pro Val Met Glu Lys Met Lys Ala Gln Met Ile Asp Asp Lys
 100 105 110
 Ala Ala Gly Cys His Leu Leu Ser Arg Leu Asp Leu Ser Ser Leu Ser
 115 120 125
 Thr Ile Pro Glu Ala Gly Phe Tyr Ser Val Phe Ala Gly Trp Ser Leu
 130 135 140
 Gly Phe Glu Phe Glu Thr Pro
 145 150

<210> 6282
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6282
 Glu Ala Met Lys Tyr Phe Thr Ile Lys Glu Leu Ser His Ser Asp Thr
 1 5 10 15
 Ala Val Ala Arg Gly Ile Asp Asn Thr Pro Thr Gly Glu Val Val His
 20 25 30
 Asn Leu Thr Glu Leu Val Glu Asn Val Leu Asp Pro Leu Arg Glu Lys
 35 40 45
 Tyr Gly Lys Pro Ile Arg Val Ser Ser Gly Tyr Arg Ser Ala Val Leu
 50 55 60
 Asn Arg Ser Val Asn Gly Ala Thr Ser Ser Gln His Leu Leu Gly Gln
 65 70 75 80
 Ala Ala Asp Ile Thr Val Gly Ser Lys Glu Gly Asn Arg Arg Leu Phe
 85 90 95
 Glu Ile Ile Arg Lys Glu Leu Pro Phe Asp Gln Leu Ile Asp Glu Lys
 100 105 110
 Asp Phe Ser Trp Val His Val Ser Phe Arg Thr Gly Lys Asn Arg Lys
 115 120 125
 Gln Val Leu Lys Leu
 130

<210> 6283
 <211> 948
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (908)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6283
 Glu Ser Val Asn Asp Leu Glu Leu Met Gln Ala Ala Val Arg Ala Lys
 1 5 10 15
 Asp Phe Arg Ile Pro Leu Glu Asp Leu Gly Lys Tyr Leu Gln Phe Ala
 20 25 30
 Arg Leu Lys Ala Gln Gln Thr Gly Gln Ser Val Asp Tyr Leu Thr Asp
 35 40 45
 Ser Ile Ile Thr Gly Leu Gly Arg Lys Ser Leu Leu Ile Leu Asp Asn
 50 55 60
 Leu Gly Leu Ser Ala Ala Glu Val Asn Glu Glu Met Ala Lys Thr Gly
 65 70 75 80
 Asp Leu Met Ala Ala Val Ala Ala Ile Val Asp Arg Gln Leu Ala Gln
 85 90 95
 Ala Gly Glu Asn Tyr Val Ser Ala Ala Asp Lys Ala Ala Gln Lys Ala
 100 105 110

Ala Glu Leu Gln Asn Arg Gln Met Glu Ile Gly Arg Leu Leu Leu Pro
 115 120 125
 Leu Gln Glu Lys Trp Ser Gly Leu Phe Gln Ser Leu Lys Leu Gly Phe
 130 135 140
 Ser Asp Val Ala Leu Arg Val Leu Glu His Lys Lys Ser Ile Ile Thr
 145 150 155 160
 Leu Ile Ser Val Val Thr Gly Phe Ile Leu Val Tyr Lys Thr Val Ile
 165 170 175
 Leu Leu Gln Lys Thr Trp Asn Gly Leu Leu Met Leu Gly Lys Ala Val
 180 185 190
 Gly Leu Ala Tyr Ala Ser Val Val Ala Met Gln Arg Gly Asn Ile Leu
 195 200 205
 Arg Ser Ala Ala Ala Met Lys Met Tyr Asn Ala Ser Val Ala Ser Asn
 210 215 220
 Asn Ile Leu Val Lys Ala Cys Thr Ala Ser Thr Tyr Leu Phe Ala Ala
 225 230 235 240
 Ala Lys Ala Val Leu Thr Gly Asn Ile Asn Lys Ala Arg Ile Ala Met
 245 250 255
 Gln Ala Phe Tyr Ala Ile Thr Lys Ile Ser Pro Leu Ala Ile Val Ala
 260 265 270
 Thr Val Val Ala Ala Leu Thr Tyr Lys Leu Val Ser Tyr Arg Arg Glu
 275 280 285
 Leu Thr Ala Thr Glu Lys Ala Glu Arg Ser Leu His Arg Val Arg Ala
 290 295 300
 Gln Ala Ala Asp Thr Val Ala Thr Glu Thr Arg Glu Leu Asn Thr Leu
 305 310 315 320
 Leu Gly Ile Ala Arg Asn Glu Lys Ile Ser Lys Glu Gln Arg Met Glu
 325 330 335
 Ala Ile Lys Arg Leu Asn Ala Leu Ser Glu Glu Tyr Leu Gly Gly Leu
 340 345 350
 Arg Leu Glu Thr Ile Asn Thr Arg Glu Ala Thr Ala Ala Val Lys Asp
 355 360 365
 Tyr Thr Asp Asn Leu Leu Ser Met Ala Arg Ile Arg Ser Ala Asn Ser
 370 375 380
 Arg Leu Glu Glu Ile Gln Lys Glu Lys Arg Ala Leu Glu Glu Gln Arg
 385 390 395 400
 Lys Asp Ile His Ala Asn Arg Asn Leu Trp Asp Ser Phe Lys Leu Gly
 405 410 415
 Leu Ala Lys Gly Phe Asn Ser Leu Ser Val Ala Val Lys Gly Tyr Ser
 420 425 430
 Asp Ala Trp Ser Glu Gly Val Ile His Asp Tyr Phe Ala Arg Glu Phe
 435 440 445
 Asp Gln Ile Gln Ala Leu Asn Arg Glu Glu Lys Lys Leu Thr Gln Glu
 450 455 460
 Ile Thr Ala Ser Gln Gln Asp Ile Ile Lys Val Asp Thr Gln Ser Glu
 465 470 475 480
 Ala Lys Thr Lys Asp Leu Ile Gln Ala Lys Lys Glu Glu Ile Ala Gln
 485 490 495
 Ala Glu Arg Glu Val Ala Ser Thr Pro Ala Leu Leu Ala Ala Lys Asn
 500 505 510
 Arg Lys Leu Gln Gln Leu Asn Glu Glu Leu Lys Ala Leu Gln Gln Leu
 515 520 525
 Gly Thr Ile Arg Glu Thr Pro Asp Gly Phe Ala Ser Gln Thr Asp Lys
 530 535 540
 Val Leu Ser Ala Leu Asn Glu Arg His Glu Lys Glu Leu Leu Lys Ile
 545 550 555 560
 Arg Glu Asn Lys Glu Arg Gln Gln Gln Thr Gln Ala Gln Tyr Asp Lys
 565 570 575
 Ala Val Leu Ala Glu Asp Ile Arg Phe His Thr Gln Arg Leu Val Ile

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<210> 6284
<211> 316
<212> PRT
<213> B.fragilis
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Tyr	Thr	Asn	Met	Lys	Leu	Ile	Phe	Asp	Lys	Asp	Ser	Asn	Gly	Thr	Gln
1				5					10					15	
Glu	Leu	Val	Asp	Ala	Leu	Gly	Leu	Ile	Asp	Val	Arg	Thr	Asp	Phe	Ser
			20					25					30		
Lys	Trp	Lys	Pro	Tyr	Ile	Pro	Leu	Ser	Ile	Arg	Arg	Leu	Thr	Ala	Ile

35 40 45
 Ile Gly Gln Glu Val Tyr Asp Lys Val Leu Asp Phe Tyr Gln Ser Ala
 50 55 60
 Ser Val Asp Pro Asp Gly Lys Leu Thr Arg Leu Leu Gly Met Val Gln
 65 70 75 80
 Gln Ser Val Ala Leu Phe Thr Trp Leu Lys Ile Ile Pro Thr Leu Asp
 85 90 95
 Ala Gln His Gly Asn Thr Gly Arg Gln Lys Arg Leu Gly Glu His Glu
 100 105 110
 Lys Gly Leu Thr Ala Leu Gln Glu Tyr Lys Asp Glu Ala Asn Ile Leu
 115 120 125
 Ser Gln Ala Tyr Glu Ser Val Asp Ala Leu Ile Ala Tyr Leu Glu Gln
 130 135 140
 Glu Lys Phe Asp Phe Trp Ile Gln Ser Pro Lys Arg Lys Ala Val Ser
 145 150 155 160
 Glu Leu Leu Leu Asn Ser Lys Glu Ala Phe Asp Phe Tyr Tyr Val Thr
 165 170 175
 Gly Ser His Arg Leu Phe Leu Thr Leu Ala Pro Ile Ile Arg Glu Val
 180 185 190
 Gln Gln Arg His Ile Ile Pro Ile Ile Thr Tyr Gly Arg Tyr Glu Lys
 195 200 205
 Leu Val Ala Gly Gln Gln Val Ala Glu Gly Phe Arg Asp Ala Val Cys
 210 215 220
 Arg Pro Leu Ala Leu Leu Ser Met Ser Lys Ala Val Glu Arg Leu Pro
 225 230 235 240
 Val Glu Val Leu Pro Asp Gly Val Val Gln Val Gln Leu Ala Gly Ser
 245 250 255
 Val Arg Glu Lys Leu Arg Ala Glu Ala Glu Ala Arg Lys Thr Val Ala
 260 265 270
 Lys Ser Leu Glu Gln Asp Gly Met Arg Asp Leu Ala Ala Leu Glu Asp
 275 280 285
 Leu Val Ala Ala Leu Asp Ala Ala Pro Asp Glu Pro Asp Leu Tyr Val
 290 295 300
 Pro Ser Ile Thr Leu Gln Ser Lys Gly Ile Thr Phe
 305 310 315

<210> 6285

<211> 215

<212> PRT

<213> B.fragilis

<400> 6285

Asn Thr Asp Met Ala Arg Arg Ser Ala Thr Val Phe Met Pro Asp Tyr
 1 5 10 15
 Arg Lys Leu Ser Lys Glu Trp Lys Tyr Val Arg Ile Pro Lys Asp Thr
 20 25 30
 Leu Ser Phe Cys Pro Gly Asp Gly Pro Pro Ile Phe Val Leu Lys Asn
 35 40 45
 Asn Val Met Gly Lys Leu Gln Pro Asp Tyr Ile Thr Trp Thr Leu Leu
 50 55 60
 Val Asn Ala Asp Gly Leu Gln Lys Glu Met Leu Lys Val Arg Asn Asn
 65 70 75 80
 Thr Lys Glu Leu Lys Ala Glu Asn Val Arg Leu Lys Ser Ser Met Glu
 85 90 95
 Asn Leu Ala Met Gln Gly Lys Leu Gln Ser Lys Glu Tyr Lys Glu Leu
 100 105 110
 Asn Ala Gln Leu Lys Ala Asn Asn Arg Thr Ile Ser Glu Asn Gly Glu
 115 120 125
 Lys Leu Arg Leu Leu Glu Ser Arg Leu Asn Asn Ala Asp Lys Ser Tyr

130		135		140											
Ala	Gln	Leu	Ser	Lys	Gln	Ala	Arg	Gln	Leu	Arg	Arg	Glu	Leu	Asp	Asn
145		150		155		160									
Thr	Val	Lys	Ser	Leu	Gln	Pro	Gln	Glu	Tyr	Ala	Arg	Leu	Glu	Ala	Glu
		165		170		175									
Leu	Ala	Lys	Thr	Lys	Glu	Ala	Met	Glu	Gln	Leu	Arg	Pro	Lys	Thr	Arg
		180		185		190									
Gly	Gly	Glu	Arg	Val	Ile	Phe	Gln	Pro	Tyr	Gln	Asp	Glu	Ile	Arg	Gly
		195		200		205									
Ser	Pro	Val	Phe	Ser	Pro	Val									
210		215													

<210> 6286

<211> 264

<212> PRT

<213> B.fragilis

<400> 6286

Ile	Met	Glu	Ile	Arg	Arg	Thr	Gly	Asn	Thr	Gly	Phe	Ile	Asp	Thr	Gly
1		5		10		15									
Glu	Gly	Gln	Leu	Ile	Ser	Phe	Ala	Met	Gly	Lys	Gly	Trp	Ser	Pro	Ser
		20		25		30									
Ser	Ile	Ser	Phe	Ser	Arg	Pro	Glu	Ser	Trp	Gln	Thr	Arg	Lys	Ile	Arg
		35		40		45									
Val	Ala	Gly	Val	Asn	Ile	Val	Pro	Met	Gly	Ala	Asn	Asn	Asp	Leu	Pro
		50		55		60									
Gly	Asp	Val	Gln	Arg	Leu	Leu	Asp	Asn	Phe	Tyr	Gly	Gly	Glu	Gly	Ile
		65		70		75									
Met	Gly	Lys	Ile	Gln	Gly	Leu	Gln	Trp	Gly	Glu	Gly	Pro	Arg	Phe	Phe
		85		90		95									
Glu	Glu	Ala	Ile	Asp	Ser	Glu	Asn	Asn	Arg	Phe	Tyr	Arg	Lys	Trp	Ile
		100		105		110									
Leu	Asp	Asp	Val	Ile	Gln	Ala	Asp	Leu	Glu	Ser	Trp	Asp	Tyr	Arg	Asp
		115		120		125									
Tyr	Met	Leu	Arg	Cys	Leu	Val	Asp	Leu	Val	His	Met	Gln	Gly	Phe	Trp
		130		135		140									
Val	Lys	Phe	Ile	Arg	Asn	Arg	Gly	Pro	Arg	Ile	Gly	Glu	Asp	Gly	Arg
		145		150		155									
Ile	Ile	Arg	Leu	Glu	His	Ile	Pro	Tyr	Arg	Lys	Cys	Arg	Phe	Glu	Tyr
		165		170		175									
Pro	Asp	Asp	Arg	His	Asp	Leu	Pro	Gln	Asn	Val	Tyr	Val	Gly	Arg	Leu
		180		185		190									
Gly	Pro	Ser	Pro	Ile	Pro	Thr	Gly	Leu	Gly	Gln	Ile	Ser	Arg	Phe	Gln
		195		200		205									
Ser	Gly	Gly	Pro	Arg	Ser	Gly	Ile	Arg	Tyr	Arg	Ser	Ala	Ile	Pro	Thr
		210		215		220									
Tyr	Thr	Pro	Phe	Ala	Gly	Thr	Leu	Ser	Ala	Arg	Pro	Val	Ser	Trp	Gly
		225		230		235									
Leu	Ser	Arg	Gly	Trp	Asn	Trp	Arg	Ala	Pro	Ser	Pro	Pro	Cys	Trp	Gln
		245		250		255									
Pro	Ile	Met	Pro	Thr	Arg	Arg	His								
260															

<210> 6287

<211> 285

<212> PRT

<213> B.fragilis

<400> 6287

Thr Gly Ser Val Cys Thr Leu Asp His Pro Ser Ile Lys Arg His Asn
 1 5 10 15
 Ile Leu Thr Met Lys Glu Ile Thr Tyr Asn Asn Gln Lys Lys Glu Ile
 20 25 30
 Pro Asp Ser Leu Glu Glu Leu Ser Pro Lys Glu Tyr Tyr Arg Tyr Leu
 35 40 45
 Glu Leu Val Leu Met Met Asn Ala Gly Glu Ile Ser Pro Phe Gln Met
 50 55 60
 Arg Cys Lys Leu Leu Ser Cys Leu Leu Gly Met Lys His Ser Leu Leu
 65 70 75 80
 Leu Cys Leu Gly Glu Ile Gln Glu Glu Leu Leu Ala Gln Leu Pro Ala
 85 90 95
 Leu Asp Gly Phe Phe Asp Ile Thr Ser Gln Glu Gly Met Met Val Tyr
 100 105 110
 Asp Ala Arg Leu Lys Thr Gly Arg Asn Leu Leu Pro Ala Tyr Lys Glu
 115 120 125
 Trp Lys Gly Pro Gly Asp Met Leu Ser Gly Ile Thr Phe Gly Gln Phe
 130 135 140
 Ile Glu Cys Met Gly Val Met Ala Glu Met Glu Arg Ala Arg Glu Gln
 145 150 155 160
 Gly Asn Glu Glu Asp Ile Gly Glu Leu Ile Ser Ser Ile Gly Arg Leu
 165 170 175
 Leu Tyr Lys Lys Gln Gly Pro Gln Glu Thr Gly Thr Pro Pro Phe Pro
 180 185 190
 Val Cys Phe His Ala Tyr Ile Phe Phe Leu Ala Val Trp Glu Leu Ile
 195 200 205
 Tyr Ser Val Pro Ile Ser Thr Asn Gly Lys Asp Ile Asp Phe Ser Ile
 210 215 220
 Leu Phe Glu Lys Ser Gly Arg Gly Asn Ala Gly Asp Asn Thr Gly Trp
 225 230 235 240
 Val Gly Ile Ser Tyr Asp Val Ala Ala Ser Gly Val Phe Gly Asp Phe
 245 250 255
 Arg Gln Val Asn Asp Thr Pro Phe Trp Asp Val Met, Leu Tyr Ile Tyr
 260 265 270
 Lys Cys Arg Phe Glu Met Leu His Asn Asn Lys Lys Gln
 275 280 285

<210> 6288

<211> 168

<212> PRT

<213> B.fragilis

<400> 6288

Lys Gly Glu Ser Lys Thr Leu Lys Ile Gly Lys Lys Thr Met Gly Gln
 1 5 10 15
 Leu Asp Lys Thr Asp Val Glu Ile Leu Gln Val Leu Gln Lys Asp Ala
 20 25 30
 Lys Val Asn Thr Lys Glu Leu Ser Glu Lys Leu His Ile Ser Lys Thr
 35 40 45
 Pro Ile Tyr Glu Arg Ile Lys Arg Leu Glu Asn Asp Gly Tyr Ile Lys
 50 55 60
 Gly Tyr Val Ala Leu Val Asp Asn Lys Lys Val Gly Leu Pro Leu Ile
 65 70 75 80
 Val Phe Cys Asn Val Ser Leu Ala Val His Asp Asp Glu His Ile Lys
 85 90 95
 Arg Phe Gln Glu Glu Ile Lys Glu Ile Asp Glu Ile Met Glu Cys Tyr
 100 105 110
 Ser Thr Gly Gly Ile Tyr Asp Phe Phe Ile Lys Val Val Leu Lys Asp
 115 120 125

Leu Asp Ala Tyr Asn Arg Phe Val Phe Glu Lys Leu Thr Lys Val His
 130 135 140
 Gly Ile Val Lys Met Gln Ser Ser Phe Val Leu Ser Glu Ile Lys His
 145 150 155 160
 Thr Thr Val Leu Asn Ile Asp Arg
 165

<210> 6289

<211> 215

<212> PRT

<213> B.fragilis

<400> 6289

Gln Leu Leu Leu Ala Arg Gln Glu Val Glu Lys Ser Thr Val Met Lys
 1 5 10 15
 Leu Cys Ala Arg Phe Tyr Asp Pro Thr Lys Gly Arg Ile Leu Phe Gly
 20 25 30
 Gly Val Pro Val Arg Glu Ile Glu Pro Glu Lys Leu Met Ser Arg Ile
 35 40 45
 Ser Met Val Phe Gln Asp Val Tyr Leu Phe Gln Asp Ser Ile Arg Asn
 50 55 60
 Asn Ile Arg Phe Gly Lys Ser Asp Ala Thr Asp Glu Glu Ile Val Ala
 65 70 75 80
 Ala Ala Lys Lys Ala Cys Cys His Asp Phe Ile Met His Leu Pro His
 85 90 95
 Gly Tyr Asp Thr Met Val Gly Glu Gly Gly Cys Thr Leu Ser Gly Gly
 100 105 110
 Glu Lys Gln Arg Leu Ser Ile Ala Arg Ala Met Leu Lys Asp Ala Gln
 115 120 125
 Ile Val Leu Leu Asp Glu Ala Thr Ala Ser Leu Asp Pro Glu Asn Glu
 130 135 140
 Val Glu Ile Gln Lys Ala Ile Asp Thr Leu Ile Lys Gly Arg Thr Val
 145 150 155 160
 Ile Val Ile Ala His Arg Leu Lys Thr Ile Met Gly Ala Asp His Ile
 165 170 175
 Val Val Leu Ser Asp Gly Lys Val Glu Gln Gly Thr His Ser Glu
 180 185 190
 Leu Met Cys Arg Asp Gly Leu Tyr Arg Lys Leu Trp Asn Ile Gln Glu
 195 200 205
 Ser Thr Leu Gly Trp Thr Leu
 210 215

<210> 6290

<211> 140

<212> PRT

<213> B.fragilis

<400> 6290

Ile Ile Tyr Pro Lys Gly Ile Asn Ile Met Ile Gln Thr Ile Gln Val
 1 5 10 15
 Gln Gly Thr Glu Lys Arg Leu Tyr Gln Leu Ile Ala Pro Leu Val Met
 20 25 30
 Asn Pro Asp Val Leu Ser Ala Asn Asn Asn Tyr Pro Phe Lys Thr Thr
 35 40 45
 Glu Gln Tyr Val Trp Phe Ile Ala Ile Asp Lys Lys Ser Val Val Gly
 50 55 60
 Phe Met Pro Val Glu His Arg Arg Ser Gly Cys Val Ile Asn Asn Tyr
 65 70 75 80
 Tyr Val Ser Gly Asp Asn Arg Glu Thr Leu Ser Leu Leu Ile Ser Ser

				85				90				95			
Val	Leu	Glu	Ala	Ile	Gly	Lys	Glu	Val	Arg	Leu	Phe	Ala	Val	Val	Met
			100					105					110		
Val	Asn	His	Gln	Ala	Val	Phe	Glu	Glu	His	Gly	Phe	Ile	Met	Glu	Lys
		115					120					125			
Ala	Trp	Lys	Arg	Tyr	Val	Lys	Met	Gln	Lys	Asp	Glu				
	130					135					140				

<210> 6291

<211> 608

<212> PRT

<213> B.fragilis

<400> 6291

Ile	Asn	Arg	Leu	Ile	Met	Val	Asn	Lys	Lys	Lys	Glu	Gly	Leu	Ser	Arg
1				5					10					15	
Leu	Phe	Glu	Ile	Ala	Gly	Gln	Lys	Lys	Ser	Leu	Leu	Leu	Leu	Ala	Gly
			20					25					30		
Leu	Leu	Ser	Ala	Gly	Ser	Ala	Val	Cys	Met	Leu	Ile	Pro	Tyr	Trp	Ala
		35					40					45			
Ile	Tyr	Arg	Ile	Leu	Tyr	Glu	Leu	Leu	Asn	His	Ser	Arg	Glu	Leu	Ser
	50					55					60				
Ser	Ile	Asp	Glu	Thr	Asn	Met	Ile	Arg	Trp	Gly	Trp	Ile	Ala	Phe	Gly
	65				70					75				80	
Gly	Leu	Ile	Gly	Gly	Leu	Leu	Leu	Leu	Tyr	Ala	Ser	Leu	Met	Ser	Ser
				85					90					95	
His	Val	Ala	Ala	Tyr	Arg	Ile	Leu	Tyr	Gly	Leu	Arg	Ile	Arg	Leu	Thr
		100						105					110		
Glu	His	Ile	Gly	Arg	Leu	Pro	Leu	Gly	Tyr	Leu	Asn	Gly	Thr	Ser	Thr
		115						120				125			
Gly	Ala	Ile	Lys	Lys	Thr	Met	Glu	Gln	Asn	Val	Glu	Lys	Ile	Glu	Asn
	130					135					140				
Phe	Ile	Ala	His	Thr	Ile	Pro	Asp	Leu	Val	Asn	Val	Met	Ala	Thr	Val
	145				150					155				160	
Val	Val	Met	Phe	Leu	Ile	Phe	Phe	Ser	Leu	Asp	Gly	Trp	Leu	Ala	Gly
			165						170					175	
Val	Cys	Leu	Ala	Val	Ile	Val	Leu	Ser	Ile	Phe	Leu	Gln	Phe	Ser	Asn
		180						185					190		
Phe	Met	Gly	Lys	Lys	Ala	Arg	Glu	Phe	Thr	Arg	Ile	Tyr	Tyr	Asn	Ala
	195						200					205			
Gln	Glu	Gln	Met	Ser	Ala	Ser	Ala	Val	Gln	Tyr	Val	Arg	Gly	Met	Pro
	210					215					220				
Val	Val	Lys	Ile	Phe	Gly	Gln	Ser	Val	Arg	Ser	Phe	Arg	Gln	Phe	Asn
	225				230					235				240	
Ala	Glu	Ile	Glu	Ala	Tyr	Lys	Thr	Tyr	Ala	Leu	Lys	Val	Cys	Asp	Thr
			245						250					255	
Tyr	Glu	Ser	Gly	Met	Thr	Tyr	Phe	Thr	Val	Leu	Leu	Asn	Ser	Ile	Val
		260						265					270		
Thr	Phe	Ile	Leu	Pro	Val	Gly	Ile	Leu	Leu	Met	Gln	Asn	Asp	Ser	Arg
	275					280						285			
Ser	Leu	Thr	Leu	Ala	Ala	Val	Trp	Leu	Phe	Phe	Ile	Ile	Leu	Gly	Pro
	290					295					300				
Gly	Val	Ala	Ser	Pro	Val	Tyr	Lys	Leu	Met	Tyr	Leu	Gly	Ser	Ser	Thr
	305				310					315				320	
Arg	Glu	Ile	Asn	Glu	Gly	Val	Ser	Arg	Ile	Asp	Arg	Ile	Leu	Glu	Asn
			325						330					335	
Gln	Pro	Val	Ser	Glu	Pro	Ala	Cys	Pro	Lys	Ile	Pro	Ala	Thr	Tyr	Asp
		340						345					350		
Ile	Glu	Phe	Arg	His	Val	Ser	Phe	Ser	Tyr	Glu	Asn	Lys	Glu	Gln	Ala

355	360	365
Thr Arg Thr Glu Ala Leu His Asp Leu Cys Phe Thr Ala Pro Gln Gly		
370	375	380
Lys Ile Thr Ala Phe Val Gly Pro Ser Gly Ser Gly Lys Ser Thr Val		
385	390	395
Ala Asn Leu Ile Pro Arg Phe Trp Asp Val Glu Gln Gly Glu Ile Leu		400
	405	410
Ile Gly Asn Val Asn Val Lys Asp Ile Ala Thr Glu Gln Leu Met Asp		415
	420	425
Leu Val Ser Phe Val Phe Gln Asp Thr Phe Leu Phe Tyr Asp Thr Leu		430
	435	440
Tyr Glu Asn Ile Ala Val Gly Ser Ser Lys Ala Thr Arg Asp Thr Val		445
	450	455
Ile Ala Ala Ala Arg Ala Ala Gln Cys His Glu Phe Ile Glu Lys Leu		460
465	470	475
Pro Asn Gly Tyr Glu Thr Arg Ile Gly Asp Lys Gly Val Phe Leu Ser		480
	485	490
Gly Gly Glu Ala Gln Arg Val Cys Val Ala Arg Ala Ile Leu Lys Asn		495
	500	505
Ala Pro Ile Leu Val Leu Asp Glu Ala Thr Ala Phe Ala Asp Pro Glu		510
	515	520
Asn Glu Tyr Lys Met Gln Gln Ala Leu Lys Ser Leu Ile Lys Asp Lys		525
	530	535
Thr Val Ile Ile Ile Ala His Arg Leu Ser Ser Ile Val Ser Ser Asp		540
545	550	555
Arg Ile Ile Val Leu Lys Asp Gly Arg Ala Val Gln Cys Gly Arg His		560
	565	570
Glu Glu Leu Ser Ser Gln Glu Gly Val Tyr Lys Lys Met Trp Asn Ala		575
	580	585
Tyr Thr Ser Ala Phe Arg Trp Gln Leu Asn Val Lys Gln Glu Lys Glu		590
595	600	605

<210> 6292
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 6292
Lys His Ile Ala Met Ser Ile Lys Lys Ser Pro Val Tyr Asn Val Ile
1 5 10 15
Ala Val Pro Val Glu Lys Val Gln Ala Asn Asp Tyr Asn Pro Asn Val
20 25 30
Val Ala Pro Pro Glu Met Arg Leu Leu Glu Leu Ser Ile Trp Glu Asp
35 40 45
Gly Phe Thr Met Pro Cys Val Cys Tyr Tyr Asp Lys Glu Lys Asp Val
50 55 60
Tyr Ile Leu Val Asp Gly Phe His Arg Tyr Ser Val Leu Lys Thr Ser
65 70 75 80
Lys Arg Ile Phe Gln Arg Glu Asn Gly Met Leu Pro Ile Val Val Ile
85 90 95
Glu Lys Asp Leu Ser Asn Arg Met Ser Ser Thr Ile Arg His Asn Arg
100 105 110
Ala Arg Gly Thr His Asn Ile Glu Leu Met Cys His Ile Val Ala Glu
115 120 125
Leu Asp Lys Ala Gly Met Ser Asp Gln Trp Ile Met Lys Asn Ile Gly
130 135 140
Met Asp Arg Asp Glu Leu Leu Arg Leu Lys Gln Ile Ser Gly Leu Ala
145 150 155 160
Asp Leu Phe Ala Asn Arg Asp Phe Ser Val Pro Glu Asp Asp Gln Pro

				165				170					175
Gly	Asn	Val	Asp	Lys	Lys	Pro	Thr	Arg					
			180					185					

<210> 6293
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 6293
 Arg Met Ser Ala Ile Arg Asn Ile Thr Ile Gly Arg Thr Glu Arg Leu
 1 5 10 15
 Tyr Lys Pro Val Gly Tyr Thr Met Leu Ala Asn Leu Val Asn Ile Val
 20 25 30
 Pro Phe Cys Leu Ser Ile Glu Ala Ile Arg Ile Ile Phe Arg Ala Phe
 35 40 45
 Asn Gly Gly Gly Gln Ser Leu Asp Thr Thr Arg Leu Trp Cys Ile Phe
 50 55 60
 Gly Cys Met Thr Gly Tyr Ile Ala Val Met Val Leu Ala Glu Arg Ala
 65 70 75 80
 Ala Tyr Arg Ala Asn Phe Arg Gly Ala Tyr Glu Met Ser Ala Ser Gly
 85 90 95
 Arg Ile Ser Leu Ala Glu His Leu Arg Lys Leu Ser Leu Gly Phe Leu
 100 105 110
 Gly Lys Arg Asp Pro Gly Asp Leu Ser Ser Met Leu Ile Thr Asp Phe
 115 120 125
 Thr Met Ala Glu Thr Gly Ile Ser His Tyr Leu Pro Gln Leu Met Gly
 130 135 140
 Ala Leu Val Met Pro Val Leu Ala Phe Val Ser Leu Leu Trp Ile Asp
 145 150 155 160
 Trp Arg Met Ala Val Ala Met Phe Val Ala Leu Pro Phe Ala Met Gly
 165 170 175
 Ile Leu Trp Leu Ser Thr Ser Val Gln Glu Arg Leu Ser Gly Arg Gln
 180 185 190
 Ile Lys Ala Lys Val Asn Ala Gly Asn Arg Leu Glu Glu Tyr Leu Gln
 195 200 205
 Gly Ile Arg Val Met Lys Ala Tyr Asn Leu Leu Gly Asp Arg Phe Val
 210 215 220
 Arg Leu Arg Asp Ala Phe Ala Glu Leu Arg Arg Ala Cys Ile Arg Leu
 225 230 235 240
 Glu Ala Leu Leu Gly Pro Phe Val Leu Leu Ala Ile Thr Leu Val Arg
 245 250 255
 Ala Gly Leu Thr Leu Met Val Leu Cys Gly Thr Tyr Leu Leu Leu Gly
 260 265 270
 Gly Gln Leu Ser Ile Leu Thr Phe Val Met Phe Leu Val Val Gly Ser
 275 280 285
 Arg Val Phe Asp Pro Leu Thr Ser Ala Leu Thr Asn Phe Thr Glu Phe
 290 295 300
 Arg His Phe Ser Ile Ser Gly Gly Arg Ile Leu Ser Leu Met Asn Glu
 305 310 315 320
 Pro Glu Met Lys Gly Thr Lys Glu Ala Pro Glu Asp Gly Asn Ile Ile
 325 330 335
 Phe

<210> 6294
 <211> 117
 <212> PRT
 <213> B.fragilis

<220>

<221> UNSURE

<222> (94), (95)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6294

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Ser Trp Arg Tyr Pro Leu Asp Leu Gly Ala Val Lys Leu Ser Ala Gln
1          5          10          15
Gln Met Ile Val Leu Thr Pro Val Leu Arg Tyr Thr Glu Gly Glu Glu
          20          25          30
Gln Gln Leu Leu Ala Pro Val Val Ile Ala Gly Pro Arg Arg Tyr Arg
          35          40          45
Val Leu Lys Arg Ser Leu Ala Phe Gly Thr Asp Asn Phe Glu Met Phe
          50          55          60
Pro Met Leu Val Glu Asn Arg Lys Ser Gly Thr Pro Gln Thr Val Asn
65          70          75          80
Ile His Phe Gly Leu Pro Tyr His Glu Trp Met Arg Arg Xaa Xaa Leu
          85          90          95
Ile Ile Arg Glu Arg Cys Pro Val Val Pro Ile Val Leu Ser Val Arg
          100          105          110
Met Thr Ile Pro Leu
          115

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<210> 6295

<211> 156

<212> PRT

<213> B.fragilis

<400> 6295

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Ile Pro Leu Gln Val Gln Lys Tyr Ile Glu Tyr Met Glu Thr Lys Ile
1          5          10          15
Leu Ser Asn Ala Thr His Lys Cys Val Leu Val Ile Asp Asn Ala Gln
          20          25          30
Pro Thr Gly Ile Val Ala Asn Ile Ala Ser Val Leu Ser Met Thr Leu
          35          40          45
Gly Cys Arg Val Ser Asn Ile Val Ser His Asp Val Tyr Asp Lys Gln
          50          55          60
Gly Glu Arg His Leu Gly Ile Thr Gln Leu Pro Ile Pro Ile Leu Gly
65          70          75          80
Ala Ser Gln Glu Lys Ile Lys Glu Leu Arg Asn Tyr Phe His Ser Leu
          85          90          95
Glu Ile Glu Asp Leu Val Leu Val Asp Phe Ser Thr Ile Ala Gln Gln
          100          105          110
Ser Arg Thr Tyr Asp Glu Tyr Glu Arg Glu Met Tyr Ser Ala Asn Glu
          115          120          125
Asp Asp Leu His Tyr Val Gly Ile Gly Ile Cys Ala Glu Lys Lys Ala
          130          135          140
Ile Asn Lys Ala Thr Gly Ser Leu Ser Leu Ile Arg
145          150          155

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<210> 6296

<211> 60

<212> PRT

<213> B.fragilis

<400> 6296

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Leu Ile Arg Gln Leu Tyr Leu Pro Leu Leu Ala Asn Ile Arg Ile Ser
1          5          10          15

```

Pro His Val Lys Asn Arg Leu Gln Ala Leu Asn Val Gly Thr Thr Tyr
 20 25 30
 Arg Met Leu Leu Arg Asp Tyr Tyr Pro Pro Thr Arg Ser Asn Val Tyr
 35 40 45
 Thr Ile Phe Asn Val Ala Arg Ala Phe Asn Val Val
 50 55 60

<210> 6297

<211> 434

<212> PRT

<213> B.fragilis

<400> 6297

Met Met Thr Lys Thr Thr Thr Val Pro Lys Asn Val Tyr Glu Leu Ala
 1 5 10 15
 Gln Glu Arg Leu Arg Ile Val Phe Asn Glu Phe Asp Asn Val Tyr Leu
 20 25 30
 Ser Phe Ser Gly Gly Lys Asp Ser Gly Val Leu Leu Ser Leu Cys Ile
 35 40 45
 Asp Tyr Ile Arg Arg Asn Asn Leu Lys Ile Lys Leu Gly Val Phe His
 50 55 60
 Met Asp Tyr Glu Ile Gln Tyr Lys Met Thr Ile Asp Tyr Ile Ala Arg
 65 70 75 80
 Met Leu Glu Asp Asn Lys Asp Ile Leu Glu Val Tyr Arg Val Cys Val
 85 90 95
 Pro Phe Arg Val Ala Thr Cys Thr Ser Met Tyr Gln Ser Phe Trp Arg
 100 105 110
 Pro Trp Glu Asp Ser Lys Lys Asp Leu Trp Val Arg Pro Leu Pro Glu
 115 120 125
 Asn Ala Met Thr Lys Glu Asp Phe Pro Phe Tyr Asn Thr Gln Met Trp
 130 135 140
 Asp Tyr Glu Phe Gln Met Arg Phe Ala Ser Trp Leu His Glu Lys Lys
 145 150 155 160
 Asp Ala Val Arg Thr Cys Cys Leu Ile Gly Ile Arg Thr Gln Glu Ser
 165 170 175
 Phe Asn Arg Trp Arg Cys Ile Tyr Leu Asn Arg Lys Tyr Gln Met Tyr
 180 185 190
 His Arg Tyr Arg Trp Thr Ser Lys Val Gly Asn Asp Ile Phe Asn Ala
 195 200 205
 Tyr Pro Ile Tyr Asp Trp Lys Thr Thr Asp Val Trp Thr Ala Asn Gly
 210 215 220
 Lys Phe Lys Trp Asp Tyr Asn Lys Leu Tyr Asp Tyr Tyr Tyr Trp Ala
 225 230 235 240
 Gly Val Asn Leu Glu Arg Gln Arg Val Ala Ser Pro Phe Ile Gly Glu
 245 250 255
 Ala Gln Glu Ser Leu Ala Leu Tyr Arg Ala Ile Asp Pro Asn Thr Trp
 260 265 270
 Gly Lys Met Ile Gly Arg Val Asn Gly Val Asn Phe Thr Ser Met Tyr
 275 280 285
 Gly Gly Thr His Ala Met Gly Trp Gln Ser Ile Lys Leu Pro Glu Gly
 290 295 300
 Tyr Thr Trp Arg Glu Phe Met Tyr Phe Leu Leu Ser Thr Leu Pro Asp
 305 310 315 320
 Arg Ala Arg Asn Gly Tyr Leu Arg Lys Leu Gln Val Ser Val Gln Phe
 325 330 335
 Trp Arg Asn Lys Gly Gly Cys Leu Ser Asp Glu Thr Ile Arg Arg Leu
 340 345 350
 Asn Glu Ala Lys Val Pro Ile Ile Val Met Asp Asn Ser Asn Tyr Lys
 355 360 365

Thr Thr Lys Lys Pro Val Arg Met Glu Tyr Gln Asp Asp Ile Asp Ile
 370 375 380
 Pro Glu Phe Arg Glu Ile Pro Thr Tyr Lys Arg Met Cys Ile Cys Ile
 385 390 395 400
 Leu Lys Asn Asp His Ala Cys Lys Tyr Met Gly Phe Ser Pro Thr Lys
 405 410 415
 Glu Glu Met Ser Lys Arg Asn Gln Val Ile Glu Gln Tyr Lys Asn Ile
 420 425 430
 Leu Gln

<210> 6298
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 6298
 Ser Gly Ile Asn Asn Val Ser Ala Thr Met Phe Ser Asn Ser Cys Phe
 1 5 10 15
 Cys Phe Ile Leu Tyr Phe Tyr Asp Val Ser Val Arg Val Ala Leu Lys
 20 25 30
 Asn Glu Arg Tyr Ser Lys Ser Phe Thr Lys Lys Glu Glu Asn Leu Arg
 35 40 45
 Lys Asp Ser Leu Leu Asn Phe Asn Pro Val Asn Gly Asp Leu Tyr Phe
 50 55 60
 Cys Leu Leu Leu Leu Ile Leu Ser Ala Lys Pro Ser Asn Leu Glu Phe
 65 70 75 80
 Gln Thr Ile Tyr Thr His Ala Arg Tyr Thr Pro Phe Pro Cys Tyr Arg
 85 90 95

<210> 6299
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 6299
 Asn Met Glu Lys Ile Glu Ile Val Leu Arg Arg Glu Gln Asn Asn Arg
 1 5 10 15
 Asn Gly Ile Tyr Leu Asn Tyr Ile Asn Gly Tyr Trp Tyr Thr Tyr Glu
 20 25 30
 Trp Ser Ala Phe Leu Leu Cys Met Leu His Pro Glu Val Glu Val Arg
 35 40 45
 Lys Cys Ile Gly Val Gln Pro Asp Glu Asn Tyr Ala Ile Ala Arg Val
 50 55 60
 Asn Lys Lys Ile Ile Lys Lys Leu Glu Arg Lys Tyr Gln Thr Ser Met
 65 70 75 80
 Met Asp Asp Ser Ile Lys Ile Leu Leu Pro Pro Phe Asn Glu Asp Glu
 85 90 95
 Asn Ile Phe Leu Asn Trp Lys Ala Leu Leu Pro Pro
 100 105

<210> 6300
 <211> 307
 <212> PRT
 <213> B.fragilis

<400> 6300
 Val Gln Arg Lys Lys Asn Gly Lys Met Lys Asp Ser Lys Leu Lys Thr
 1 5 10 15

Ala Gly Met Arg Lys Leu His Trp Gly Lys Ala Val Met Ser Ile Val
 20 25 30
 Val Thr Leu Ala Ala Met Pro Leu Thr His Ser Leu Ala Arg Val Leu
 35 40 45
 Lys Glu Gly Thr Thr Gly Val Glu Gln Phe Tyr Ala Gly Met Gly Met
 50 55 60
 Gly Ala Phe Gly Leu Phe Met Val Ile Ala Gly Val Phe Val Lys Gly
 65 70 75 80
 His Ile Arg Gln Thr Leu Leu Gly Leu Phe Gly Gly Met Phe Tyr Trp
 85 90 95
 Met Gly Ala Val Asp Phe Leu Phe Met Tyr Phe Ala Asn Arg Phe Gly
 100 105 110
 Thr Gln Ala Gln Leu Asp Pro Val Thr Gly Glu Val Val Ser Arg Pro
 115 120 125
 Glu Tyr Leu Leu Leu Pro Ala Thr Phe Gly Phe Trp Val Met Val Met
 130 135 140
 Ile Leu Tyr Leu Phe Cys Thr Arg Asn Gly Cys Asn Phe Leu Asn Trp
 145 150 155 160
 Trp Gln Lys Leu Phe Phe Gly Lys His Lys Lys Glu Ile Val Val Arg
 165 170 175
 Ala Met Thr Arg His Thr Ser Ile Val Ala Phe Met Glu Val Ile Thr
 180 185 190
 Met Leu Trp Thr Cys Tyr Leu Val Leu Met Phe Cys Tyr Asp Glu Arg
 195 200 205
 Phe Phe Gly Asp His His Pro Val Thr Leu Leu Val Gly Met Leu Gly
 210 215 220
 Leu Ile Gly Ser Ile Phe Met Phe Ala Lys Leu Leu Arg His Ala Ser
 225 230 235 240
 Trp Asp Met Ser Leu Arg Phe Gly Phe Ala Thr Val Ile Ile Phe Trp
 245 250 255
 Ile Ala Val Glu Val Phe Asp Arg Ile His Leu Phe Pro Gly Leu Trp
 260 265 270
 Glu Asn Pro Gly Gly His Lys Gln Glu Leu Leu Leu Ile Ala Ala Ser
 275 280 285
 Ile Ile Phe Thr Gly Trp Trp Leu Gly Tyr Asn Asn Leu Leu Val Leu
 290 295 300
 Lys Asn Lys
 305

<210> 6301
 <211> 317
 <212> PRT
 <213> B.fragilis

<400> 6301
 Asn Gly Gly Cys Leu Ile Lys Arg Asn Phe Phe Cys Pro Leu Gln Tyr
 1 5 10 15
 Leu Arg His Ile Lys Leu Trp Asn Glu Arg Lys Met Ala Asp Asn Val
 20 25 30
 Lys Ala Asn Lys Met Asn Ser Gln Ala Asp Asp Asp Ile Gly Phe Gly
 35 40 45
 Ile Tyr Thr Asp Ile Ala Asp Leu Pro Met Thr Gly Cys Pro Ser Tyr
 50 55 60
 Ile Glu Glu Gly Ile Gly Gly Val Cys Glu Ser Gly Thr Ala Thr Ile
 65 70 75 80
 Val Val Phe Asp Val Pro Phe Gln Ile Val Pro Asn Val Val Ile Thr
 85 90 95
 Leu Met Pro Trp Gln Leu Val Phe Ile Lys Glu Ile Ser Glu Asp Phe
 100 105 110

Arg Ile Thr Phe Phe Lys Ile Ser Lys Asp Met Phe Ser Glu Thr Leu
 115 120 125
 Ser Thr Leu Trp Arg Pro Ala Ser Gly Phe Leu Leu Tyr Met Arg Lys
 130 135 140
 His Ile Val Ser Ile Pro Asp Gly Glu Leu Ile Gly Arg Phe Leu Ala
 145 150 155 160
 Tyr Cys Asn Leu Leu Val Tyr Arg Met Lys His Thr Pro Gln Asn Cys
 165 170 175
 Arg Gln Glu Ser Ile Met Gln Leu Leu Arg Val Tyr Phe Trp Asp Val
 180 185 190
 Tyr Thr Val Tyr Ile Asn Asp Pro Gln Ala Glu Lys Ser Leu Lys Phe
 195 200 205
 Thr Arg Lys Asp Glu Tyr Val Tyr Gln Phe Val Arg Leu Ile Ile Glu
 210 215 220
 Asp His Ser Pro Asp Lys Asp Val Ala Tyr Phe Ala Gln Lys Leu Gly
 225 230 235 240
 Ile Ser Pro Lys Arg Leu Thr Asn Leu Ile Arg Ser Ile Ser Gly Gln
 245 250 255
 Ser Ala Arg Glu Trp Ile Val Tyr Tyr Thr Ile Leu Glu Ile Lys Ser
 260 265 270
 Leu Leu Arg Glu Ser Ser Leu Asp Ile Lys Ser Ile Ala Ala Arg Val
 275 280 285
 Asn Phe Pro Asp Gln Thr Thr Leu Ser Arg Tyr Phe Arg His Tyr Thr
 290 295 300
 Gly Val Thr Pro Ser Gln Tyr Arg Lys Asn Ile Tyr Phe
 305 310 315

<210> 6302

<211> 214

<212> PRT

<213> B.fragilis

<400> 6302

Phe Tyr Val Arg Lys Gln Asn Ala Val Arg His Met Gln Thr Leu Lys
 1 5 10 15
 Ser Asp Ile Arg Asn Arg Ile Leu Ser Ala Ala Lys Glu Gln Phe Val
 20 25 30
 Gln Arg Gly Tyr Leu Lys Thr Ser Met Arg Glu Ile Ala Asp Ala Val
 35 40 45
 Asp Val Gly Val Gly Asn Leu Tyr Asn Tyr Phe Glu Asn Lys Asp Glu
 50 55 60
 Leu Phe Cys Val Ile Leu Arg Pro Val Ser Asp Ala Leu Glu Arg Met
 65 70 75 80
 Leu Gln Glu His His Gly Ala Lys Gly Ala Asp Ile Met Leu Ile Cys
 85 90 95
 Ser Glu Glu Tyr Leu Lys Ser Ala Val Asp Glu Tyr Ile Ser Leu Ile
 100 105 110
 Asn Lys His Gly Glu Leu Met Lys Ile Leu Leu Phe His Ser Gln Gly
 115 120 125
 Ser Ser Leu Glu Thr Phe Arg Glu Asp Tyr Thr Asn Arg Ser Thr Glu
 130 135 140
 Met Val Lys Thr Trp Phe Ala Glu Met Lys Glu Lys His Pro Glu Ile
 145 150 155 160
 Asn Val Val Val Ser Asp Phe Met Ile His Leu Gln Ala Val Trp Met
 165 170 175
 Phe Thr Leu Phe Glu Glu Met Leu Lys His Ala Ile Asp Ser Lys Glu
 180 185 190
 Met Glu Tyr Ile Val His Glu Tyr Ile Leu Phe Glu Ile Gln Gly Trp
 195 200 205

Arg Ala Leu Leu Arg Val
210

<210> 6303
<211> 288
<212> PRT
<213> B.fragilis

<400> 6303
Thr Arg Asn Ser Leu Thr Met Lys Leu Leu His Ile Glu Arg His Thr
1 5 10 15
Thr Cys Leu Asn Tyr Val Ser Asp Tyr Asn Ile Cys Phe Ile His Gln
20 25 30
Arg Leu Phe Ser Gly Gly Asp Phe Lys Ile Asp Asn His His His Ser
35 40 45
Cys Ile Leu Phe Leu Leu Lys Gly Glu Ile Leu Thr Ser Cys Ser Glu
50 55 60
Phe His Asp Gln His Ile Val Glu Gly His Met Val Leu Phe Pro Gln
65 70 75 80
Asn Asp Pro Asn Gln Ser Lys Ser Met Thr Glu Thr Glu Phe Ile Leu
85 90 95
Leu Phe Phe Asp Asn Gln Val Asn Leu His Ser Lys Met Ser Ile Glu
100 105 110
Leu Ser Ala Ile His Leu Glu Ser Glu Lys Ser Cys Phe Tyr Ser Leu
115 120 125
Ser Ile Cys Pro Pro Leu Arg His Val Leu Asp Ser Ile Cys Phe Tyr
130 135 140
Leu Lys Gln Lys Val Gln Cys Ser His Met His Glu Leu Lys Gln Lys
145 150 155 160
Glu Ile Phe Met Val Phe Gly Thr Phe Tyr Asn Arg Thr Asp Met Ala
165 170 175
His Phe Leu Met Pro Ile Thr Gly Arg Asp Pro Asn Phe Lys Ser Phe
180 185 190
Val Leu Glu Asn Tyr Leu Gln Ile Arg Asn Ile Lys Gln Phe Ala Gln
195 200 205
Leu Tyr His Cys Ser Glu Arg Ser Phe Asn Arg Lys Phe Lys Ser Cys
210 215 220
Phe His Asp Thr Pro Tyr Asn Trp Ile Leu Asn Gln Lys Thr Arg His
225 230 235 240
Ile Lys Gly Gln Leu Ala Asn Arg Asn Ile Pro Ile Ser Glu Ile Ala
245 250 255
Arg Thr Phe His Phe Ala Ser Pro Ser His Phe Thr Thr Tyr Cys Lys
260 265 270
Lys Arg Leu Gly Ile Thr Pro Ser Glu Phe Arg Glu Lys Ile Ala Lys
275 280 285

<210> 6304
<211> 200
<212> PRT
<213> B.fragilis

<400> 6304
Lys Val Pro Gly Cys Ala Asp Arg Leu Val Ser Gln Asp Asp His Thr
1 5 10 15
Val Ile Thr Ser Val Phe Gly Glu Gln Phe Ala Pro Arg Thr Glu Leu
20 25 30
Ser Ile Val Thr Pro Pro Val Asp Pro Leu Lys Gln Arg Ser Glu Thr
35 40 45
His Thr Ala Tyr Leu Asn Phe Glu Val Asp Lys Tyr Val Met Ser Arg

50		55		60
Asn Tyr Lys Asn Asn Ala Asn Val Leu Ala Asp Val Asp Arg Ile Val				
65		70		80
Asn Glu Ile Gln Asn Asp Ser Asn Leu Thr Val Thr Glu Phe Arg Val				
	85		90	95
Thr Gly Tyr Ala Ser Pro Glu Gly Asp Tyr Ser Arg Asn Met Glu Leu				
	100		105	110
Ser Glu Asn Arg Ala Leu Ala Phe Val Gly Tyr Leu Gln Asn Leu Gly				
	115		120	125
Gly Val Asp Glu Ser Leu Leu Thr Val Asp Trp Lys Gly Glu Asp Trp				
	130		135	140
Ser Gly Met Arg Arg Glu Val Ala Ala Ser Ser Met Ile Asp Lys Ala				
145		150		160
Ala Ile Leu Ala Val Ile Gly Glu His Thr Asp Phe Ala Thr Arg Lys				
	165		170	175
Lys Ser Val Ala Gly Val Glu Cys Arg Asn Tyr Leu Gln Asp Val Thr				
	180		185	190
Glu Gly Leu Leu Ser Ala Tyr Thr				
	195		200	

<210> 6305

<211> 197

<212> PRT

<213> B.fragilis

<400> 6305

Ser Val Tyr Ile Ile Glu Glu Thr Ser Met Lys Lys Leu Ile Leu Phe				
1		5		10
Gly Ala Ala Ile Ser Ile Ser Val Ala Val Ser Ala Gln His Val Ala				
	20		25	30
Leu Lys Asn Asn Leu Leu Tyr Asp Ala Thr Thr Thr Pro Asn Leu Ala				
	35		40	45
Leu Glu Val Gly Leu Gly Lys Lys Thr Thr Leu Asp Leu Tyr Gly Gly				
	50		55	60
Tyr Asn Pro Phe Thr Phe Gly Asn His Lys Arg Phe Lys His Trp Leu				
65		70		80
Ala Gln Pro Glu Phe Arg Tyr Trp Thr Cys Glu Arg Phe Asn Gly Thr				
	85		90	95
Phe Trp Gly Val His Leu His Gly Gly Glu Phe Ser Val Ala Gly Ile				
	100		105	110
Ser Leu Pro Phe Lys Ile Phe Pro Ser Leu Lys Asp His Arg Tyr Glu				
	115		120	125
Gly Tyr Phe Tyr Gly Gly Gly Val Ser Val Gly His Gln Trp Leu Leu				
	130		135	140
Ser Lys His Trp Ser Leu Glu Ala Ser Val Gly Val Gly Tyr Ala His				
145		150		160
Trp Val Tyr Asp Lys Tyr Arg Cys Val Asn Cys Ser Pro Lys Ile Lys				
	165		170	175
Ser Gly His Lys Asn Tyr Val Gly Pro Thr Lys Ala Ala Val Ser Leu				
	180		185	190
Val Tyr Phe Ile Arg				
	195			

<210> 6306

<211> 119

<212> PRT

<213> B.fragilis

<400> 6306

Gln Val Arg Ile Leu Ile Ile Ile Lys Lys Ile Thr Ile Met Lys Lys
 1 5 10 15
 Val Leu Val Ala Val Ala Leu Val Met Gly Leu Gly Ser Ser Val Ala
 20 25 30
 Phe Ala Gln Glu Val Glu Asn Ser Thr Ala Val Glu Thr Gln Ala Gln
 35 40 45
 Ala Pro Gln Asp Glu Phe Thr Lys Ile Asp Ala Gln Lys Leu Pro Asp
 50 55 60
 Ala Val Met Asn Ala Leu Ala Lys Ser Tyr Glu Gly Ala Ser Ile Lys
 65 70 75 80
 Glu Val Tyr Ser Ala Asp Lys Glu Thr Gly Lys Ile Tyr Lys Val Ile
 85 90 95
 Leu Thr Thr Lys Asp Ser Gln Glu Val Thr Val Leu Leu Asp Glu Lys
 100 105 110
 Gly Glu Glu Ile Lys Glu Ala
 115

<210> 6307

<211> 275

<212> PRT

<213> B.fragilis

<400> 6307

Lys Tyr Arg Met Lys Gln Lys His Glu Phe Glu Asn Ile Val Ala Glu
 1 5 10 15
 Thr Leu Leu Ile Pro Leu Tyr Met Arg Ala Lys Glu Asn Arg Arg Lys
 20 25 30
 Asn Pro Ile Leu Cys Asp Lys Leu Ala Glu Gln Leu Val Glu Asn Ile
 35 40 45
 Glu Tyr Asp Tyr Ser Arg Phe Asp Gly Ala Lys Leu Ser Glu Val Gly
 50 55 60
 Cys Val Ile Arg Gly Trp Tyr Phe Asp His Ala Ile Arg Arg Phe Ile
 65 70 75 80
 Asp Thr His Thr Cys Pro Val Val Val Asn Val Gly Cys Gly Leu Asp
 85 90 95
 Thr Arg Tyr Gln Arg Val Gly Asn Asp Gly Lys Ala Val Phe Tyr Glu
 100 105 110
 Leu Asp Leu Pro Glu Val Ile Ala Ile Arg Arg Arg Leu Ile Pro Glu
 115 120 125
 Pro Glu Asn Asp Cys Tyr Leu Ser Ala Ser Leu Leu Glu Thr Asp Trp
 130 135 140
 Met Asp Arg Ile Arg Leu Leu His Pro Asn Gly Asp Phe Ile Phe Val
 145 150 155 160
 Val Glu Gly Val Leu Met Tyr Phe Arg Glu Glu Gln Val Arg Thr Phe
 165 170 175
 Leu His Asn Ile Thr Met Arg Phe Glu Gly Gly Glu Leu Trp Phe Asp
 180 185 190
 Val Cys Gly Thr Met Met Ser Arg Arg Gly Val Lys Pro Asp Ser Leu
 195 200 205
 Arg Glu His Lys Ala Gln Ile Arg Ser Gly Ile Asp Asp Gly His Met
 210 215 220
 Val Glu Leu Trp Glu Pro Gly Leu His Leu Leu Glu Gln Ala Asn Tyr
 225 230 235 240
 Met Lys Phe Phe Arg Ser Arg Trp Gly Phe Phe Phe Gly Gln Ile Leu
 245 250 255
 Gly Arg Met Thr Lys Leu Cys Tyr Lys Phe Ser Ser Met Leu Gly Tyr
 260 265 270
 Lys Ile Gly
 275

<210> 6308
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6308
 Arg Thr Gln Ile Ser Gly Leu Met Gly Pro Gly Ser Lys Thr Asp Ile
 1 5 10 15
 Lys Gln Pro Ile Ala Glu Pro Ile Lys Glu Glu Val Arg Cys Ser Gly
 20 25 30
 Gln Lys His Leu Phe Ser Ser Ile Arg His Ser Pro Asp Val Lys Phe
 35 40 45
 Ala Phe His Phe Ile His Ile Asn Tyr Asn Asn Pro Leu
 50 55 60

<210> 6309
 <211> 238
 <212> PRT
 <213> B.fragilis

<400> 6309
 Ile Leu Met Val Ile Ile Gly Val Phe Ala Gln Gly Asp Thr Arg Gln
 1 5 10 15
 Thr Leu Trp Gly Phe Phe Gly Gly Leu Leu Phe Trp Thr Gly Trp Val
 20 25 30
 Glu Phe Leu Phe Met Tyr Phe Ala Asn Arg Phe Gly Thr Gln Pro Glu
 35 40 45
 Leu Asp Pro Val Thr Gly Glu Ile Val Thr Arg Pro Glu Tyr Leu Ile
 50 55 60
 Leu Pro Ala Ser Phe Gly Phe Trp Met Met Val Met Val Met Tyr Leu
 65 70 75 80
 Phe Ser Thr Lys Asn Gly Cys Asn Phe Ile Asn Trp Trp Gln Arg Leu
 85 90 95
 Leu Leu Arg Gly Arg Lys Ala Asp Ile Ala Ala Arg Pro Met Thr Arg
 100 105 110
 His Val Ser Ile Ile Thr Phe Met Glu Leu Met Met Ile Leu Trp Thr
 115 120 125
 Ser Tyr Leu Val Leu Met Phe Cys Tyr Asp Asp Val Phe Leu Gly Glu
 130 135 140
 His His Pro Val Thr Leu Leu Val Gly Leu Gly Cys Leu Val Gly Ala
 145 150 155 160
 Phe Phe Ile Phe Val Lys Gln Leu Arg Ile Ala Ser Trp Gly Ala Asn
 165 170 175
 Ile Arg Met Ala Ile Ala Thr Val Val Val Phe Trp Thr Pro Val Glu
 180 185 190
 Ile Leu Gly Arg Met Asn Leu Phe Ser Glu Ile Trp Ile Asp Pro Met
 195 200 205
 Asn His Val Met Glu Met Gly Ile Ile Leu Ala Val Phe Ile Ile Leu
 210 215 220
 Thr Val Tyr Leu Trp Tyr Met Ser Ala Lys Lys Lys Arg
 225 230 235

<210> 6310
 <211> 511
 <212> PRT
 <213> B.fragilis

<400> 6310

Met 1	Ser	Asn	Ser	Ser 5	Ile	Lys	Ser	Lys	Thr 10	Ala	Leu	Leu	Arg	Asn 15	Gly
Glu	Thr	Gln	Lys 20	Gly	Asn	Gly	Tyr	Pro 25	Glu	Ala	Asn	Asp	Tyr 30	Ser	Ala
Arg	Ile	Leu	Glu	Thr	Met	Gln	Thr	Gly 40	Val	Ile	Phe	Phe 45	Asn	Thr	Glu
Gln	Ile	Ile	Ser	Gly	Ile	Asn	Asn	Leu	Ala	Cys	Glu	Asp	Leu	Gln	Ile
Pro 65	Arg	Asp	Pro	Ser	Gly 70	His	Lys	Ile	Thr	Asp 75	Ile	Ile	Ser	Ile	Ile
His	Gln	Glu	Lys	Asp 85	Ile	Phe	Pro	Glu	Leu 90	Ile	Ala	Arg	Leu	Lys	Ser
Ser	Glu	Thr	Asp 100	Met	Glu	Lys	Leu	Pro 105	Ile	Asp	Thr	Leu	Ile	Arg	Ser
Leu	Glu	Thr	Lys 115	Val	Gln	Phe	Phe	Ala 120	Ser	Gly	Cys	Ile	Met	Gln	Leu
Glu	Thr	Gly	Arg	Tyr	Leu	Leu	Ala	Phe 135	Arg	Asn	Thr	Met	Asp	Glu	Val
Thr 145	His	Glu	His	Leu	Leu 150	Ser	Met	Ile	Leu	Ala	Arg	Thr	Lys	Ile	Phe
Pro	Trp	Phe	Phe	Asp 165	Leu	Lys	Arg	Asn	Lys 170	Met	Leu	Ile	Asp	Ala	His
Trp	Phe	Ser	Tyr 180	Leu	Gly	Ile	Pro	Ala 185	Glu	Asp	Cys	Glu	Ile	Thr	Ile
Glu	Lys	Phe	Phe	Ser	Arg	Val	His	Pro 200	Asn	Glu	Arg	Asp	Met	Leu	Ala
Asp	Ala	Leu	Gln	Lys	Gln	Leu	Ser	Glu 215	Lys	Glu	Ile	Pro	Asp	Ser	Phe
Ser 225	Tyr	Arg	Leu	Gln	Arg	Gly	Asp	Gly	Ser	Trp 235	Glu	Trp	Phe	Ser	Glu
Gln	Ser	Met	Tyr	Leu	Ser	Lys	Thr	Asn	Asp 250	Gly	Ser	Pro	Tyr	Arg	Ile
Val	Gly	Val	Cys 260	His	Ser	Ile	Gln	Glu 265	His	Lys	Asn	Thr	Glu	Asp	Lys
Leu	Arg	Ala	Ala	Arg	Asn	Lys	Ala	Gln 280	Glu	Ser	Asp	Arg	Leu	Lys	Ser
Ala	Phe	Leu	Ala	Asn	Met	Ser	His	Glu 295	Ile	Arg	Thr	Pro	Leu	Asn	Ala
Ile 305	Val	Gly	Phe	Ser	Asn	Leu	Ile	Ala 315	Gly	Gly	Ile	Val	Asp	Leu	Asp
Thr	Glu	Glu	Ala	Arg	Asp	Tyr	Ser	Ala 330	Leu	Ile	Ser	Lys	Asn	Cys	Asn
Tyr	Leu	Leu	Thr 340	Leu	Val	Ser	Asp	Val 345	Leu	Asp	Leu	Ser	Cys	Ile	Glu
Ser	Asp	Thr 355	Met	Thr	Phe	Lys	Phe	Thr 360	Val	Tyr	Pro	Leu	Thr	Arg	Leu
Leu	Thr	Glu	Ile	Tyr	Gln	Lys	Tyr	Glu 375	Asn	Arg	Ile	Pro	Gln	Glu	Val
Gln 385	Phe	Asn	Leu	Leu	Leu	Pro	Thr	Asp 395	Asn	Val	Glu	Ile	Glu	Thr	Asp
Ala	Val	Arg	Leu	Arg	Gln	Val	Ile	Glu 410	His	Leu	Leu	Asp	Asn	Ala	Ala
Lys	Phe	Thr	Val 420	Lys	Gly	His	Ile	Asp 425	Ile	Gly	Tyr	Ala	Leu	Ser	Asp
His	Gly	Glu	Lys 435	Ile	Tyr	Val	Phe	Val 440	Ala	Asp	Thr	Gly	Cys	Gly	Ile
Pro	Ser	Asp	Gln	Tyr	Lys	Lys	Val	Phe 455	Glu	Arg	Phe	Tyr	Lys	Ile	Asp
Ser	Phe	Val	Gln	Gly	Ala	Gly	Leu	Gly 460	Leu	Ser	Val	Cys	Lys	Thr	Ile

465		470		475		480									
Val	Glu	Gly	Leu	Gly	Gly	Thr	Ile	Asn	Val	Tyr	Ser	Gln	Leu	Lys	Glu
		485		490		495									
Gly	Ser	Arg	Phe	Ser	Val	Ile	Leu	Pro	Leu	Asn	Arg	Leu	His	Lys	
		500						505					510		

<210> 6311

<211> 484

<212> PRT

<213> B.fragilis

<400> 6311

Ser	Asn	Phe	Pro	His	Thr	Phe	Ile	Trp	Gly	Glu	Ala	Gln	Gly	Glu	Ala
1				5					10					15	
Leu	Ile	Thr	Ser	Gly	Thr	Ser	Ala	Asp	Gly	Met	Gly	Met	Leu	Tyr	Gly
			20					25					30		
Asp	Ile	Lys	Leu	Gln	Asn	Leu	Ile	Glu	Asp	His	Thr	Glu	Gly	Ile	Lys
		35				40					45				
Lys	Phe	Gly	Asp	Ile	Phe	Gly	Arg	Leu	Thr	Asn	Leu	Asn	Leu	Phe	Ile
	50					55					60				
Ala	Arg	Val	Thr	Asp	Ala	Thr	Tyr	Met	Asp	Asp	Val	Lys	Lys	Gly	Tyr
65					70					75					80
Tyr	Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg	Ala	Phe	Tyr	Tyr	Phe	Asp	Leu
			85						90					95	
Tyr	Arg	Thr	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Thr	Ala	Asp	Val	Val
			100						105					110	
Glu	Gly	Val	Ile	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ala	Thr	Pro
		115					120					125			
Lys	Glu	Val	Met	Asp	Gln	Ile	Lys	Lys	Asp	Leu	Asp	Lys	Ser	Met	Glu
		130				135					140				
Ser	Phe	Gly	Asp	Asn	Asn	Ser	Phe	Asp	Pro	Asn	Asn	Arg	Gly	Asn	Lys
145					150					155					160
Lys	Gly	Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu	Val
			165						170					175	
Tyr	Leu	Trp	Ile	Ser	Lys	Val	Ser	Thr	Gly	Asp	Asp	Ala	Ala	Asn	Glu
			180						185					190	
Ala	Asn	Leu	Glu	Ile	Ala	Lys	Thr	His	Leu	Gln	Asn	Val	Ile	Asn	Asn
		195					200						205		
Tyr	Gly	Leu	Lys	Met	Leu	Asp	Asp	Phe	Ser	Ser	Val	Phe	Asp	Ala	Lys
		210				215						220			
Asn	Gly	Lys	Gly	Asn	Ser	Glu	Ile	Ile	Phe	Ala	Val	Arg	Tyr	Met	Glu
225				230						235					240
Gly	Glu	Ala	Gly	Asn	Asn	Asn	Asn	Leu	Phe	Thr	Tyr	Ala	Met	Ala	Thr
			245						250					255	
Gly	Ser	Thr	Lys	Asp	Asn	Tyr	Leu	Ala	Asn	Gly	Glu	Lys	Phe	Leu	Asp
			260					265						270	
Ala	Leu	Asn	Ile	Ala	Asn	Thr	Gly	Ser	Gln	Gln	Leu	Glu	Tyr	Lys	His
		275					280						285		
Glu	Ile	Tyr	Asn	Ser	Phe	Asp	Val	Ala	Asp	Thr	Arg	Arg	Glu	Ala	Thr
		290				295					300				
Phe	Ile	Ala	Ser	Tyr	Ser	Lys	Asn	Thr	Glu	Thr	Lys	Glu	Leu	Thr	Leu
305					310					315					320
Arg	Gly	Thr	His	Val	Arg	Lys	Asn	Ile	Gly	Tyr	Val	Asn	Ala	Gln	Gly
			325						330					335	
Ser	Arg	Ile	Tyr	Cys	Gly	Asp	Tyr	Ile	Ile	Tyr	Arg	Leu	Pro	Leu	Val
			340					345					350		
Tyr	Leu	Met	Leu	Ala	Glu	Ile	Glu	Asn	Met	Gln	Gly	Gly	Asp	Val	Ala
		355				360					365				
Lys	Tyr	Ile	Asn	Leu	Val	Arg	Glu	Arg	Ala	Tyr	Ser	Thr	Asn	Trp	Asp

370		375		380
Lys Ala Ile Tyr Gly Tyr Thr Asn Ala Asp Phe Thr Thr Asn Glu Leu				
385		390		395
Ala Ile Leu His Glu Lys Asp Lys Glu Phe Ile Gln Glu Gly Gln Arg				400
	405		410	
Trp Trp Asp Ile Arg Arg Met Thr Leu Thr Lys Gly Gly Lys His Leu				415
	420		425	
Val Phe Val Lys Glu Gly Ser Ile Gly Thr Asp Met Pro Thr Leu Asp				430
	435		440	
Glu Ala Thr Glu Ala His Lys Val Leu Trp Pro Val Asp Lys Asp Leu				445
	450		455	
Leu Gly Asn Asp Pro Leu Ile Tyr Gln Thr Pro Gly Tyr Ala Thr Tyr				460
465		470		475
Lys Lys Ala Glu				480

<210> 6312
 <211> 1089
 <212> PRT
 <213> B.fragilis

<400> 6312

Leu Lys Lys Ala Ile Leu Met Lys Lys Thr Ile Phe Leu Ile Leu Cys				
1	5		10	15
Ile Leu Cys Ser Leu Gly Ala Met Ala Gln Lys Lys Ser Ile Thr Gly				
	20		25	30
Val Val Met Asp Ala Ser Gly Glu Ser Ile Ile Gly Ala Ser Val Val				
	35		40	45
Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp Ile Ser Gly Lys Phe				
	50		55	60
Thr Leu Met Val Asp Pro Asn Gly Lys Ile Lys Val Ser Tyr Ile Gly				
	65		70	75
Tyr Gln Pro Gln Val Leu Asp Val Lys Gly Arg Asn Ser Phe Asn Ile				
	85		90	95
Lys Leu Lys Glu Asp Ser Glu Met Leu Asp Glu Val Val Val Thr Gly				
	100		105	110
Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr Asn Ser Ile Ser Lys				
	115		120	125
Val Ser Glu Glu Ser Leu Lys Val Gly Val Phe Ser Asn Pro Ala Gln				
	130		135	140
Ala Leu Ser Gly Ala Val Ser Gly Leu Lys Val Thr Gln Ser Ser Gly				
	145		150	155
Asn Pro Gly Ser Thr Pro Thr Ile Val Leu Arg Gly Gly Thr Glu Trp				
	165		170	175
Asp Gly Ser Gly Ser Pro Leu Val Met Val Asp Gly Gln Leu Arg Asp				
	180		185	190
Gly Leu Asn Asp Ile Asn Pro Glu Asp Ile Glu Ser Met Glu Val Leu				
	195		200	205
Lys Asp Ala Gly Ala Thr Ala Leu Tyr Gly Ala Arg Ala Ser Asn Gly				
	210		215	220
Val Ile Leu Ile Thr Thr Lys Thr Gly Lys Val Gly Lys Ala Glu Ile				
	225		230	235
Asn Leu Lys Ala Lys Val Gly Met Asn Tyr Ile Asn Asn Pro Tyr Asp				
	245		250	255
Phe Leu Gly Ala Lys Asp Phe Ile Thr Ala Ile Arg Thr Ala Tyr Asp				
	260		265	270
Thr Thr Pro Trp Ala Ser Lys Ser Ser Leu Asp Gly Ala Ser Ala Tyr				
	275		280	285
Gly Thr Gly Asn Lys Tyr Gly Ser Asp Leu Val Trp Asn Leu Leu Val				

Parameter	Unit	Value	Unit	Value	Unit	Value	Unit	Value
Temperature	°C	25.0	°C	25.0	°C	25.0	°C	25.0
Pressure	atm	1.0	atm	1.0	atm	1.0	atm	1.0
Flow rate	L/min	1.0	L/min	1.0	L/min	1.0	L/min	1.0
Concentration	g/L	0.1	g/L	0.1	g/L	0.1	g/L	0.1
pH		7.0		7.0		7.0		7.0
Time	min	10	min	10	min	10	min	10
Wavelength	nm	254	nm	254	nm	254	nm	254
Path length	cm	1.0	cm	1.0	cm	1.0	cm	1.0
Sample volume	μL	10	μL	10	μL	10	μL	10
Injection volume	μL	1	μL	1	μL	1	μL	1
Column		C18		C18		C18		C18
Mobile phase		Water		Water		Water		Water
Detector		UV		UV		UV		UV
Software		Chrom		Chrom		Chrom		Chrom
Version		1.0		1.0		1.0		1.0
Author		John Doe		John Doe		John Doe		John Doe
Date		2023-10-27		2023-10-27		2023-10-27		2023-10-27

Ser Gly Ile Glu Met Glu Leu Ser Gly Thr Ile Leu Lys Ile Lys Asp
 770 775 780
 Trp Thr Trp Lys Met Gly Gly Asn Ile Ser Tyr Asn Lys Asn Lys Val
 785 790 795 800
 Val Thr Leu Pro Asp Asn Gly Gln Pro Lys Asn Arg Ile Gly Gly Gln
 805 810 815
 Gln Ile Tyr Thr Gly Arg Lys Val Leu Asp Glu Ala Gly Asn Gln Val
 820 825 830
 Asp Glu Val Ile Phe Val Gly Gly Lys Gln Glu Arg Gln Glu Pro Gly
 835 840 845
 Ile Leu Val Gly Tyr Lys Ala Glu Gly Leu Tyr Lys Ser Trp Asp Asp
 850 855 860
 Ile Pro Glu Asn Leu Ile Val Lys Thr Gly Asn Tyr Gln Gly Lys Tyr
 865 870 875 880
 Gln Tyr Gly Pro Lys Ala Tyr Ala Ala Leu Ser Asp Ala Glu Lys Ala
 885 890 895
 Lys Ala Leu Gln Ile Ala Pro Gly Asp Val Lys Trp Lys Asp Ile Asn
 900 905 910
 Asn Asp Gly Thr Ile Asp Ala Phe Asp Gln Val Val Met Gly Asn Thr
 915 920 925
 Thr Pro His Trp Phe Gly Gly Phe Asn Thr Thr Leu Thr Trp Lys Gly
 930 935 940
 Leu Thr Leu Tyr Gly Arg Phe Asp Phe Ala Leu Asp Tyr Trp Ile Tyr
 945 950 955 960
 Asp Asn Thr Thr Pro Trp Phe Leu Gly Cys Met Gln Gly Gly Tyr Asn
 965 970 975
 Thr Thr Thr Asp Val Phe Asn Thr Trp Ser Glu Glu Asn Pro Asn Ala
 980 985 990
 Lys Tyr Pro Arg Tyr Val Trp Ala Asp Gln Leu Gly Thr Ala Asn Tyr
 995 1000 1005
 Tyr Arg Thr Ser Thr Met Phe Ala Tyr Lys Gly Asn Tyr Leu Ala Ile
 1010 1015 1020
 Arg Glu Ile Ser Leu Ser Tyr Ser Leu Pro Gln Asn Ile Ala Arg Lys
 1025 1030 1035 1040
 Phe Tyr Cys Gln Lys Leu Asp Val Ser Val Thr Gly Gln Asn Leu Gly
 1045 1050 1055
 Tyr Ile Thr Ser Ala Asn Val Ala Ser Pro Glu Val Ser Thr Ala Gly
 1060 1065 1070
 Ser Gly Tyr Ala Leu Pro Arg Thr Leu Leu Phe Gly Val Asn Val Thr
 1075 1080 1085
 Phe

<210> 6313
 <211> 542
 <212> PRT
 <213> B.fragilis

<400> 6313
 Lys Glu Lys Tyr Met Lys Arg Ile Lys Ser Thr Ile Leu Tyr Gly Leu
 1 5 10 15
 Leu Val Ala Ser Ser Gly Leu Leu Val Thr Ser Cys Ala Asp Lys Leu
 20 25 30
 Asp Leu Ser Pro Ile Asp Tyr Tyr Gly Ser Gly Ser Tyr Trp Lys Thr
 35 40 45
 Glu Ala Gln Ala Thr Ala Tyr Ile Asp Gly Ile His Lys His Leu Arg
 50 55 60
 Asp Ala Ala Trp Gln His Thr Ile Thr Phe Gly Glu Leu Arg Gly Gly
 65 70 75 80

Arg	Phe	Ile	Thr	Gly	Ala	Ser	Ser	Asp	Gly	Met	Gly	Val	Ser	Asn	Gly
				85					90					95	
Asp	Ile	Ile	Leu	Gln	Asn	Phe	Asp	Glu	Thr	His	Thr	Gly	Val	Ser	Lys
			100					105					110		
Phe	Gly	Asp	Leu	Phe	Gly	Arg	Ile	Thr	Asn	Leu	Asn	Leu	Phe	Ile	Ala
		115					120					125			
Arg	Val	Thr	Asp	Ala	Thr	Tyr	Leu	Ser	Asp	Glu	Met	Lys	Asn	Phe	Tyr
		130					135					140			
Leu	Gly	Glu	Val	Tyr	Gly	Leu	Arg	Ala	Phe	Tyr	Tyr	Phe	Asp	Leu	Tyr
		145			150					155					160
Arg	Ile	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Thr	Ala	Asp	Val	Val	Glu
			165						170						175
Gly	Val	Ile	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ser	Thr	Pro	Lys
			180						185					190	
Glu	Val	Met	Thr	Gln	Ile	Lys	Ser	Asp	Leu	Asn	Lys	Ser	Met	Glu	Tyr
		195					200					205			
Phe	Gly	Asn	Met	Asn	Asp	Phe	Asp	Pro	Tyr	Lys	Arg	Gly	Lys	Lys	Val
		210					215				220				
Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu	Val	Tyr	Leu
		225			230					235					240
Trp	Thr	Ser	Lys	Val	Thr	Thr	Gly	Asp	Asp	Val	Ala	Asn	Pro	Ala	Asp
			245						250						255
Leu	Thr	Ile	Ala	Lys	Thr	His	Leu	Glu	Ser	Val	Leu	Asn	Asn	Tyr	Asn
			260					265					270		
Leu	Lys	Met	Leu	Asp	Asp	Phe	Ser	Gln	Val	Phe	Asn	Ala	Lys	Asn	Lys
		275					280					285			
Ala	Asn	Asp	Glu	Ile	Ile	Phe	Ala	Ile	Arg	Phe	Leu	Glu	Gly	Glu	Ala
		290					295				300				
Thr	Asn	Ser	Asn	Gly	Thr	Phe	Thr	Tyr	Asn	Val	Gly	Thr	Gly	Ser	Thr
		305			310					315					320
Lys	Asn	Arg	Tyr	Gln	Ala	Asn	Gly	Glu	Val	Phe	Gly	Asp	Ala	Leu	Asp
			325					330						335	
Ile	Gln	Asn	Thr	Gly	Asn	Gln	Thr	Tyr	Glu	Tyr	Asn	Lys	Ala	Val	Tyr
			340					345					350		
Gln	Asn	Phe	Asp	Asp	Ala	Asp	Thr	Arg	Lys	Glu	Ala	Thr	Phe	Ile	Ala
		355					360					365			
Ser	Tyr	Asn	Lys	Asp	Gly	Lys	Thr	Gly	Glu	Leu	Ser	Leu	Tyr	Gly	Thr
		370				375					380				
His	Val	Arg	Lys	Asn	Ile	Gly	Tyr	Val	Asn	Ala	Gln	Gly	Ala	Arg	Val
		385			390					395					400
Tyr	Cys	Gly	Asp	Tyr	Ile	Phe	Tyr	Arg	Leu	Pro	Trp	Val	Tyr	Leu	Thr
			405					410						415	
Leu	Ala	Glu	Ile	Ala	Asn	Met	Glu	Gly	Asp	Asn	Ala	Ala	Val	Ala	Lys
			420					425					430		
Tyr	Ile	Asn	Leu	Val	Arg	Lys	Arg	Ala	Tyr	Gly	Asn	Ala	Trp	Asp	Glu
		435					440					445			
Ile	Leu	Tyr	Ala	Tyr	Pro	Glu	Thr	Ala	Asp	Phe	Thr	Thr	Asn	Glu	Leu
		450				455					460				
Ala	Ile	Leu	His	Glu	Lys	Asp	Lys	Glu	Phe	Ile	Gln	Glu	Gly	Gln	Arg
		465			470					475					480
Trp	Trp	Asp	Leu	Arg	Arg	Met	Thr	Leu	Thr	Lys	Gly	Gly	Thr	Pro	Leu
			485					490						495	
Val	Phe	Cys	Lys	Glu	Gly	Ser	Leu	Leu	Gly	Asp	Ala	Pro	Ile	Leu	Asn
			500				505						510		
Lys	Ser	Thr	Glu	Ala	His	Lys	Leu	Leu	Trp	Pro	Ile	Glu	Lys	Thr	Met
		515					520					525			
Leu	Asp	Lys	Asp	Pro	Ala	Leu	Glu	Gln	Thr	Pro	Gly	Tyr	Lys		
		530				535					540				

<400> 6314

Asn	Leu	Asn	Gln	Met	Lys	Asn	Ile	Phe	Leu	Ile	Ile	Gly	Ile	Ser	Leu
1				5					10					15	
Phe	Phe	Asn	Gly	Ser	Leu	Tyr	Ala	Gln	Ser	Asp	Asp	Trp	Ser	Pro	Lys
			20					25					30		
Asn	His	Asn	Leu	Ile	Lys	Ser	Val	Arg	Glu	Asp	Gly	Arg	Phe	Ser	Ser
		35					40				45				
Ser	Tyr	Gly	Val	Val	His	Ala	Met	Leu	Arg	Asn	Thr	Glu	Pro	Arg	Tyr
	50					55				60					
Ala	Phe	His	Arg	Glu	Phe	Ser	Pro	Lys	Glu	Phe	Arg	Lys	Trp	Gln	Lys
65				70						75				80	
Gly	Leu	Arg	His	Ala	Met	Glu	Glu	Ile	Met	Lys	Phe	Pro	Gln	Ile	Lys
			85					90						95	
Asn	Ser	Pro	Ala	Pro	Val	Cys	Ile	Lys	Arg	Glu	Gln	Arg	Glu	Gly	Tyr
			100					105					110		
Arg	Leu	Glu	Lys	Trp	Glu	Phe	Tyr	Pro	Leu	Pro	Glu	Cys	Val	Ser	Thr
		115					120					125			
Phe	Leu	Val	Leu	Ile	Pro	Asp	Asn	Ile	Asn	Lys	Pro	Val	Pro	Ala	Ile
	130					135				140					
Leu	Cys	Ile	Pro	Gly	Ser	Gly	Gly	Asn	Lys	Glu	Gly	Leu	Ala	Gly	Glu
145				150						155				160	
Pro	Gly	Ile	Ala	Pro	Lys	Leu	Asn	Asp	Arg	Tyr	Lys	Asp	Pro	Lys	Leu
			165					170					175		
Thr	Gln	Ala	Leu	Asn	Phe	Val	Lys	Glu	Gly	Tyr	Ile	Ala	Val	Ala	Val
		180					185					190			
Asp	Asn	Pro	Ala	Ala	Gly	Glu	Ala	Ser	Asp	Leu	Glu	Arg	Tyr	Thr	Leu
		195					200					205			
Gly	Ser	Asn	Tyr	Asp	Tyr	Asp	Val	Val	Ser	Arg	Tyr	Leu	Leu	Glu	Leu
	210					215					220				
Gly	Trp	Ser	Tyr	Leu	Gly	Tyr	Ala	Ser	Tyr	Leu	Asp	Met	Gln	Val	Leu
225				230						235				240	
Asn	Trp	Met	Lys	Thr	Gln	Lys	His	Ile	Arg	Lys	Asp	Arg	Ile	Val	Val
			245					250					255		
Ser	Gly	Phe	Ser	Leu	Gly	Thr	Glu	Pro	Met	Met	Val	Leu	Gly	Thr	Leu
		260					265						270		
Asp	Thr	Ser	Ile	Tyr	Ala	Phe	Val	Tyr	Asn	Asp	Phe	Leu	Cys	Gln	Thr
		275					280				285				
Gln	Glu	Arg	Ala	Glu	Val	Met	Thr	Met	Pro	Asp	Lys	Asn	Gly	Arg	Arg
	290					295					300				
Pro	Phe	Pro	Asn	Ser	Ile	Arg	His	Leu	Ile	Pro	Asp	Phe	Trp	Lys	Asn
305				310					315					320	
Phe	Asn	Phe	Pro	Asp	Ile	Val	Ala	Ala	Leu	Ala	Pro	Arg	Pro	Ile	Ile
			325					330					335		
Leu	Thr	Glu	Gly	Gly	Leu	Asp	Arg	Asp	Leu	Asp	Leu	Val	Arg	Lys	Ala
		340					345					350			
Tyr	Ala	Ile	Ala	Gly											

420

<210> 6315
 <211> 543
 <212> PRT
 <213> B.fragilis

<400> 6315

Asn	Thr	Arg	Asn	Met	Lys	Thr	Ile	Lys	Ser	Ile	Ile	Ile	Ser	Gly	Met
1				5					10					15	
Leu	Leu	Val	Val	Ser	Gly	Gly	Ile	Met	Thr	Ser	Cys	Ser	Asp	Leu	Leu
			20					25					30		
Asp	Leu	Ser	Pro	Ile	Asp	Phe	Tyr	Gly	Ser	Gly	Ser	Tyr	Trp	Thr	Thr
		35					40					45			
Glu	Ala	Gln	Val	Thr	Gly	Tyr	Met	Asp	Gly	Leu	His	Lys	His	Leu	Arg
	50					55					60				
Asp	Val	Ala	Glu	Gln	His	Ile	Phe	Thr	Phe	Gly	Glu	Leu	Arg	Gly	Gly
65					70					75				80	
Ile	Tyr	Arg	Ser	Gly	Asn	Ala	Ser	Asp	Gly	Asn	Ala	Leu	Asn	Tyr	Gly
			85					90					95		
Ser	Ile	Ile	Leu	Gln	Asn	Phe	Asp	Arg	Asn	Asn	Thr	Gly	Val	Thr	Gly
			100					105					110		
Phe	Gly	Gly	His	Tyr	Gly	Arg	Leu	Ala	Asn	Ile	Asn	Leu	Phe	Ile	Asp
		115					120					125			
Arg	Val	Ser	Lys	Ala	Asp	Tyr	Ile	Asp	Asp	Ala	Lys	Lys	Lys	Phe	Tyr
	130					135					140				
Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg	Ala	Phe	Ile	Tyr	Phe	Glu	Leu	Tyr
145					150					155				160	
Arg	Ile	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Asp	Val	Glu	Val	Ile	Asp
			165						170					175	
Gly	Val	Leu	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ala	Thr	Pro	Lys
		180						185					190		
Glu	Val	Met	Thr	Gln	Ile	Lys	Lys	Asp	Leu	Asp	Leu	Ser	Met	Glu	His
	195						200					205			
Phe	Gly	Asn	Val	Thr	Ala	Phe	Asp	Pro	Tyr	Asn	Arg	Gly	Lys	Lys	Val
	210					215					220				
Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu	Val	Tyr	Leu
225					230				235					240	
Trp	Thr	Ser	Lys	Val	Thr	Thr	Gly	Asp	Asn	Glu	Ala	Asn	Ile	Ala	Asp
			245					250					255		
Leu	Ala	Ile	Ala	Lys	Gln	His	Leu	Gln	Ser	Val	Ile	Asp	Asn	Tyr	Gly
		260					265					270			
Leu	Ser	Met	Met	Asp	Asn	Phe	Ser	Asp	Val	Phe	Glu	Ala	Lys	Ser	His
	275					280					285				
Lys	Gly	Asn	Asn	Glu	Ile	Ile	Phe	Ala	Ile	Arg	Tyr	Leu	Glu	Gly	Glu
	290				295					300					
Ala	Thr	Asn	Arg	Asn	Val	Asn	Tyr	Thr	Tyr	Met	Asn	Gln	Gly	Glu	Ile
305					310					315				320	
Asp	Lys	Gly	Gly	Phe	Arg	Glu	Asp	Gly	Thr	Pro	Trp	Asn	Asp	Pro	Leu
			325						330					335	
Gly	Leu	Lys	Lys	Ser	Gly	Ala	Gln	Trp	Cys	Glu	Tyr	Ile	Pro	Glu	Leu
		340					345					350			
Phe	Gln	Leu	Phe	Asp	Val	Glu	Asp	Thr	Arg	Arg	Asp	Ala	Thr	Phe	Leu
	355					360					365				
Ala	Ser	Tyr	Lys	Lys	Asp	Lys	Asp	Gly	Asn	Leu	Ser	Leu	Trp	Gly	Thr
	370					375				380					
His	Val	Gln	Lys	Asn	Ile	Gly	Tyr	Ile	Asn	Ser	Glu	Gly	Asn	Arg	Val
385				390					395					400	
Phe	Cys	Gly	Asp	Tyr	Ala	Phe	Tyr	Arg	Leu	Pro	Trp	Val	Tyr	Leu	Ser

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<211> 443
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<213> B.fragilis
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Gln	Arg	Ile	Gln	Glu	Leu	Ser	Phe	Glu	Glu	Asn	Ser	Arg	Leu	Thr	Val
			20					25					30		
Val	Thr	Gly	Arg	Arg	Arg	Ile	Gly	Lys	Thr	Ser	Leu	Ile	Met	Arg	Ala
		35					40					45			
Phe	Glu	Lys	Thr	Pro	Thr	Ile	Tyr	Leu	Phe	Val	Gly	Arg	Lys	Asn	Glu
	50					55				60					
Ala	Ser	Leu	Cys	Arg	Glu	Phe	Ile	Thr	Leu	Val	Ser	Gln	Ala	Leu	Asp
65				70					75					80	
Ile	Tyr	Val	Pro	Glu	Ile	Ser	Thr	Phe	Lys	Ser	Leu	Phe	Arg	Tyr	
			85					90					95		
Ile	Met	Glu	Val	Ala	Thr	Arg	Gln	Ser	Phe	Asn	Leu	Val	Ile	Asp	Glu
			100					105					110		
Phe	Gln	Glu	Phe	Tyr	Asn	Ile	Asn	Lys	Ser	Ile	Tyr	Ser	Asp	Ile	Gln
		115					120					125			
Asp	Ile	Trp	Asp	Gln	Tyr	Arg	Gln	Lys	Thr	His	Met	Asn	Phe	Val	Val
	130					135					140				

Ser Gly Ser Ile Tyr Ser Leu Met Glu Lys Ile Phe His Asn Glu Lys
 145 150 155 160
 Glu Pro Leu Phe Gly Arg Ala Asp Asn Ile Ile Lys Leu Ser Ala Phe
 165 170 175
 Ser Leu Asn Val Leu Lys Lys Ile Ile Lys Asp Tyr His Pro Gln Tyr
 180 185 190
 Thr Asn Asp Asp Leu Leu Ala Leu Tyr Ser Phe Ser Gly Gly Val Pro
 195 200 205
 Lys Tyr Val Glu Leu Phe Cys Asp Asn Arg Val Leu Thr Val Asp Gly
 210 215 220
 Met Ile Asp Phe Met Val Arg Asp Asn Ser Pro Phe Thr Asp Glu Gly
 225 230 235 240
 Lys Asn Leu Leu Ile Glu Glu Phe Gly Lys Asn Tyr Gly Thr Tyr Phe
 245 250 255
 Ser Ile Leu Ser Ala Ile Ser Gly Gly Tyr Asn Thr Gln Thr Glu Ile
 260 265 270
 Glu Ala Leu Leu Gly Glu Lys Ser Leu Gly Gly Tyr Leu Lys Arg Leu
 275 280 285
 Ile Glu Asp Tyr Asn Ile Val Val Arg Gln Arg Pro Val Phe Ser Lys
 290 295 300
 Glu Gly Ser Gln Thr Val Arg Tyr Gly Ile Cys Asp Asn Phe Ile His
 305 310 315 320
 Phe Trp Phe Asn Tyr Phe Asp Arg Asn Arg Ser Leu Ile Glu Ile Lys
 325 330 335
 Asn Phe Val Gly Leu Arg Lys Leu Ile Lys Ala Asp Tyr Pro Thr Tyr
 340 345 350
 Ser Gly Lys Ile Leu Glu Gln Tyr Phe Lys Gln Lys Tyr Ala Glu Ser
 355 360 365
 Tyr Glu Phe Arg Leu Ile Gly Ser Trp Trp Glu Pro Lys Gly Asn Gln
 370 375 380
 Asn Glu Ile Asp Ile Val Ala Ile Tyr Leu Asp Asn Lys Ser Ala Ile
 385 390 395 400
 Val Ala Glu Val Lys Arg Gln Lys Lys Asn Phe Lys Pro Glu Leu Phe
 405 410 415
 Gln Lys Lys Val Glu His Leu Glu Asn Lys Val Leu Ala Lys Tyr Gln
 420 425 430
 Ile Asn Thr Val Cys Leu Ser Leu Glu Asp Met
 435 440

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 <213> B.fragilis

<400> 6318
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 Lys Thr Lys Ser Glu Pro Phe His Lys Ile Lys Gly Lys Val Lys Leu
 20 25 30
 Ser Phe Tyr Tyr Gln Ile Glu Cys Phe Tyr Leu Phe Thr Thr Tyr Ser
 35 40 45
 Tyr Leu Gly Lys Phe Gln Lys Arg Asn Ile Ile Thr Tyr Phe Phe Phe
 50 55 60
 Leu Asn Phe Ile Val Arg
 65 70

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 <212> PRT

<213> B.fragilis

<400> 6319

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Thr Ser Leu Leu Leu Thr Gln Lys Ala Ile Leu Met Lys Lys Thr Ile
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Phe Leu Ile Leu Cys Ile Leu Cys Ser Leu Gly Ala Met Ala Gln Lys
20          25          30
Lys Ser Ile Thr Gly Val Val Thr Asp Ala Ser Gly Glu Ser Val Ile
35          40          45
Gly Ala Ser Val Val Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp
50          55          60
Ile Asp Gly Lys Phe Thr Leu Ser Val Asp Pro Asn Gly Lys Ile Arg
65          70          75          80
Val Ser Tyr Ile Gly Tyr Gln Pro Gln Val Leu Asp Val Lys Gly Lys
85          90          95
Asn Ser Phe Asn Ile Lys Leu Lys Glu Asp Ser Glu Met Leu Glu Glu
100          105          110
Val Val Val Thr Gly Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr
115          120          125
Asn Ser Ile Ala Lys Val Lys Asp Glu Ala Leu Lys Val Gly Leu Phe
130          135          140
Ser Asn Pro Ala Gln Ala Leu Ser Gly Ala Val Ala Gly Leu Lys Val
145          150          155          160
Thr Gln Ala Ser Gly Ser Pro Gly Ala Ala Pro Lys Val Thr Leu Arg
165          170          175
Gly Gly Thr Asn Phe Asp Gly Ser Gly Asp Pro Leu Val Ile Val Asp
180          185          190
Gly Gln Leu Arg Asp Gly Met Gln Asp Ile Asn Pro Glu Asp Ile Glu
195          200          205
Ser Met Glu Val Leu Lys Asp Ala Gly Ala Thr Ala Ile Tyr Gly Ala
210          215          220
Arg Ala Ser Asn Gly Val Ile Leu Ile Thr Thr Lys Thr Gly Lys Glu
225          230          235          240
Gly Arg Arg Glu Ile Asn Phe Lys Ala Lys Met Gly Leu Ser Tyr Val
245          250          255
Asn Asn Pro Tyr Asp Phe Leu Gly Ala Lys Asp Tyr Ile Asn Val Leu
260          265          270
Arg Thr Gly Tyr Ser Lys Ser Gly Phe Thr Thr Ser Asp Gly Glu Tyr
275          280          285
Val Ser Ile Ala Pro Leu Gly Asn Leu Thr Ser Ala Ser Pro Phe Gly
290          295          300
Thr Gly Asn Thr Leu Asn Asp Lys Thr Ile Trp Asn Ile Met Asn Lys
305          310          315          320
Thr Ala Asp Asn Ala Tyr Leu Leu Gln Lys Gly Trp Gln Glu Met Pro
325          330          335
Asp Pro Leu Asp Pro Ser Lys Thr Ile Leu Tyr Lys Asp Thr Asn Pro
340          345          350
Ala Asp Tyr Asn Leu Asn Asn Pro Ala Ile Ser Gln Asp Tyr Asn Ile
355          360          365
Asn Met Ser Gly Gly Asn Asp Lys Gly Thr Tyr Tyr Ala Gly Leu Gly
370          375          380
Tyr Asn Arg Gln Glu Gly Leu Pro Ile Lys Thr Phe Tyr Glu Arg Tyr
385          390          395          400
Ser Phe Val Leu Asn Ala Ser Tyr Lys Ile Thr Asp Trp Leu Thr Ser
405          410          415
Ser Ser Asn Phe Asn Tyr Asn Arg Ala Asn Trp Lys Asn Met Pro Gly
420          425          430
Ser Gln Thr Ser Glu Gly Asn Tyr Phe Gly Arg Ile Met Ser Thr Pro
435          440          445

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445

Pro Thr Val Arg Phe Gln Asp Glu Asp Gly Asn Pro Thr Leu Gly Pro
 450 455 460
 Val Ala Gly Asp Gly Asn Gln Asn Tyr Gln Pro Asp Lys Trp Trp Asn
 465 470 475 480
 Phe Asn Gln Ser Asp Lys Phe Thr Met Val Gln Ala Phe Gln Ile Asp
 485 490 495
 Ile Leu Lys Asn Leu Ser Val Lys Gly Thr Ala Asn Trp Tyr Tyr Ser
 500 505 510
 Glu Ser Leu Ala Glu Ser Phe Thr Arg Asp Tyr Glu Asn Thr Pro Gly
 515 520 525
 Gln Phe Val Arg Thr Arg Ser Ser Ser Ala Ser Phe Ser Arg Asp Phe
 530 535 540
 Ser Gln Thr Tyr Asn Val Val Leu Asn Tyr Asn Gln Thr Phe Ala Lys
 545 550 555 560
 Asp His Asn Val Ala Val Met Leu Gly Met Glu Tyr Phe Asp Arg Tyr
 565 570 575
 Ser Arg Ser Phe Ser Ala Ser Gly Ser Gly Ala Pro Thr Asp Asp Phe
 580 585 590
 Ala Asp Leu Ser Leu Thr Asp Asn Gly Glu Gly Lys Arg Ser Ile Asp
 595 600 605
 Ser Gly His Ser Asp Tyr Arg Ile Leu Ser Tyr Phe Gly Arg Leu Asn
 610 615 620
 Tyr Asp Tyr Lys Gly Arg Tyr Leu Leu Ser Ala Val Phe Arg Gln Asp
 625 630 635 640
 Gly Tyr Ser Ser Leu Leu Gly Asp Asn Arg Trp Gly Phe Phe Pro Gly
 645 650 655
 Val Ser Ala Gly Trp Ile Phe Gly Gln Glu Asn Phe Val Lys Asn Ala
 660 665 670
 Leu Pro Phe Leu Ser Phe Gly Lys Leu Arg Ala Ser Tyr Gly Val Asn
 675 680 685
 Gly Asn Ala Thr Gly Ile Gly Ala Tyr Asp Leu Gln Gly Ser Tyr Asn
 690 695 700
 Ser Gln Lys Tyr Asn Gly Asn Val Gly Phe Leu Ile Gly Ala Leu Pro
 705 710 715 720
 Asn Pro Gly Leu Lys Trp Glu Lys Thr Arg Thr Ala Glu Val Gly Ile
 725 730 735
 Asp Met Ser Phe Phe Glu Asn Arg Leu Asn Ala Asn Phe Thr Tyr Tyr
 740 745 750
 Asn Arg Leu Thr Ser Asp Lys Tyr Ala Asn Leu Ser Leu Pro Ser Thr
 755 760 765
 Thr Gly Phe Ser Ser Ile Lys Asn Asn Asn Gly Lys Phe Arg Asn Ser
 770 775 780
 Gly Val Glu Ile Glu Leu Ser Gly Lys Ile Leu Lys Thr Lys Asp Trp
 785 790 795 800
 Ser Trp Asp Leu Gly Gly Asn Ile Ser Phe Asn Lys Asn Lys Ile Val
 805 810 815
 Ser Leu Pro Asp Asn Gly Leu Ile Arg Asn Gln Gln Asp Ala Ala Gln
 820 825 830
 Ile Tyr Ser Gly Arg Gln Leu Ser Asp Gly Thr Tyr Glu Lys Ile Trp
 835 840 845
 Val Gly Gly Asn Gln Glu Gly Tyr Glu Pro Gly Val Leu Ile Ala Tyr
 850 855 860
 Lys Ala Asp Gly Leu Tyr Arg Ser Trp Asp Glu Ile Pro Gly Asp Leu
 865 870 875 880
 Val Val Thr Ser Gly Asn Tyr Phe Gly Lys Lys Met Tyr Gly Pro Glu
 885 890 895
 Ala Trp Lys Lys Leu Ser Ser Ala Glu Gln Lys Asn Ala Leu Pro Ile
 900 905 910
 Gln Pro Gly Asp Val Lys Trp Arg Asp Ile Asn Gly Asp Gly Met Ile

915	920	925
Asp Asn Tyr Asp Gln Val Val Val Gly Asn Thr Asn Pro His Trp Ile		
930	935	940
Gly Gly Phe Asn Thr Thr Leu Arg Trp Lys Asn Phe Gln Leu Tyr Gly		
945	950	955
Arg Phe Asp Phe Ala Phe Asp Tyr Trp Ile Tyr Asp Asn Thr Thr Pro		
	965	970
Trp Phe Leu Gly Cys Met Gln Gly Thr Tyr Asn Thr Thr Lys Asp Val		
	980	985
Phe Asn Thr Trp Ser Glu Glu Asn Pro Asn Ala Lys Tyr Pro Arg Phe		
	995	1000
Val Tyr Ala Asp Gln Leu Met Asn Ala Asn Tyr Tyr Arg Thr Ser Thr		
	1010	1015
Leu Phe Ala Tyr Lys Gly Asn Tyr Leu Ala Ile Arg Glu Ile Ser Leu		
1025	1030	1035
Ser Tyr Ser Leu Pro Lys Ala Trp Ala Asn Lys Ala Tyr Cys Gln Lys		
	1045	1050
Val Asp Val Ser Ile Thr Gly Gln Asn Leu Gly Tyr Ile Thr Ser Ala		
	1060	1065
Asn Val Ala Ser Pro Glu Val Ser Ser Ala Gly Ser Gly Tyr Ala Leu		
	1075	1080
Pro Arg Thr Leu Leu Phe Gly Leu Asn Val Thr Phe		
	1090	1095
		1100

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<211> 329

<212> PRT

<213> B.fragilis

<400> 6320

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Glu Lys Tyr Asn Gly Ile Ser Asp Ala Cys Ile Leu Thr Asp Glu Lys		
	20	25
Asn Gly Thr Ile Tyr Val Ala Gly Leu Trp Met Tyr Gly Val Leu Asp		
	35	40
Pro Arg Ser Gly Lys Trp Val Glu Gly Met Thr Gln Asp Ser Thr Arg		
	50	55
Trp Ile His Gln Trp His Ala Lys Gly Ser Gln Pro Gly Leu Gly Ala		
	65	70
Lys Glu Thr Cys Gln Phe Leu Ile Thr Lys Ser Val Asp Asp Gly Leu		
	85	90
Thr Trp Ser Asp Pro Val Asn Ile Thr Ala Gln Thr Lys Lys Pro Glu		
	100	105
Trp Trp Leu Tyr Ala Pro Ala Pro Gly His Gly Ile Thr Leu Lys Asp		
	115	120
Gly Thr Leu Ile Phe Pro Thr Gln Gly Arg Asp Lys Asp Gly Ile Pro		
	130	135
Phe Ser Asn Ile Thr Tyr Ser Lys Asp Gly Gly Lys Thr Trp Ile Ala		
	145	150
Ser Lys Pro Ala Tyr His Asn Thr Thr Glu Cys Met Ala Val Glu Leu		
	165	170
Gln Asp Gly Ser Val Met Leu Asn Met Arg Asp Asn Arg Asn His Gly		
	180	185
Asn Lys Lys Val Asn Gly Arg Arg Ile Cys Val Thr Ser Asp Leu Gly		
	195	200
Ser Thr Trp Thr Glu His Ser Thr Ser Arg Lys Ala Leu Ile Glu Pro		
	210	215
Thr Cys Met Ala Ser Ile His Arg His Thr Tyr Gln Glu Asn Gly Arg		
		220

225		230		235		240									
Gln	Lys	Thr	Leu	Leu	Leu	Phe	Cys	Asn	Pro	Glu	Ser	Tyr	Asp	Ser	Arg
		245		250		255									
Asp	His	Met	Thr	Leu	Lys	Cys	Ser	Leu	Asp	Asp	Gly	Asn	Thr	Trp	Asp
		260		265		270									
Ser	Gly	Arg	Lys	Ile	Met	Leu	Asp	Glu	Leu	Gly	Ser	Phe	Gly	Tyr	Ser
		275		280		285									
Cys	Ile	Thr	Ser	Val	Asn	Asp	Ser	Thr	Ile	Gly	Val	Phe	Tyr	Glu	Ser
		290		295		300									
Ser	Gln	Ala	Gln	Met	Val	Phe	Gln	Gln	Ile	Gln	Leu	Lys	Glu	Leu	Ile
		305		310		315									
Gly	Lys	Gly	Lys	Ser	Tyr	Lys	Glu	Arg							
				325											

<210> 6321

<211> 248

<212> PRT

<213> B.fragilis

<400> 6321

Leu	Glu	Trp	Ser	Pro	Leu	Ser	Phe	His	Asn	Cys	Asn	Lys	Leu	Arg	Met
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Asn	Phe	Lys	Glu	Gly	Glu	Val	Leu	Tyr	Phe	Asn	Lys	Pro	Leu	Gly	Trp
		20						25					30		
Thr	Ser	Phe	Lys	Val	Val	Gly	His	Ala	Arg	Tyr	His	Met	Cys	Arg	Arg
		35				40						45			
Met	Lys	Val	Lys	Lys	Leu	Lys	Val	Gly	His	Ala	Gly	Thr	Leu	Asp	Pro
		50				55					60				
Leu	Ala	Thr	Gly	Val	Met	Ile	Val	Cys	Thr	Gly	Lys	Ala	Thr	Lys	Arg
		65			70					75					80
Ile	Glu	Glu	Phe	Gln	Tyr	His	Thr	Lys	Glu	Tyr	Val	Ala	Thr	Ile	Gln
			85						90					95	
Leu	Gly	Ala	Thr	Thr	Pro	Ser	Tyr	Asp	Leu	Glu	His	Glu	Ile	Asp	Ala
		100						105					110		
Thr	Tyr	Pro	Thr	Glu	His	Ile	Thr	Arg	Glu	Leu	Val	Glu	Lys	Thr	Leu
		115					120						125		
Lys	Thr	Phe	Val	Gly	Glu	Ile	Gln	Gln	Ile	Pro	Pro	Ala	Phe	Ser	Ala
		130				135					140				
Cys	Lys	Val	Asp	Gly	Ala	Arg	Ala	Tyr	Asp	Leu	Ala	Arg	Lys	Gly	Gln
		145			150					155					160
Glu	Val	Glu	Leu	Lys	Pro	Lys	Leu	Leu	Val	Ile	Asp	Glu	Ile	Glu	Leu
			165						170					175	
Leu	Glu	Cys	Asn	Leu	Pro	Glu	Ile	Lys	Ile	Arg	Val	Val	Cys	Ser	Lys
			180					185					190		
Gly	Thr	Tyr	Ile	Arg	Ala	Leu	Ala	Arg	Asp	Ile	Gly	Glu	Ala	Leu	Gln
		195				200						205			
Ser	Gly	Ala	His	Leu	Thr	Gly	Leu	Ile	Arg	Thr	Arg	Val	Gly	Asp	Val
		210				215						220			
Lys	Leu	Glu	Gln	Cys	Leu	Asp	Pro	Ala	Lys	Phe	Ala	Glu	Trp	Ile	Asp
		225			230					235					240
Gln	Gln	Asp	Val	Glu	Ile	Ser	Asp								
				245											

<210> 6322

<211> 142

<212> PRT

<213> B.fragilis

<400> 6322

Val Ile Cys Pro Leu Phe Thr Val Tyr Cys Leu Pro Phe Val Ile Ile
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 Met Ala Asn Thr Leu Cys Lys Ala Glu Arg Leu Asn Ser Lys Ile Leu
 20 25 30
 Ile Glu Lys Met Phe Ala Gly Gly Ser Lys Ser Phe Ser Ile Phe Pro
 35 40 45
 Leu Arg Val Val Tyr Met Pro Val Glu Asn Gln Asp Val Gln Ala Ser
 50 55 60
 Ile Leu Leu Ser Val Ser Lys Lys Arg Phe Lys Arg Ala Val Lys Arg
 65 70 75 80
 Asn Arg Val Lys Arg Gln Leu Arg Glu Ala Tyr Arg Met His Lys His
 85 90 95
 Gln Leu Leu Gln Ile Leu Thr Asp Lys Gln Gln Gln Leu Ala Ile Ala
 100 105 110
 Phe Ile Tyr Leu Ser Asp Glu Leu Thr Ser Ser Ala Glu Ile Glu Glu
 115 120 125
 Lys Met Lys Ile Leu Leu Ala Arg Ile Ser Glu Lys Leu Val
 130 135 140

<210> 6323
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 <213> B.fragilis

<400> 6323
 Ile Asn Asn Thr Gly Ser Tyr Thr Lys Lys Phe Val Val Ile Ile Pro
 1 5 10 15
 Phe Pro Val Phe Lys Lys Arg Asn Glu Glu Thr Leu Asn Phe Trp Tyr
 20 25 30
 Asn Phe Leu Leu Ile Val Ser Arg Tyr Lys Asn Met Phe Asp Tyr Arg
 35 40 45
 Gln Asn Asp Ser Phe Pro Thr Tyr His Lys Pro Cys Ser Asn Val Leu
 50 55 60
 Leu Arg Gln Asn Thr Tyr Gly Ser Lys
 65 70

<210> 6324
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 <212> PRT
 <213> B.fragilis

<400> 6324
 Ile Glu Met Thr Lys Asn Lys Leu Leu Ser Cys Val Ile Gly Val Ile
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 Ile Leu Ser Leu Leu Val Gly Ala Tyr Phe Tyr Gln Arg Asn Lys Val
 20 25 30
 Ala Val His Gln Gln Ala Glu Arg Leu Phe Val Gln Met Leu Gln Glu
 35 40 45
 Glu Ile Glu Arg Lys Glu Arg Asn Leu Asn Leu Phe His Leu Phe Ser
 50 55 60
 Glu Ser Ser Ser Asp Thr Leu Pro Leu Lys Ile Cys Ile Ile Thr Glu
 65 70 75 80
 Glu Gly Lys Lys Glu Tyr Glu Val Asp Ser Leu Lys Ser Lys Lys Asn
 85 90 95
 Ile Ser Gln Asn Leu Arg Asn Arg Ser Ile His Ser Ile Leu Cys Glu
 100 105 110
 Lys Ser His Leu Leu Pro Asp Ser Leu Asn Glu His Trp Gln Ser Met
 115 120 125
 Leu Lys Lys Asp His Ile Asp Thr Glu Ser Thr Ile His Val Arg Met

130 135 140
 Glu Asn Leu Gln Gly Lys Ile Ile Ser Ser Ser Ser His Asp Gly Val
 145 150 155 160
 Trp Asp Thr Ser Ser Gly Ile Ile Thr Ser Tyr Ile Gly Asn Arg Cys
 165 170 175
 Glu Ile Glu Val Ile Gly Leu Leu Ala Phe Ser Trp Lys Thr Ile Leu
 180 185 190
 Trp Tyr His Trp Gln Pro Phe Gly Trp Ile Val Ile Cys Leu Leu Leu
 195 200 205
 Met Leu Leu Phe Ile Cys Phe Tyr Tyr Lys Lys Val Asn Arg Pro Pro
 210 215 220
 Glu Leu Lys Glu Val Pro Tyr Glu Val Val Val Glu Lys Glu Val Val
 225 230 235 240
 Val Glu Lys Glu Val Ile Arg Glu Ile Ile Val Glu Lys Glu Thr Ser
 245 250 255
 Pro Glu Lys Lys Ala Pro Leu Ile Lys Gln Ile Cys Lys Val Glu Gly
 260 265 270
 Gln Leu Tyr Gly Leu Arg Tyr Gly Val Val Phe Asp Ala Gln Asn Arg
 275 280 285
 Val Leu Asn Cys Asn Gly Lys Lys Met Ser Leu Ser Pro Gln Gln Cys
 290 295 300
 Gln Ile Leu Lys Leu Phe Leu Asp Ala Pro Asp Tyr Thr Val Thr Asp
 305 310 315 320
 Glu Asp Ile Ile Lys Phe Ile Trp Lys Gly Gln Ser Asn Val Gln Ile
 325 330 335
 Asn Thr Phe Cys Ser Ala Gly Asn Lys Leu Gly Lys Arg Leu Glu Gln
 340 345 350
 Ala Gly Cys Gly Val Cys Phe Arg Arg Phe Gly Ser Asp Arg Tyr Arg
 355 360 365
 Met Leu Phe Ile Asp Asp Leu Val Asp Asn Asp Leu Thr
 370 375 380

<210> 6325
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 <212> PRT
 <213> B.fragilis

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 Pro Ala Ser Glu Lys Ser Pro Tyr Tyr Asp Ile Ala Glu Lys Tyr Gly
 20 25 30
 Val Lys Ile Asp Phe Arg Pro Phe Ile Lys Val Glu Ser Val Ser Ala
 35 40 45
 Lys Glu Phe Arg Gln Gln Lys Val Ser Ile Leu Asp His Thr Ala Val
 50 55 60
 Ile Phe Thr Ser Arg His Ala Ile Asp His Phe Phe His Leu Cys Thr
 65 70 75 80
 Glu Leu Arg Val Thr Ile Pro Glu Thr Met Lys Tyr Phe Cys Val Thr
 85 90 95
 Glu Ala Val Ala Leu Tyr Ile Gln Lys Tyr Val Gln Tyr Arg Lys Arg
 100 105 110
 Lys Ile Phe Phe Gly Ala Thr Gly Lys Ile Glu Asp Leu Ile Pro Ser
 115 120 125
 Ile Val Lys His Lys Thr Glu Lys Tyr Leu Val Pro Met Ser Asp Val
 130 135 140
 His Asn Asp Asp Val Arg Asp Leu Leu Asp Lys Asn Asn Ile Gln His
 145 150 155 160
 Thr Glu Cys Val Met Tyr Arg Thr Val Ser Asn Asp Phe Met Glu Gly

				165					170					175			
Glu	Glu	Phe	Asp	Tyr	Asp	Met	Leu	Val	Phe	Phe	Ser	Pro	Ala	Gly	Val		
			180					185					190				
Ser	Ser	Leu	Lys	Lys	Asn	Phe	Pro	Asp	Phe	Asp	Gln	Lys	Asp	Ile	Lys		
		195					200					205					
Ile	Gly	Thr	Phe	Gly	Ser	Thr	Thr	Ala	Gln	Ala	Val	Arg	Asp	Ala	Gly		
	210				215						220						
Leu	Arg	Leu	Asp	Leu	Glu	Ala	Pro	Asn	Val	Lys	Ala	Pro	Ser	Met	Thr		
225					230					235					240		
Ala	Ala	Leu	Asp	Leu	Phe	Ile	Lys	Glu	Asn	Asn	Lys	Gly	Lys				
			245					250									

<210> 6326
 <211> 280
 <212> PRT
 <213> B.fragilis

Val	Cys	Arg	Tyr	Met	Ile	Phe	Val	Gln	Asp	Ser	Leu	Gly	Ala	Gln	Glu		
1			5					10						15			
Ala	Asp	Thr	Val	Gln	His	Val	Ile	Ser	Ala	Ala	Gly	Ala	Pro	Gln	Asp		
		20						25					30				
Thr	Leu	Gly	Ser	Arg	Val	Asp	Leu	Gln	Ala	Val	Ser	Lys	Thr	Val	Thr		
		35					40					45					
Gly	Ala	Glu	Gly	Met	Pro	Ile	Pro	Tyr	Ser	Pro	Arg	Thr	Asp	Asp	Gly		
	50					55					60						
Leu	Ala	Met	Ile	Leu	Leu	Gly	Cys	Phe	Phe	Val	Ser	Ala	Tyr	Val	Leu		
65				70						75					80		
Ala	Arg	Ser	Lys	Lys	Phe	Leu	Leu	Gln	Gln	Val	Lys	Asp	Phe	Met	Leu		
			85						90					95			
His	Arg	Glu	Arg	Thr	Ser	Ile	Phe	Ala	Ser	Ser	Thr	Ala	Ala	Asp	Met		
		100						105					110				
Arg	Tyr	Leu	Leu	Leu	Leu	Ile	Val	Gln	Thr	Cys	Val	Leu	Gly	Gly	Val		
	115					120						125					
Cys	Ile	Phe	Asn	Tyr	Phe	Asn	Asp	Ile	Arg	Pro	Ala	Leu	Met	Glu	Arg		
	130					135					140						
Val	Ser	Pro	His	Ile	Leu	Leu	Gly	Val	Tyr	Val	Ala	Val	Cys	Leu	Leu		
145				150						155					160		
Tyr	Leu	Leu	Phe	Lys	Trp	Ile	Leu	Tyr	Ser	Phe	Leu	Gly	Trp	Val	Phe		
				165					170					175			
Phe	Asp	Lys	Ser	Lys	Thr	Asp	Ile	Trp	Leu	Glu	Ser	Tyr	Ser	Thr	Leu		
		180						185					190				
Ile	Tyr	Tyr	Leu	Gly	Phe	Ala	Leu	Phe	Pro	Phe	Val	Leu	Phe	Leu	Val		
	195					200						205					
Tyr	Phe	Asp	Leu	Asn	Val	Thr	Phe	Leu	Val	Ser	Ile	Gly	Cys	Val	Leu		
	210					215					220						
Val	Ile	Phe	Thr	Lys	Ile	Leu	Met	Phe	Tyr	Lys	Trp	Leu	Lys	Leu	Phe		
225				230						235					240		
Ser	Cys	Asn	Ile	Tyr	Gly	Val	Phe	Leu	Leu	Ile	Leu	Tyr	Phe	Cys	Ala		
			245					250						255			
Leu	Glu	Ile	Val	Pro	Cys	Leu	Ile	Val	Tyr	Gln	Gly	Met	Ile	Gln	Leu		
		260						265						270			
Asn	Asn	Val	Leu	Ile	Ile	Asn	Phe										
		275					280										

<210> 6327
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 6327

Phe Asp Asp Leu Cys Ile Gln Lys Glu Thr Leu Met Lys Ser Lys Ser
 1 5 10 15
 Arg Asn Asn Ala Val Ser Tyr Phe Asp Met Gln Phe Ile Thr Ser Ser
 20 25 30
 Ile Ser Thr Thr Leu Val Leu Leu Leu Gly Leu Val Val Phe Phe
 35 40 45
 Val Leu Ala Ala Asn Asn Leu Ser Val Tyr Val Arg Glu Asn Ile Asn
 50 55 60
 Phe Ser Val Leu Ile Ser Asp Asp Met Lys Glu Thr Asp Ile Leu Lys
 65 70 75 80
 Leu Gln Lys Arg Leu Asn Asn Glu Pro Phe Val Lys Glu Thr Glu Tyr
 85 90 95
 Ile Ser Lys Lys Gln Ala Leu Lys Glu Gln Thr Glu Ala Met Gly Thr
 100 105 110
 Asp Pro Gln Glu Phe Leu Gly Tyr Asn Pro Phe Thr Ala Ser Ile Glu
 115 120 125
 Ile Lys Leu His Ser Asp Tyr Ala Asn Ser Asp Ser Ile Ala Lys Ile
 130 135 140
 Glu Lys Leu Ile Lys Arg Asn Thr Asn Ile Gln Asp Val Leu Tyr Gln
 145 150 155 160
 Lys Asp Leu Ile Asp Ala Val Asn Glu Asn Ile Arg Asn Ile Ser Leu
 165 170 175
 Val Leu Leu Ala Leu Ala Val Met Leu Thr Phe Ile Ser Phe Ala Leu
 180 185 190
 Ile Asn Asn Thr Ile Arg Leu Ala Ile Tyr Ser Lys Arg Phe Leu Ile
 195 200 205
 His Thr Met Lys Leu Val Gly Ala Ser Trp Gly Phe Ile Arg Arg Pro
 210 215 220
 Phe Leu Lys Arg Asn Ile Trp Ser Gly Val Leu Ala Ala Phe Ile Ala
 225 230 235 240
 Asp Thr Ile Leu Met Gly Ala Ala Tyr Trp Leu Val Ser Tyr Glu Pro
 245 250 255
 Glu Leu Ile Arg Val Ile Thr Pro Glu Val Met Leu Leu Val Ser Gly
 260 265 270
 Ala Val Leu Val Phe Gly Val Val Ile Thr Phe Leu Cys Ala Tyr Leu
 275 280 285
 Ser Ile Asn Lys Tyr Leu Arg Met Lys Ala Ser Thr Leu Tyr Tyr Val
 290 295 300

<210> 6328

<211> 76

<212> PRT

<213> B.fragilis

<400> 6328

Asn Val Tyr Leu Met Lys Met Lys Asn Tyr Leu Lys Val Thr Val Phe
 1 5 10 15
 Trp Val Ala Val Leu Ser Val Trp Cys Leu Lys Pro Thr Lys Lys Ser
 20 25 30
 Gln Asp Thr Leu Leu Leu Gln Asn Val Glu Ala Leu Ala Ser Gly Glu
 35 40 45
 Glu Pro Ser Gln Ile His Cys Tyr Trp Arg Gly Ser Val Asp Cys Pro
 50 55 60
 Val Ser His Asp Lys Val Glu Val Val Tyr Glu Tyr
 65 70 75

<210> 6329

<211> 437
 <212> PRT
 <213> B.fragilis

<400> 6329

Phe	Ile	Ile	His	Asn	Phe	Ile	Met	Gly	Tyr	Leu	Phe	Thr	Ser	Glu	Ser	1	5	10	15
Val	Ser	Glu	Gly	His	Pro	Asp	Lys	Val	Ala	Asp	Gln	Ile	Ser	Asp	Ala	20	25	30	
Val	Leu	Asp	Lys	Leu	Leu	Ala	Tyr	Asp	Pro	Ser	Ser	Lys	Val	Ala	Cys	35	40	45	
Glu	Thr	Leu	Val	Thr	Thr	Gly	Gln	Val	Val	Leu	Ala	Gly	Glu	Val	Lys	50	55	60	
Thr	Gly	Ala	Tyr	Val	Asp	Leu	Gln	Leu	Ile	Ala	Arg	Glu	Val	Ile	Gln	65	70	75	80
Lys	Ile	Gly	Tyr	Thr	Lys	Gly	Glu	Tyr	Met	Phe	Glu	Ser	Asn	Ser	Cys	85	90	95	
Gly	Val	Leu	Ser	Ala	Ile	His	Glu	Gln	Ser	Ala	Asp	Ile	Asn	Arg	Gly	100	105	110	
Val	Glu	Arg	Glu	Asp	Pro	Met	Asn	Gln	Gly	Ala	Gly	Asp	Gln	Gly	Met	115	120	125	
Met	Phe	Gly	Tyr	Ala	Thr	Asn	Glu	Thr	Glu	Asn	Tyr	Met	Pro	Leu	Ser	130	135	140	
Leu	Asp	Leu	Ala	His	Arg	Ile	Leu	Leu	Val	Leu	Ala	Asp	Ile	Arg	Arg	145	150	155	160
Glu	Gly	Lys	Glu	Met	Thr	Tyr	Leu	Arg	Pro	Asp	Ala	Lys	Ser	Gln	Val	165	170	175	
Thr	Ile	Glu	Tyr	Asp	Asp	Asn	Gly	Thr	Pro	Val	Arg	Ile	Asp	Thr	Ile	180	185	190	
Val	Val	Ser	Thr	Gln	His	Asp	Glu	Phe	Ile	Leu	Pro	Ala	Asp	Asp	Ser	195	200	205	
Ala	Ala	Ala	Gln	Leu	Lys	Ala	Asp	Glu	Glu	Met	Leu	Ala	Val	Ile	Arg	210	215	220	
Lys	Asp	Val	Ile	Glu	Val	Leu	Met	Pro	Arg	Val	Ile	Ala	Ser	Ile	Asn	225	230	235	240
His	Pro	Lys	Val	Leu	Ala	Leu	Phe	Asn	Asp	His	Ile	Ile	Tyr	His	Val	245	250	255	
Asn	Pro	Thr	Gly	Lys	Phe	Val	Ile	Gly	Gly	Pro	His	Gly	Asp	Thr	Gly	260	265	270	
Leu	Thr	Gly	Arg	Lys	Ile	Ile	Val	Asp	Thr	Tyr	Gly	Gly	Lys	Gly	Ala	275	280	285	
His	Gly	Gly	Gly	Ala	Phe	Ser	Gly	Lys	Asp	Pro	Ser	Lys	Val	Asp	Arg	290	295	300	
Ser	Ala	Ala	Tyr	Ala	Ala	Arg	His	Ile	Ala	Lys	Asn	Leu	Val	Ala	Ala	305	310	315	320
Gly	Val	Ala	Asp	Glu	Met	Leu	Val	Gln	Val	Ser	Tyr	Ala	Ile	Gly	Val	325	330	335	
Ala	Arg	Pro	Ile	Asn	Ile	Tyr	Val	Asn	Thr	Tyr	Gly	Arg	Ser	Asn	Val	340	345	350	
Lys	Met	Ser	Asp	Gly	Glu	Ile	Ala	Lys	Lys	Ile	Asp	Glu	Leu	Phe	Asp	355	360	365	
Leu	Arg	Pro	Lys	Ala	Ile	Glu	Asp	Arg	Leu	Lys	Leu	Arg	Tyr	Pro	Ile	370	375	380	
Tyr	Ser	Glu	Thr	Ala	Ala	Tyr	Gly	His	Met	Gly	Arg	Glu	Pro	Gln	Met	385	390	395	400
Val	Thr	Lys	His	Phe	Gln	Ser	Arg	Tyr	Glu	Gly	Asp	Arg	Thr	Met	Glu	405	410	415	
Val	Glu	Leu	Phe	Thr	Trp	Glu	Lys	Leu	Asp	Tyr	Val	Asp	Lys	Val	Lys	420	425	430	

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<210> 6330
<211> 439
<212> PRT
<213> B.fragilis
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Leu 1	Asn	Phe	Lys	Thr 5	Tyr	Tyr	His	Ser	Met 10	Asn	Phe	Val	Glu	Glu 15	Leu
Arg	Trp	Arg	Gly 20	Met	Val	His	Asp 25	Met	Met	Pro	Gly	Thr 30	Glu	Glu	Leu
Leu	Ala	Lys 35	Glu	Gln	Val	Thr 40	Ala	Tyr	Val	Gly	Ile 45	Asp	Pro	Thr	Ala
Asp	Ser 50	Leu	His	Ile	Gly 55	His	Leu	Cys	Gly	Val 60	Met	Ile	Leu	Arg	His
Phe 65	Gln	Arg	Cys	Gly 70	His	Lys	Pro	Leu	Ala 75	Leu	Ile	Gly	Gly	Ala	Thr 80
Gly	Met	Ile	Gly 85	Asp	Pro	Ser	Gly	Lys 90	Ser	Ala	Glu	Arg	Asn	Leu	Leu
Asp	Glu	Glu	Thr 100	Leu	Arg	His	Asn 105	Gln	Ala	Cys	Ile	Lys	Lys	Gln	Leu
Ala	Lys	Phe 115	Leu	Asp	Phe	Glu	Ser 120	Asp	Ala	Pro	Asn	Arg	Ala	Glu	Leu
Val	Asn 130	Asn	Tyr	Asp	Trp	Met 135	Lys	Glu	Phe	Thr	Phe 140	Leu	Asp	Phe	Ala
Arg 145	Glu	Val	Gly	Lys 150	His	Ile	Thr	Val	Asn	Tyr 155	Met	Met	Ala	Lys	Glu
Ser	Val	Lys	Lys 165	Arg	Leu	Asn	Gly	Glu	Ala 170	Arg	Asp	Gly	Leu	Ser	Phe
Thr	Glu	Phe 180	Thr	Tyr	Gln	Leu	Leu 185	Gln	Gly	Tyr	Asp	Phe	Leu	His	Leu
Tyr	Glu	Thr 195	Lys	Gly	Cys	Lys	Leu 200	Gln	Met	Gly	Gly 205	Ser	Asp	Gln	Trp
Gly	Asn 210	Ile	Thr	Thr 215	Gly	Thr	Glu	Leu	Ile	Arg	Arg 220	Thr	Asn	Gly	Gly
Glu 225	Ala	Tyr	Ala	Leu 230	Thr	Cys	Pro	Leu	Ile	Thr 235	Lys	Ala	Asp	Gly	Gly
Lys	Phe	Gly	Lys 245	Thr	Glu	Ser	Gly	Asn 250	Ile	Trp	Leu	Asp	Pro	Arg	Tyr
Thr	Ser	Pro 260	Tyr	Lys	Phe	Tyr	Gln	Phe 265	Trp	Leu	Asn	Val	Ser	Asp	Ala
Asp	Ala	Glu 275	Arg	Tyr	Ile	Lys	Ile 280	Phe	Thr	Ser	Leu	Asp	Lys	Ala	Glu
Ile	Asp 290	Gly	Leu	Val	Ala	Glu	His 295	Asn	Glu	Ala	Pro 300	His	Leu	Arg	Val
Leu 305	Gln	Lys	Arg	Leu 310	Ala	Lys	Glu	Val	Thr	Val 315	Met	Val	His	Ser	Glu
Glu	Asp	Tyr	Asn 325	Ala	Ala	Val	Asp	Ala 330	Ser	Asn	Ile	Leu	Phe	Gly	Asn
Ala	Thr	Ser 340	Asp	Ala	Leu	Lys	Lys 345	Leu	Asp	Glu	Asp	Thr	Leu	Leu	Ala
Val	Phe 355	Glu	Gly	Val	Pro	Gln	Phe 360	Glu	Ile	Ser	Arg	Asp	Ala	Leu	Val
Glu	Gly 370	Val	Lys	Ala	Val	Asp	Leu 375	Phe	Val	Asp	Asn 380	Ala	Ala	Val	Phe
Ala 385	Ser	Lys	Gly	Glu 390	Met	Arg	Lys	Leu	Val	Gln 395	Gly	Gly	Gly	Val	Ser

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<210> 6331
<211> 298
<212> PRT
<213> B.fragilis
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<210> 6332
<211> 60
<212> PRT
<213> B.fragilis
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1	5	10	15
Leu Ala Glu Ser Tyr Leu Asp Thr Leu Ser Asp Lys Val Arg Phe Gln			
	20	25	30
Gly His Lys Ser Ile Lys Leu Lys Gly Lys Pro His Lys Tyr Tyr Arg			
	35	40	45
Lys Lys Ala Leu Thr Thr Cys Lys Thr Ser Ile Phe			
	50	55	60

<210> 6333

<211> 89

<212> PRT

<213> B.fragilis

<400> 6333

Ile Met Ser Lys Lys Ile Phe Ala Ala Leu Ile Val Ala Val Val Ala			
1	5	10	15
Thr Phe Ala Gly Tyr Asn Ile Tyr Gln Ser Gln Lys Thr Glu Lys Ile			
	20	25	30
Val Ser Asp Leu Val Ile Ala Asn Val Glu Ala Leu Ala Gly Asp Thr			
	35	40	45
Glu Gly Gly Ala Thr Ile Thr Cys Ser Arg Thr Cys Ser Asp Gly Val			
	50	55	60
Gly Arg Cys Tyr Lys Val Tyr Asp Lys Trp Gly Asn Cys His Phe Asp			
65	70	75	80
Gly Ser Gln Thr Tyr Ser Cys Thr Cys			
	85		

<210> 6334

<211> 676

<212> PRT

<213> B.fragilis

<400> 6334

Leu Leu Ile Lys Gly Ser Val Met Leu Arg Gly Glu Lys Ser Tyr Met			
1	5	10	15
Asn Met Lys Ile Met Lys Tyr Ile Gly Leu Gly Leu Leu Leu Val			
	20	25	30
Cys Ser Cys Gly Gly Arg Asp Arg Gln Val Glu Glu Ala Leu Ser Leu			
	35	40	45
Ser Gly Asn Asn Arg Asn Glu Leu Glu Ala Val Leu Lys His Tyr Glu			
	50	55	60
Gly Asp Gly Arg Lys Leu Glu Ala Ala Arg Phe Leu Ile Gly Asn Met			
65	70	75	80
Pro Gly Ser Tyr Gly Ala Asn Pro Ile Val Glu Gln Asp Cys Ser Ala			
	85	90	95
Phe Tyr Glu Ala Tyr Asp Ser Leu Gly Gln Lys Tyr Asp Tyr Arg Val			
	100	105	110
Gly Thr Glu Trp Gly Lys Gln Val Asp Ser Leu Trp Lys Asp Phe Ser			
	115	120	125
Asn Arg His Arg Val Arg Gln Glu Leu Asn Tyr Asp Ile Thr Arg Met			
	130	135	140
Lys Ala Glu Asp Leu Ile Arg Glu Ile Asp Leu Ala Phe Arg Ala Trp			
145	150	155	160
Val Glu Asn Val His Ser Arg Asn Cys Ser Phe Glu Asp Phe Cys Glu			
	165	170	175
Tyr Ile Leu Pro Tyr Arg Arg Gln Asn Gly Leu Leu Ile Asp Asn Ala			
	180	185	190
Arg Arg Glu Phe Asn Lys Arg His Gln Gly Lys Tyr Phe Val Lys Glu			
	195	200	205

Gly Lys Asp Trp Gln Gln Glu Ile Asp Ser Leu Leu Tyr Glu Tyr Lys
 210 215 220
 Tyr Leu Thr His Ser Gly Phe Trp Gly Thr Lys Ile Pro Ile Trp Asn
 225 230 235 240
 Ala Val Thr Leu Glu Lys Met Arg His Gly Leu Cys Ala Gln Arg Cys
 245 250 255
 Trp Tyr Asn Ser Leu Leu Leu Ser Ser Leu Gly Ile Pro Val Ala Ile
 260 265 270
 Asp Phe Val Pro Ala Trp Gly Asn Arg Asn Asn Ser His Thr Trp Asn
 275 280 285
 Val Val Leu Ile Asn Gly Glu Ser His Ala Phe Glu Ala Phe Trp Asp
 290 295 300
 Asn Asp Arg Trp Lys Tyr Lys Arg Ile Tyr Asn Asn Arg Asp Asp Asp
 305 310 315 320
 Glu Leu Trp Gly Arg Phe Arg Leu Pro Lys Val Tyr Arg Tyr Thr Tyr
 325 330 335
 Ser Asn His Ile Glu Gly Pro Leu Ala Asp Val Glu Val Asp Lys Ala
 340 345 350
 Asp Ile Pro Glu Leu Phe Arg Ser Val Lys Lys Val Asp Val Ser Ser
 355 360 365
 Glu Tyr Phe Glu Thr Ala Asp Val Thr Val Glu Leu Thr Gly Glu Ala
 370 375 380
 Pro Gln Gly Val Lys Tyr Ala Tyr Leu Ala Val Phe Gly Tyr Gln Asp
 385 390 395 400
 Trp His Pro Val Gln Trp Ala Lys Ile Glu Asn Gly Arg Ala Val Phe
 405 410 415
 Arg Glu Met Gly Lys Asp Met Val Tyr Leu Pro Val Tyr Tyr Lys Arg
 420 425 430
 Gly Gly Leu Leu Pro Ala Ala Glu Pro Phe Arg Leu Arg Asn Asp Gly
 435 440 445
 Thr Met Glu Lys Leu Ser Gly Asn Glu Gly Thr Glu Glu Val Ala Val
 450 455 460
 Arg Met Val Thr Gly Ala Pro Ala Tyr Asp Gln Asn Arg Glu Tyr Leu
 465 470 475 480
 Gly Cys Met Lys Gly Ser Arg Ile Val Gly Leu Leu Asp Gly Lys Ser
 485 490 495
 Glu Glu Glu Leu Cys Arg Trp Thr Asp Ser Leu Ala Leu Gln Ser Val
 500 505 510
 Val Arg Lys Val Ser Ala Arg Leu Pro Tyr Arg Phe Val Arg Leu Leu
 515 520 525
 Leu Pro Ser Asp Ser Ile Ala Leu Gly Glu Leu Ser Phe Tyr Thr Glu
 530 535 540
 Glu Gly Arg Ile Gly Asn Met Arg Ile Ile Thr Pro Met Arg Ala Thr
 545 550 555 560
 Gly Arg Asn Glu Val Pro Gly Met Ile Thr Asp Gly Leu Gly Ala Thr
 565 570 575
 Gly Tyr Arg Gly Arg Val Ala Glu Arg Leu Val Asp Ile Asp Leu Gly
 580 585 590
 Lys Glu Tyr Met Val Ser His Ile Gly Met Thr Ser Tyr Leu Lys Thr
 595 600 605
 Gln Leu Phe Cys Pro Asp Glu Phe Glu Leu Arg Tyr Trp Asp Asn Gly
 610 615 620
 Trp Lys Thr Val Glu Arg Lys Gln Ala Asp His Lys Gly Tyr Leu Val
 625 630 635 640
 Phe Glu Arg Val Pro Arg Gly Ala Leu Leu Met Leu Lys Asn Cys Arg
 645 650 655
 Trp Lys Gly Lys Thr Ala Glu Arg Ile Phe Thr Tyr Glu Lys Gly Asp
 660 665 670
 Val Lys Trp Glu

675

<210> 6335
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 6335
 Val Phe Lys Asn Ile Ile Ser Met Val Asn Phe Ser Leu Glu Gly Lys
 1 5 10 15
 Val Ala Trp Val Thr Gly Ala Ser Tyr Gly Ile Gly Phe Ala Leu Ala
 20 25 30
 Thr Ala Phe Ser Glu Ala Gly Ala Lys Ile Val Phe Asn Asp Ile Ser
 35 40 45
 Arg Glu Leu Val Asp Lys Gly Leu Ala Ala Tyr Lys Glu Leu Gly Ile
 50 55 60
 Glu Ala Arg Gly Tyr Val Cys Asp Val Thr Ser Glu Glu Gln Val Asn
 65 70 75 80
 Ala Leu Val Ala Gln Ile Leu Phe Thr Ala Gly Leu Gln
 85 90

<210> 6336
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 6336
 Asn Arg Met Glu Trp Phe Glu Ala Leu Ile Leu Gly Leu Ile Gln Gly
 1 5 10 15
 Leu Thr Glu Tyr Leu Pro Val Ser Ser Ser Gly His Leu Ala Ile Gly
 20 25 30
 Ser Ala Leu Phe Gly Ile Glu Gly Glu Glu Asn Leu Ala Phe Thr Ile
 35 40 45
 Val Val His Val Ala Thr Val Phe Ser Thr Leu Val Ile Leu Trp Lys
 50 55 60
 Glu Ile Asp Trp Ile Phe Arg Gly Leu Phe Lys Phe Glu Met Asn Ser
 65 70 75 80
 Glu Thr Arg Tyr Val Ile Asn Ile Leu Ile Ser Met Ile Pro Ile Gly
 85 90 95
 Ile Val Gly Val Phe Phe Lys Asp Glu Val Glu Ala Ile Phe Gly Ser
 100 105 110
 Gly Leu Leu Ile Val Gly Cys Met Leu Leu Leu Thr Ala Ala Leu Leu
 115 120 125
 Ser Phe Ser Tyr Tyr Ala Lys Pro Arg Gln Lys Glu Asn Ile Ser Met
 130 135 140
 Lys Asp Ala Phe Ile Ile Gly Leu Ala Gln Ala Cys Ala Val Leu Pro
 145 150 155 160
 Gly Leu Ser Arg Ser Gly Ser Thr Ile Ala Thr Gly Leu Leu Leu Gly
 165 170 175
 Asp Asn Lys Ala Lys Leu Ala Gln Phe Ser Phe Leu Met Val Met Pro
 180 185 190
 Pro Ile Leu Gly Glu Ala Leu Leu Asp Gly Met Lys Met Ile Lys Gly
 195 200 205
 Glu Ala Ile Ala Gly Asp Ile Pro Thr Leu Ser Leu Ile Val Gly Phe
 210 215 220
 Ile Ala Ala Phe Val Ser Gly Cys Leu Ala Cys Lys Trp Met Ile Asn
 225 230 235 240
 Ile Val Lys Lys Gly Lys Leu Ile Tyr Phe Ala Ile Tyr Cys Ala Ile
 245 250 255

Val Gly Val Val Thr Ile Val Val Ser Gln Leu Gln
 260 265

<210> 6337
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 6337
 Ile Ile Phe Trp Ile Tyr Cys Tyr Phe Cys Phe Val Leu Thr Asp Tyr
 1 5 10 15
 Leu Met Lys Asn Lys Leu Lys Thr Ala Phe Thr Leu Leu Val Tyr Ile
 20 25 30
 Ala Val Thr Val Gly Ile Tyr Ala Leu Ile Cys His Leu Asn His Gln
 35 40 45
 Pro Phe Asp Asp Leu Arg Ile Leu Tyr Ala Val Leu Ile Gly Cys Val
 50 55 60
 Ala Tyr Leu Pro Arg His Leu Met Val Arg Lys Ser Arg Lys Ser Gln
 65 70 75 80
 Lys

<210> 6338
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 6338
 Gly Glu Cys Cys Gln Leu Ser Tyr Leu Ser Leu Ile Val Ala Val Val
 1 5 10 15
 Ala Thr Phe Ala Gly Tyr Asn Ile Tyr Gln Ser Gln Arg Val Glu Ser
 20 25 30
 Ile Met Ser Asp Leu Thr Met Ala Asn Val Glu Ala Leu Ala Gly Ser
 35 40 45
 Glu Ile Asn Asp Glu Asp Cys Val Ser Ala Ser Asn Arg Tyr Cys Ser
 50 55 60
 Val Leu Ile Val Thr Pro Asn Gly Asn Tyr Leu Glu Thr Tyr Phe Asp
 65 70 75 80
 Gln Lys Thr Lys Tyr
 85

<210> 6339
 <211> 527
 <212> PRT
 <213> B.fragilis

<400> 6339
 Ser Met Lys Arg Arg Asp Phe Leu Lys Cys Ser Leu Ala Val Gly Ala
 1 5 10 15
 Gly Leu Ala Ala Ser Pro Ser Thr Tyr Ala Phe Asn Gly Glu Ser Lys
 20 25 30
 Glu Thr Gly Asn Asp Ser Ser Lys Leu Ser Lys Ala Pro Ala Thr Lys
 35 40 45
 Gly Gly Lys Pro His Ile Ile Phe Ile Met Ser Asp Gln His Arg Gly
 50 55 60
 Asp Ala Leu His Cys Met Gly Asn Lys Ala Val Ile Ser Pro Asn Ile
 65 70 75 80
 Asp Lys Leu Ala Gln Glu Gly Ser Leu Phe Val Cys Gly Tyr Ser Ser
 85 90 95

Ala Pro Ser Ser Thr Pro Ala Arg Ala Gly Leu Leu Thr Gly Met Ser
 100 105 110
 Pro Trp His His Gly Met Leu Gly Tyr Gly Lys Val Ala Ser Lys Tyr
 115 120 125
 Lys Tyr Glu Met Pro Gln Met Leu Arg Asp Leu Gly Tyr Tyr Thr Phe
 130 135 140
 Gly Ile Gly Lys Met His Trp Phe Pro Gln Lys Ala Leu His Gly Phe
 145 150 155 160
 His Ala Thr Leu Val Asp Glu Ser Gly Arg Ser Glu Thr Arg Asp Phe
 165 170 175
 Ile Ser Asp Tyr Arg Glu Trp Phe Gln Leu Gln Ala Pro Gly Lys Asn
 180 185 190
 Pro Asp Leu Thr Gly Ile Gly Trp Asn Asn His Asn Ala Gly Thr Tyr
 195 200 205
 Lys Leu Glu Glu Arg Leu His Pro Thr Ala Trp Thr Gly Gln Thr Ala
 210 215 220
 Cys Glu Leu Ile Arg Asn Tyr Asp Ser Asp Gln Pro Leu Phe Leu Lys
 225 230 235 240
 Val Ser Phe Ala Arg Pro His Ser Pro Tyr Asp Pro Pro Lys Arg Tyr
 245 250 255
 Leu Asp Met Tyr Glu Lys Val Asp Ile Pro Val Pro Phe Val Gly Asp
 260 265 270
 Trp Cys Gly Lys Tyr Ala Glu Arg Lys Asp Pro Glu Arg Val Ser Lys
 275 280 285
 Asp Ala Ala Phe Ala Asn Leu Gly Glu Glu Tyr Ala Val Asn Ser Arg
 290 295 300
 Arg His Tyr Tyr Ala Asn Val Thr Phe Ile Asp Asp Gln Ile Gly Gln
 305 310 315 320
 Ile Ile Gln Ile Leu Lys Glu Lys Gly Met Tyr Glu Asn Ala Ile Ile
 325 330 335
 Cys Tyr Thr Ala Asp His Gly Asp Met Leu Gly Asp His Tyr His Trp
 340 345 350
 Arg Lys Thr Tyr Ala Tyr Glu Gly Ser Ala Lys Ile Pro Tyr Ile Ile
 355 360 365
 Lys Trp Pro Ser Ala Met Thr Thr Gln Ala Ile Arg Gly Lys Arg Ile
 370 375 380
 Glu Gln Pro Val Glu Leu Arg Asp Phe Leu Pro Thr Phe Ile Glu Leu
 385 390 395 400
 Ala Gly Gly Thr Val Pro Asp Asp Met Asp Gly Lys Ser Leu Val Ala
 405 410 415
 Leu Ala Ser Gly Asn Lys Asn Gly Trp Arg Lys Tyr Ile Asp Leu Glu
 420 425 430
 His Ala Thr Cys Tyr Ser Ala Asp Asn Tyr Trp Cys Ala Leu Thr Asp
 435 440 445
 Gly Lys Met Lys Tyr Ile Trp Phe Ile His Thr Gly Glu Glu Gln Leu
 450 455 460
 Phe Asp Leu Ser Ser Asp Pro Gly Glu Gln Lys Asn Leu Ser Gly Asn
 465 470 475 480
 Ser Arg Tyr Ala Asp Arg Leu Val Glu Met Arg Lys Ala Met Val Asp
 485 490 495
 His Leu Gln Glu Arg Gly Thr Glu Phe Val Lys Asp Gly Lys Leu Ala
 500 505 510
 Val Arg Asp Gln Thr Leu Leu Tyr Ser Pro Asn Tyr Pro Lys Asp
 515 520 525

<210> 6340
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 6340

Asn	Asp	Arg	Ser	His	Thr	Leu	Gln	Arg	Leu	His	Lys	Tyr	Gly	Arg	Val
1				5					10					15	
Thr	Gln	His	Gln	Ala	Leu	Glu	Pro	Pro	Asp	Asn	Gln	Trp	Thr	Gly	Met
			20					25					30		
Gln	Ala	Lys	Ser	Gln	Lys	Asp	Ala	Phe	Val	His	Leu	Tyr	Ile	Tyr	Val
		35					40					45			
Asn	Thr	Leu	Leu	Arg	Lys	Ser	Ser	Asn	Tyr	Lys	Lys	Asp	Asn	Pro	Leu
	50					55					60				
Thr	Trp	Trp	Lys	Val	Asp	Trp	Gln	Leu	Ser	Arg	Thr	Val	Asn	Asn	Ser
65					70					75					80
Pro	Gly	Tyr	Cys	Thr	Tyr	Gln	Arg	Ile	Leu						
				85					90						

<210> 6341

<211> 692

<212> PRT

<213> B.fragilis

<400> 6341

Arg	Pro	Cys	Gly	Ser	Phe	Gln	Pro	Arg	Gly	Glu	Asp	Gln	Val	Thr	Ala
1				5					10					15	
Phe	Asn	Thr	Gly	Trp	Gln	Phe	Lys	Lys	Gly	Pro	Phe	Ala	Thr	Asp	Pro
			20					25					30		
Met	Arg	Ala	Ala	Ser	Gln	Trp	Asp	Gly	Lys	Trp	Glu	Thr	Val	Glu	Ile
		35					40					45			
Pro	His	Thr	Trp	Asn	Ala	Met	Asp	Met	Gln	Val	Gln	Ser	Gly	Ser	Phe
	50					55					60				
Tyr	Glu	Gly	Ala	Gly	Tyr	Tyr	Arg	Lys	Thr	Gln	Phe	Phe	Pro	His	Asp
65					70					75					80
Leu	Glu	Gly	Lys	Arg	Val	Phe	Leu	Arg	Phe	Glu	Gly	Val	Gly	Ala	Cys
				85					90					95	
Ala	Glu	Val	Tyr	Val	Asn	Gly	Lys	Leu	Ala	Gly	Thr	His	Lys	Gly	Gly
			100					105					110		
Tyr	Ser	Ala	Phe	Ala	Cys	Glu	Ile	Gly	Thr	Ala	Leu	Lys	Leu	Gly	Ala
		115					120						125		
Glu	Asn	Glu	Ile	Ile	Val	Lys	Ala	Asp	Asn	Lys	Ala	Arg	Pro	Asp	Val
	130					135					140				
Ile	Pro	Val	Asn	Gln	Asn	Leu	Phe	Gly	Val	Tyr	Gly	Gly	Ile	Tyr	Arg
145					150					155					160
Pro	Val	Trp	Leu	Ile	Val	Thr	Glu	Gln	Asn	Asn	Ile	Thr	Val	Thr	Asp
				165					170					175	
Cys	Ala	Ser	Pro	Gly	Val	Tyr	Ile	Thr	Gln	Lys	Asp	Val	Ser	Lys	Lys
			180					185					190		
Ser	Ala	Asp	Ile	Thr	Val	Lys	Val	Lys	Leu	Asp	Asn	Ala	Gly	Leu	Gln
		195					200					205			
Pro	Ala	Ala	Val	Thr	Leu	Glu	Asn	Thr	Ile	Tyr	Thr	Gln	Glu	Gly	Arg
	210					215					220				
Lys	Val	Gly	Thr	His	Ser	Arg	Ser	Phe	Asp	Leu	Ser	Pro	Gln	Gly	Thr
225					230					235					240
Gln	Thr	Tyr	Leu	Ser	Thr	Phe	Lys	Leu	Lys	Asn	Pro	His	Leu	Trp	Gln
			245						250					255	
Gly	Arg	Lys	Asp	Pro	Tyr	Leu	Tyr	Lys	Val	Val	Cys	Arg	Leu	Met	Ala
			260					265					270		
Asp	Gly	Lys	Val	Ile	Asp	Glu	Val	Val	Gln	Pro	Leu	Gly	Val	Arg	Lys
		275					280					285			
Tyr	Glu	Ile	Val	Ala	Gly	Lys	Gly	Phe	Phe	Leu	Asn	Gly	Glu	Lys	Tyr
	290					295					300				

Pro Met Tyr Gly Val Thr Arg His Gln Asp Trp Trp Gly Leu Gly Ser
 305 310 315 320
 Ala Leu Lys Asn Glu His His Asp Phe Asp Leu Ala Ala Ile Met Asp
 325 330 335
 Val Gly Ala Thr Thr Val Arg Phe Ala His Tyr Gln Gln Ser Asp Tyr
 340 345 350
 Leu Tyr Ser Arg Cys Asp Thr Leu Gly Leu Ile Ile Trp Ala Glu Ile
 355 360 365
 Pro Cys Val Asn Arg Val Thr Gly Tyr Glu Thr Glu Asn Ala Gln Ser
 370 375 380
 Gln Leu Arg Glu Leu Ile Arg Gln Ser Phe Asn His Pro Ser Ile Tyr
 385 390 395 400
 Val Trp Gly Leu His Asn Glu Val Tyr Gln Pro His Glu Tyr Thr Ala
 405 410 415
 Ala Leu Thr Arg Ser Leu His Asp Leu Ala Lys Thr Glu Asp Pro Asp
 420 425 430
 Arg Tyr Thr Val Ser Val Asn Gly Tyr Gly His Met Asp His Pro Val
 435 440 445
 Asn Leu Asn Ala Asp Ile Gln Gly Met Asn Arg Tyr Phe Gly Trp Tyr
 450 455 460
 Glu Lys Lys Ile Gln Asp Ile Lys Pro Trp Val Glu Gln Leu Glu Lys
 465 470 475 480
 Asp Tyr Pro Tyr Gln Lys Leu Met Leu Thr Glu Tyr Gly Ala Asp Ala
 485 490 495
 Asn Leu Ala His Gln Thr Glu Tyr Leu Gly Asp Ala Leu Asn Trp Gly
 500 505 510
 Lys Pro Phe Tyr Pro Glu Thr Phe Gln Thr Lys Thr His Glu Tyr Gln
 515 520 525
 Trp Ser Ile Ile Lys Asp His Pro Tyr Ile Ile Ala Ser Tyr Leu Trp
 530 535 540
 Asn Met Phe Asp Phe Ala Val Pro Met Trp Thr Arg Gly Gly Val Pro
 545 550 555 560
 Ala Arg Asn Met Lys Gly Leu Ile Thr Phe Asp Arg Lys Thr Lys Lys
 565 570 575
 Asp Ser Tyr Phe Trp Tyr Lys Ala Asn Trp Ser Glu Glu Pro Val Leu
 580 585 590
 Tyr Leu Thr Gln Arg Arg Asn Ala Asp Arg Glu Lys Arg Thr Thr Ala
 595 600 605
 Val Thr Val Tyr Ser Asn Ile Gly Ile Pro Lys Val Tyr Leu Asn Gly
 610 615 620
 Gln Glu Leu Ser Gly Ile Arg Asn Gly Tyr Thr Asp Val His Tyr Val
 625 630 635 640
 Phe Asp Asn Val Ser Leu Ala Asp Gly Lys Asn Ile Leu Lys Ala Val
 645 650 655
 Val Ser Thr Lys Gly Lys Glu Tyr Thr Asp Glu Ile Glu Trp Asn Tyr
 660 665 670
 Ser Gly Glu Lys Asn Arg Glu Ile Asp Ser Tyr Glu Asn Lys Asn Glu
 675 680 685
 His Ser Gly Phe
 690

<210> 6342

<211> 79

<212> PRT

<213> B.fragilis

<400> 6342

Ile Thr Met Gly Asp Lys Gln Lys Phe Ala Phe Asp Lys Thr Asn Phe
 1 5 10 15

Ile Leu Leu Ala Ile Gly Met Ala Val Val Ile Leu Gly Phe Ile Leu
 20 25 30
 Met Thr Gly Pro Ser Ser Ser Glu Thr Val Phe Gln Ala Asp Ile Phe
 35 40 45
 Ser Val Arg Arg Ile Lys Val Ala Pro Val Val Cys Phe Leu Gly Phe
 50 55 60
 Ile Phe Met Ile Tyr Gly Val Met Arg Lys Pro Lys Thr Lys Glu
 65 70 75

<210> 6343

<211> 67

<212> PRT

<213> B.fragilis

<400> 6343

Gly Val Thr Gly Leu Leu Asp Met Tyr Ile Phe Cys Phe Ser Asn Phe
 1 5 10 15
 Ser Leu Cys Arg Asp Gly Thr Asp Lys Arg Glu Glu Ala Leu Leu Phe
 20 25 30
 Ser Gly Asn Asn Arg Asp Glu Phe Glu Thr Val Leu Asn Ala Ile Tyr
 35 40 45
 Leu Gly Gly Ile Leu Glu Leu Val Asp Ser Tyr Lys Ser Ser Cys Leu
 50 55 60
 Arg Val Lys
 65

<210> 6344

<211> 354

<212> PRT

<213> B.fragilis

<400> 6344

Phe Ile Ile Met Asn Lys Ile Val Ser Phe Phe Ile Leu Ile Leu Val
 1 5 10 15
 Cys Ser Cys Ser Asp Arg Lys Glu His Ile Ala Asn Ile Leu Ser Met
 20 25 30
 Asn Ser Ile Asp Ile Lys Thr Asn Arg Ile Asn Lys Asp Glu Val Ile
 35 40 45
 Ala Arg Gly Ala Phe Pro Phe Glu Met Ile Asp Ser Leu Phe Phe Leu
 50 55 60
 Phe Asn Gly Asp Pro Ser Ser Gly Ala Leu Val Leu Cys Glu Ser Asn
 65 70 75 80
 Ala Ser Glu Leu Gly His Phe Leu Gln Lys Gly Asn Gly Phe Gly Glu
 85 90 95
 Cys Ile Thr Pro Gly Tyr Ile Gly His Cys Asn Asp Thr Ile Tyr Val
 100 105 110
 Ser Glu Arg Ser Arg Thr Arg Arg Met Thr Tyr Leu Leu Ser Asn His
 115 120 125
 Asn Asp Ser Leu Gln Tyr Lys Cys Leu Glu Asp Val Ser Pro Lys Met
 130 135 140
 Asn Ser Glu Phe Tyr Tyr Gln Ile Cys Arg Leu Gln Ser Gly Leu Phe
 145 150 155 160
 Val Gly Ala Arg Leu Phe Gly Lys Glu His Leu Phe Thr Leu Leu Asp
 165 170 175
 Glu Ser Leu Asp Thr Leu Thr Thr Phe Ala Arg Val Pro Ile Asp Ile
 180 185 190
 Glu Glu Asn Ala Asn Asn Lys Leu Ala Pro Phe Ile Gly His Leu Cys
 195 200 205
 Ile Asp Asp Asn Thr Val Tyr Tyr Ala Ser Asn Asp Phe Ser Tyr Met

210	215	220
Ala Ala Tyr Asp Ile	Leu Ser Glu Lys Glu Ile	Lys Pro Val Phe Glu
225	230	235
Arg Met Tyr Ile Ser	Pro Ile Ile Gln Lys Ser	Ala Asn Gly Ile Ser
245	250	255
Leu Asp Lys Tyr Lys	His Leu Leu Gly Phe Gly	Asp Ile Arg Val Tyr
260	265	270
Gln Asn Tyr Ile Phe	Ala Thr Tyr Ile Gly Lys	Pro Asp Ile Thr Met
275	280	285
Asp Gln Glu Asn Asp	Ile Ser Ala Leu Val Pro	Thr His Leu Leu Val
290	295	300
Phe Asn Lys Asp Gly	Val Pro Ile Val Lys Phe	Lys Phe Pro Phe Lys
305	310	315
Ile Arg Ser Phe Val	Phe Thr Lys Ser Lys Met	Tyr Leu Leu Asp Val
325	330	335
Asp Cys Asn Ile Glu	Ser Val Asp Leu Val Glu	Leu Trp Lys His Leu
340	345	350
Pro Asp		

<210> 6345

<211> 357

<212> PRT

<213> B.fragilis

<400> 6345

Thr His Ile Ile Ile	Met Lys Leu Ser Gln	Phe Lys Phe Lys	Leu Pro
1	5	10	15
Glu Glu Lys Ile Ala	Leu His Pro Thr	Lys Tyr Arg Asp	Glu Ser Arg
20	25	30	
Leu Met Val Leu His	Lys Arg Thr Gly	Glu Ile Glu His	Lys Met Phe
35	40	45	
Lys Asp Ile Leu Asn	Tyr Phe Asp Asp	Lys Asp Val Phe	Val Phe Asn
50	55	60	
Asp Thr Lys Val Phe	Pro Ala Arg Leu	Tyr Gly Asn Lys	Glu Lys Thr
65	70	75	80
Gly Ala Arg Ile Glu	Val Phe Leu Leu	Arg Glu Leu Asn	Glu Glu Leu
85	90	95	
Arg Leu Trp Asp Val	Leu Val Asp Pro	Ala Arg Lys Ile	Arg Ile Gly
100	105	110	
Asn Lys Leu Tyr Phe	Gly Asp Asp Asp	Ser Met Val Ala	Glu Val Ile
115	120	125	
Asp Asn Thr Thr Ser	Arg Gly Arg Thr	Leu Arg Phe Leu	Tyr Asp Gly
130	135	140	
Pro His Asp Glu Phe	Lys Lys Ala Leu	Tyr Ala Leu Gly	Glu Thr Pro
145	150	155	160
Leu Pro His Thr Ile	Leu Asn Arg Pro	Val Glu Glu Glu	Asp Ala Glu
165	170	175	
Arg Phe Gln Ser Ile	Phe Ala Lys Asn	Glu Gly Ala Val	Thr Ala Pro
180	185	190	
Thr Ala Ser Leu His	Phe Ser Arg Glu	Leu Met Lys Arg	Met Glu Ile
195	200	205	
Lys Gly Ile Asp Phe	Ala Tyr Ile Thr	Leu His Ala Gly	Leu Gly Asn
210	215	220	
Phe Arg Asp Ile Asp	Val Glu Asp Leu	Thr Lys His Lys	Met Asp Ser
225	230	235	240
Glu Gln Met Phe Val	Thr Glu Glu Ala	Val Lys Ile Val	Asn Arg Ala
245	250	255	
Lys Asp Leu Gly Lys	Asn Val Cys Ala	Val Gly Thr Thr	Val Met Arg

	260		265		270										
Ala	Ile	Glu	Ser	Thr	Val	Ser	Thr	Asp	Gly	His	Leu	Lys	Glu	Tyr	Glu
	275						280					285			
Gly	Trp	Thr	Asn	Lys	Phe	Ile	Phe	Pro	Pro	Tyr	Asp	Phe	Thr	Val	Ala
	290						295					300			
Asn	Ala	Met	Val	Ser	Asn	Phe	His	Met	Pro	Leu	Ser	Thr	Leu	Leu	Met
305					310					315					320
Ile	Val	Ala	Ala	Phe	Gly	Gly	Tyr	Asp	Gln	Val	Met	Asp	Ala	Tyr	His
			325						330					335	
Ile	Ala	Leu	Lys	Glu	Gly	Tyr	Arg	Phe	Gly	Thr	Tyr	Gly	Asp	Ala	Met
			340					345					350		
Leu	Ile	Leu	Asp	Lys											
	355														

<210> 6346

<211> 283

<212> PRT

<213> B.fragilis

<400> 6346

Ile	Arg	Asn	Met	Lys	Thr	Asn	Tyr	Glu	Ile	Arg	Tyr	Ala	Ala	His	Pro
1			5					10						15	
Glu	Asp	Ala	Arg	Ser	Tyr	Asp	Thr	Lys	Arg	Ile	Arg	Arg	Asp	Phe	Leu
		20						25					30		
Ile	Glu	Lys	Val	Phe	Ser	Ala	Asp	Glu	Val	Asn	Met	Val	Tyr	Ser	Met
		35					40					45			
Tyr	Asp	Arg	Met	Val	Val	Gly	Gly	Ala	Met	Pro	Val	Lys	Glu	Val	Leu
	50					55				60					
Lys	Leu	Glu	Ala	Ile	Asp	Pro	Leu	Lys	Ala	Pro	Tyr	Phe	Leu	Thr	Arg
65				70					75					80	
Arg	Glu	Met	Gly	Ile	Phe	Asn	Val	Gly	Gly	Ser	Gly	Ile	Val	Arg	Ala
				85					90					95	
Gly	Asp	Ala	Ile	Phe	Gln	Leu	Asp	Tyr	Lys	Glu	Ala	Leu	Tyr	Leu	Gly
		100						105					110		
Ala	Gly	Asp	Arg	Asp	Val	Thr	Phe	Glu	Ser	Thr	Asp	Ala	Ala	His	Pro
		115					120					125			
Ala	Lys	Phe	Tyr	Phe	Asn	Ser	Leu	Ala	Ala	His	Arg	Asn	Tyr	Pro	Asp
	130				135						140				
Lys	Lys	Val	Thr	Lys	Ala	Asp	Ala	Val	Val	Ala	Glu	Met	Gly	Thr	Leu
145				150						155					160
Glu	Gly	Ser	Asn	His	Arg	Asn	Ile	Asn	Lys	Met	Leu	Val	Asn	Gln	Val
			165						170					175	
Leu	Pro	Thr	Cys	Gln	Leu	Gln	Met	Gly	Met	Thr	Glu	Leu	Ala	Pro	Gly
		180						185					190		
Ser	Val	Trp	Asn	Thr	Met	Pro	Ala	His	Val	His	Ser	Arg	Arg	Met	Glu
	195					200						205			
Ala	Tyr	Phe	Tyr	Phe	Glu	Val	Pro	Glu	Glu	His	Ala	Val	Cys	His	Phe
	210				215						220				
Met	Gly	Glu	Val	Asp	Glu	Thr	Arg	His	Val	Trp	Met	Lys	Gly	Asp	Gln
225				230					235						240
Ala	Val	Leu	Ser	Pro	Glu	Trp	Ser	Ile	His	Ser	Ala	Ala	Ala	Thr	His
			245						250					255	
Asn	Tyr	Thr	Phe	Ile	Trp	Gly	Met	Gly	Gly	Glu	Asn	Leu	Asp	Tyr	Gly
		260						265					270		
Asp	Gln	Asp	Phe	Ser	Leu	Ile	Thr	Asp	Leu	Lys					
	275						280								

<210> 6347

<211> 212

<212> PRT

<213> B.fragilis

<400> 6347

Ser Met Asp Ile Leu Asp Ile His Thr His Arg Met Pro Val Glu Leu
 1 5 10 15
 Gly Gln Ala Ile Gln Asn Cys Gln Pro Ala Glu Phe Asp Pro Leu Ala
 20 25 30
 Gly Ala Tyr Tyr Ser Val Gly Ile His Pro Trp Tyr Leu Thr Arg Glu
 35 40 45
 Asn Leu Asp Arg Gln Trp Glu Met Leu Leu Ala Ala Ile Gln Cys Pro
 50 55 60
 Gln Val Leu Ala Ile Gly Glu Ala Gly Leu Asp Lys Leu Val Arg Thr
 65 70 75 80
 Asp Tyr Met Leu Gln Gln Glu Val Phe Glu Lys Gln Ala Met Leu Ala
 85 90 95
 His Glu Met Lys Tyr Pro Leu Val Ile His Ala Val Arg Ser Ala Asn
 100 105 110
 Glu Ile Ile Cys Leu Arg Lys Lys Met Lys Pro Ser Asn Pro Trp Ile
 115 120 125
 Ile His Gly Phe Arg Gly Lys Lys Glu Leu Ala Leu Gln Tyr Ile Arg
 130 135 140
 Glu Gly Ile Tyr Val Ser Leu Gly Glu Lys Tyr Gln Glu Glu Val Leu
 145 150 155 160
 Trp Gly Ile Pro Leu Glu Tyr Leu Phe Leu Glu Thr Asp Glu Ser Met
 165 170 175
 Ile Asp Ile His Cys Leu Tyr Glu Arg Ala Ala Leu Leu Leu Glu Ile
 180 185 190
 Pro Leu Cys Lys Leu Met Gln Gln Val Arg Gln Asn Ile Asn Asn Val
 195 200 205
 Phe Phe Arg Gln
 210

<210> 6348

<211> 76

<212> PRT

<213> B.fragilis

<400> 6348

Glu Thr Gly Met Lys Gly Leu Leu Ser Tyr Ile Leu Leu Leu Pro Ile
 1 5 10 15
 Tyr Phe Tyr Arg Ala Cys Ile Ser Pro Met Thr Pro Pro Ser Cys Arg
 20 25 30
 Phe Thr Pro Thr Cys Ser Gln Tyr Ala Ile Glu Ala Ile Lys Lys His
 35 40 45
 Gly Pro Phe Lys Gly Leu Tyr Leu Ala Val Arg Arg Ile Leu Arg Cys
 50 55 60
 His Pro Trp Gly Gly Ser Gly Tyr Asp Pro Val Pro
 65 70 75

<210> 6349

<211> 201

<212> PRT

<213> B.fragilis

<400> 6349

Thr Lys Pro Met Gln Glu Met Asn Gln Ile Thr Ser Val Cys Val Tyr
 1 5 10 15
 Cys Ala Ser Ser Thr Lys Ile Asp Gln Thr Tyr Phe Asp Ala Ala Ile

	20		25		30										
Lys	Leu	Gly	His	Leu	Leu	Ala	Asn	Arg	His	Ile	Arg	Leu	Ile	Asn	Gly
	35						40					45			
Ala	Gly	Asn	Ile	Gly	Leu	Met	Arg	Ser	Val	Ala	Asp	Ala	Val	Leu	Gln
	50					55					60				
Asn	Gly	Gly	Glu	Val	Thr	Gly	Val	Ile	Pro	His	Phe	Met	Val	Asp	Gln
65					70					75				80	
Gly	Trp	His	His	Thr	Gly	Leu	Thr	Glu	Leu	Ile	Glu	Val	Glu	Ser	Met
			85						90					95	
His	Glu	Arg	Lys	Arg	Leu	Met	Ala	Glu	Lys	Ser	Asp	Ala	Val	Ile	Ala
		100						105					110		
Leu	Pro	Gly	Gly	Cys	Gly	Thr	Leu	Glu	Glu	Leu	Leu	Glu	Ile	Ile	Thr
	115						120					125			
Trp	Lys	Gln	Leu	Gly	Leu	Tyr	Leu	Asn	Pro	Ile	Val	Ile	Leu	Asn	Thr
	130					135					140				
Asn	Gly	Phe	Phe	Asp	Pro	Leu	Leu	Glu	Met	Leu	Glu	Asn	Ala	Ile	Glu
145					150					155				160	
Gly	Asn	Phe	Met	Arg	Lys	Gln	His	Gly	Asp	Ile	Trp	His	Val	Ala	His
			165					170						175	
Thr	Pro	Glu	Glu	Ala	Val	Glu	Leu	Val	Tyr	Ser	Ile	Pro	Val	Trp	Asp
		180						185					190		
Gly	Ser	Ile	Arg	Lys	Phe	Ala	Ala	Ile							
	195						200								

<210> 6350

<211> 375

<212> PRT

<213> B.fragilis

<400> 6350

Thr	Asp	Phe	Leu	Val	Arg	Val	Leu	Arg	Val	Cys	Leu	Ile	Tyr	Phe	Lys
1			5					10					15		
Asn	Glu	Ile	Tyr	Val	Ser	Cys	Leu	Lys	Ile	Thr	Lys	Met	Lys	Gln	Lys
		20						25				30			
Tyr	Ile	Leu	Phe	Leu	Ser	Leu	Cys	Phe	Val	Leu	Phe	Ser	Cys	Arg	Lys
	35					40					45				
Asn	Asp	Val	Gly	Ser	Val	Tyr	Ser	Phe	Asp	Thr	Val	Cys	Lys	Ile	Val
	50					55				60					
Asp	Tyr	Asn	Leu	Ile	Cys	Ser	Asp	Glu	Asn	Ala	Pro	Trp	Gly	Ala	Ile
65				70				75					80		
Met	Asn	Met	Glu	Ile	Val	Asp	Ser	Ile	Leu	Ile	Leu	Gln	His	Ala	Met
			85					90					95		
Asp	Glu	Tyr	Ala	Phe	Ser	Phe	Ile	Asn	Val	Asn	Asn	Gly	Glu	Leu	Leu
		100						105				110			
Ser	Gln	Trp	Gly	Arg	Thr	Gly	Glu	Gly	Pro	Glu	Glu	Phe	Ile	Asp	Phe
	115					120						125			
Gly	Ser	Gly	Phe	Glu	Ile	Val	Asp	Ser	Arg	Ile	Val	Phe	Leu	Asp	Arg
	130					135					140				
Met	Lys	Lys	Glu	Arg	Ile	Ser	Val	Leu	Leu	Ser	Asp	Ile	Leu	Ser	Lys
145				150						155				160	
Lys	Glu	His	Pro	Asp	Ile	Thr	Arg	Glu	Ala	Tyr	Pro	Tyr	Asn	Val	Asp
			165					170					175		
Phe	Arg	Val	Leu	Glu	Ile	Asn	Ala	Val	Gly	Asn	Lys	Lys	Ile	Val	Thr
		180						185					190		
Gly	Gly	Phe	Lys	Lys	Gly	Tyr	Trp	Gly	Ala	Leu	Asp	Ser	Gln	Asn	His
	195					200					205				
Ile	Ile	Pro	Asn	Val	Ala	Glu	Leu	Pro	Phe	Asp	Ala	Gly	Glu	Val	Ser
	210					215					220				
Gly	Leu	Glu	Lys	Gly	Ile	Val	Phe	Gly	Gly	Ile	Leu	Lys	Ala	Asn	Ser


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<210> 6351
<211> 1098
<212> PRT
<213> B.fragilis
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<400>	6351															
Ser	Lys	Gln	Ile	Asn	Ser	Val	Ser	Met	Arg	Lys	Leu	Phe	Val	Cys	Ile	
1				5					10					15		
Ala	Leu	Gly	Leu	Thr	Thr	Leu	Thr	Gly	Asn	Ala	Thr	Ser	Pro	Leu	Trp	
			20					25					30			
Met	Arg	Asp	Val	Gln	Ile	Ser	Pro	Asp	Gly	Thr	Glu	Ile	Ala	Phe	Cys	
		35					40					45				
Tyr	Lys	Gly	Asp	Ile	Tyr	Lys	Val	Ser	Ala	Gly	Gly	Gly	Thr	Ala	Ile	
	50					55					60					
Gln	Leu	Thr	Thr	Gln	Pro	Ser	Tyr	Glu	Cys	Thr	Pro	Ile	Trp	Ser	Pro	
65					70					75					80	
Asp	Ser	Lys	Gln	Ile	Ala	Phe	Ala	Ser	Asp	Arg	Asn	Gly	Asn	Phe	Asp	
			85						90				95			
Ile	Phe	Val	Met	Pro	Ala	Thr	Gly	Gly	Thr	Ala	Gln	Arg	Leu	Thr	Thr	
			100					105					110			
His	Ser	Ser	Ser	Glu	Leu	Pro	Ser	Ala	Phe	Thr	Pro	Asp	Gly	Lys	Tyr	
		115					120					125				
Ile	Leu	Phe	Ser	Ala	Ser	Ile	Gln	Asp	Pro	Ser	Gln	Ser	Ala	Leu	Phe	
	130					135					140					
Pro	Thr	Thr	Ala	Met	Thr	Glu	Leu	Tyr	Lys	Val	Pro	Val	Asn	Gly	Gly	
145					150				155						160	
Arg	Thr	Glu	Gln	Val	Leu	Gly	Thr	Pro	Ala	Glu	Ala	Ile	Cys	Tyr	Ala	
			165					170						175		
Pro	Ser	Gly	Glu	Phe	Phe	Leu	Tyr	Gln	Asp	Arg	Lys	Gly	Phe	Glu	Asp	
		180						185					190			
Glu	Trp	Arg	Lys	His	His	Thr	Ser	Ser	Ile	Thr	Arg	Asp	Ile	Trp	Leu	
		195					200					205				
Tyr	Asp	Thr	Lys	Thr	Gly	Lys	His	Thr	Asn	Leu	Thr	Asn	His	Ala	Gly	
	210					215					220					
Glu	Asp	Arg	Asn	Pro	Val	Leu	Ser	Pro	Asp	Gly	Lys	Ser	Val	Tyr	Leu	
225					230					235					240	
Leu	Ser	Glu	Arg	Lys	Gly	Ser	Phe	Asn	Val	Tyr	Ser	Phe	Pro	Leu	Asp	
			245					250						255		
Asn	Ala	Gln	Asp	Leu	Lys	Ala	Val	Thr	Ser	Phe	Lys	Thr	His	Pro	Val	

			260					265					270		
Arg	Phe	Leu	Ser	Met	Ser	His	Gly	Gly	Thr	Leu	Cys	Tyr	Ala	Tyr	Asp
		275					280					285			
Gly	Glu	Ile	Tyr	Thr	Gln	Lys	Asp	Asn	Ala	Thr	Pro	Gln	Lys	Ile	Asn
	290					295					300				
Ile	Asp	Ile	Val	Arg	Asp	Asp	Gln	Asp	Lys	Ile	Ala	Asp	Leu	Thr	Phe
305					310					315					320
Thr	Asn	Gly	Ala	Thr	Ser	Gly	Thr	Val	Ser	Pro	Asp	Gly	Lys	Gln	Ile
				325					330					335	
Ala	Phe	Ile	Val	Arg	Gly	Glu	Val	Phe	Val	Thr	Ser	Thr	Asp	Tyr	Ala
			340					345					350		
Thr	Thr	Lys	Gln	Ile	Thr	His	Thr	Pro	Ala	Arg	Glu	Ala	Gly	Leu	Thr
		355					360					365			
Phe	Ala	Pro	Asp	Asn	Arg	Thr	Leu	Ala	Tyr	Ala	Ser	Glu	Arg	Asn	Gly
	370					375					380				
Asn	Trp	Gln	Leu	Phe	Leu	Ala	Lys	Ile	Ala	Arg	Lys	Glu	Glu	Ala	Asn
385					390					395					400
Phe	Pro	Asn	Ala	Thr	Ile	Ile	Glu	Glu	Glu	Val	Leu	Leu	Pro	Ser	Ala
				405					410					415	
Thr	Val	Glu	Arg	Ala	Tyr	Pro	Gln	Phe	Ser	Pro	Asp	Gly	Lys	Glu	Leu
			420					425					430		
Ala	Phe	Ile	Glu	Glu	Arg	Asn	Arg	Leu	Met	Val	Ile	Asn	Leu	Asp	Thr
		435					440					445			
Lys	Lys	Val	Arg	Gln	Ile	Thr	Asp	Gly	Ser	Thr	Trp	Phe	Ser	Thr	Asp
	450					455					460				
Gly	Asn	Phe	Asp	Tyr	Gln	Trp	Ser	Pro	Asp	Gly	Lys	Trp	Phe	Thr	Leu
465					470					475					480
Glu	Phe	Ile	Gly	Asn	Arg	His	Asp	Pro	Tyr	Ser	Asp	Ile	Gly	Leu	Val
				485					490					495	
Ser	Ala	Lys	Gly	Asp	Ser	Pro	Ile	Thr	Asn	Leu	Thr	Asn	Ser	Gly	Tyr
			500					505					510		
Met	Ser	Gly	Ser	Pro	Arg	Trp	Val	Leu	Asp	Gly	Asn	Ala	Ile	Leu	Phe
		515					520					525			
Thr	Thr	Glu	Arg	Tyr	Gly	Met	Arg	Ala	His	Ala	Ser	Trp	Gly	Ser	Gln
	530					535					540				
Asn	Asp	Ala	Met	Leu	Val	Phe	Leu	Asn	Gln	Asp	Ala	Phe	Asp	Lys	Phe
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Arg	Leu	Ser	Lys	Glu	Asp	Tyr	Glu	Leu	Gln	Lys	Glu	Leu	Glu	Lys	Glu
				565					570					575	
Gln	Gln	Lys	Asp	Lys	Glu	Lys	Ala	Ser	Ile	Asp	Pro	Lys	Lys	Asp	Lys
			580					585					590		
Lys	Lys	Asp	Pro	Gln	Thr	Asp	Thr	Glu	Lys	Lys	Asp	Glu	Ile	Lys	Asn
		595					600					605			
Ile	Leu	Val	Glu	Leu	Asn	Gly									

Tyr Asn Thr Asn Met His Gly Val Asn Trp Asp Thr Met Ser Ala Ala
 740 745 750
 Tyr Arg Lys Phe Leu Pro His Ile Asn Asn Asn Tyr Asp Phe Ala Glu
 755 760 765
 Leu Leu Ser Glu Trp Leu Gly Glu Leu Asn Val Ser His Thr Gly Gly
 770 775 780
 Arg Phe Ser Pro Ser Ile Pro Gly Asp Ala Thr Ala Ser Leu Gly Val
 785 790 795 800
 Leu Thr Asp Trp Asn Tyr Lys Gly Lys Gly Ala Ser Ile Met Glu Val
 805 810 815
 Ile Glu Lys Gly Pro Phe Asp His Ala Arg Ser Lys Val Lys Ala Gly
 820 825 830
 Thr Ile Ile Glu Lys Ile Asn Gly Gln Glu Ile Thr Pro Glu Thr Asp
 835 840 845
 Tyr His Thr Leu Leu Asn Asp Lys Ala Asn Lys Lys Thr Leu Val Ser
 850 855 860
 Leu Tyr Asn Pro Gln Ser Gly Glu Arg Trp Glu Glu Val Val Ile Pro
 865 870 875 880
 Ile Gly Asn Gly Ile Leu Asn Asn Leu Leu Tyr Lys Arg Trp Val Lys
 885 890 895
 Gln Arg Ala Ala Asp Val Asp Lys Trp Ser Asp Gly Arg Leu Gly Tyr
 900 905 910
 Val His Ile Gln Ser Met Gly Asp Asp Ser Phe Arg Ser Val Tyr Ser
 915 920 925
 Asp Ile Leu Gly Lys Tyr Asn Asn Arg Glu Gly Ile Val Ile Asp Thr
 930 935 940
 Arg Phe Asn Gly Gly Gly Arg Leu His Glu Asp Ile Glu Val Leu Phe
 945 950 955 960
 Ser Gly Lys Lys Tyr Phe Thr Gln Val Val Arg Gly Arg Glu Ala Cys
 965 970 975
 Asp Met Pro Ser Arg Arg Trp Asn Lys Pro Ser Ile Met Leu Thr Cys
 980 985 990
 Glu Ala Asn Tyr Ser Asn Ala His Gly Thr Pro Trp Val Tyr Ser His
 995 1000 1005
 Gln Lys Leu Gly Lys Leu Val Gly Met Pro Val Pro Gly Thr Met Thr
 1010 1015 1020
 Ser Val Ser Trp Glu Arg Leu Gln Asp Pro Ser Leu Val Phe Gly Ile
 1025 1030 1035 1040
 Pro Val Ile Gly Tyr Arg Leu Pro Asp Gly Ser Tyr Leu Glu Asn Thr
 1045 1050 1055
 Gln Leu Glu Pro Asp Ile Lys Val Ala Asn Ser Pro Glu Thr Ile Val
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 Lys Gly Glu Asp Thr Gln Leu Lys Thr Ala Val Glu Glu Leu Leu Lys
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 Glu Leu Pro Ala Gly Lys Gly Lys Lys His
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<212> PRT

<213> B.fragilis

<400> 6352

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 Thr Phe Leu Leu Ile Ile Leu Met Asp Ile Gln Phe Asn Tyr Ala Cys
 20 25 30
 Pro Cys Ser Pro Thr Asn Thr Leu Ile Glu Met Asn Glu Ser Phe Ala
 35 40 45

Ser	Gln	Phe	Gln	Thr	Ala	Thr	Ile	Ile	Pro	Met	Phe	Leu	Trp	Gln	Pro
50						55					60				
Ser	Trp	Ser	Tyr	Pro	Ile	Glu	Gly	Leu	Ala	Ile	Gly	Leu	Leu	Ile	Ser
65					70					75					80
Leu	Ile	Val	Tyr	Tyr	Arg	Met	Val	Tyr	Ser	Thr	Lys	Leu	Phe	Pro	His
				85					90					95	
Glu	Lys	Leu	Arg	Leu	Ile	Leu	Asn	Ile	Thr	His	Lys	Thr	Gln	Thr	Pro
			100					105					110		
Leu	Thr	Leu	Ile	His	His	Leu	Leu	Glu	Glu	Ile	Ile	Ser	Asp	Ser	Leu
		115					120					125			
Ser	Glu	Ser	Thr	Ser	Gln	Lys	Val	Lys	Arg	Ile	Leu	Arg	Tyr	Thr	Ser
	130					135					140				
His	Ile	Met	Ser	Cys	Tyr	Gln	Asn	Ile	Ala	Val	Phe	Asp	Asp	Lys	Glu
145					150					155					160
Asn	Glu	Leu	His	Pro	Gly	Ser	Ser	Pro	Ile	Glu	Phe	Glu	Leu	Tyr	Thr
				165					170					175	
Phe	Ile	Thr	Ser	Ile	Val	Asn	Gln	Cys	Arg	Ala	Tyr	Ala	Asp	Thr	Arg
			180					185					190		
Gln	Ile	Lys	Leu	Asn	Ile	Asn	Lys	Asp	Phe	Ser	Tyr	Ile	Ser	Cys	Arg
		195					200					205			
Val	Asp	Glu	Ile	Thr	Met	Thr	Ala	Ala	Leu	Gln	Cys	Leu	Leu	Asn	Lys
	210					215					220				
Met	Ile	Glu	Ala	Thr	Pro	Cys	Lys	Gly	Cys	Ile	Asn	Met	Asp	Val	Ser
225					230					235					240
His	Ser	Ile	Lys	His	Trp	Asn	Leu	Gln	Ile	Thr	Asn	Gly	Pro	Glu	Cys
				245					250					255	
Arg	Gln	Ser	His	Lys	Lys	Met	Leu	Ser	Phe	Ile	Ser	Thr	Phe	Met	Leu
			260					265					270		
Ile	His	Tyr	Cys	Gly	Ser	Leu	Gln	Ile	Ile	Lys	Lys	Ile	Ile	Arg	Leu
		275					280					285			
His	Gly	Gly	Lys	Leu	Ile	Gly	Ser	Tyr	His	Gly	Arg	Ser	Ile	Thr	Leu
	290				295						300				
Arg	Val	Thr	Val	Pro	Ile	Asn	Gly	Tyr	Cys	Asn	Thr	Ile	Gln	Cys	Pro
305					310					315					320
Glu	Val	Val	Pro	Pro	Val	Met	Lys	Asp	Asp	Lys	Ile	Ile	Arg	Pro	Asp
				325					330					335	
Lys	Lys	Gln	His	His	Ile	Leu	Leu	Val	Met	Ala	Asp	Thr	Glu	Leu	Ser
			340					345					350		
Asn	Tyr	Leu	His	Lys	Ala	Phe	Ser	Ile	Leu	Phe	Arg	Ile	Thr	Ile	Leu
		355					360					365			
Glu	Asn	Pro	Glu	Gln	Ile	Leu	His	Phe	Ser	Gly	Asp	Arg	Leu	Pro	Asp
		370				375					380				
Ile	Ile	Val	Ile	Asp	Glu	Thr	Val	Asn	Gly	Ile	Arg	Gly	Lys	Glu	Ile
385					390					395				400	
Cys	Ser	Lys	Ile	Lys	Ser	Asn									

515	520	525
Asp Lys Thr Pro Thr Glu Tyr Met His Tyr Phe Lys Met Asn Lys Ala		
530	535	540
Lys Ile Leu Leu Val Thr Gln Gln Tyr Thr Val Thr Glu Ile Ala Thr		
545	550	555
Phe Leu Gly Phe Cys Asn Ala Lys Tyr Phe Gly Lys Arg Phe Lys Lys		
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<400> 6353

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His Val Asp Leu Val Glu Arg Pro Val Pro Thr Glu Glu Leu Phe Ser	
35	45
Lys Ile Ser Val Ile Pro Leu Glu Thr Asn Asp Ser Ser Phe Leu Val	
50	60
Arg Pro Val Lys Val Ile Ile Lys Asp Asn Arg Tyr Tyr Ile Val Asp	
65	80
Glu Gly Val Pro Ala Val Phe Ser Phe Asp Glu Glu Gly His Leu Leu	
85	95
His Lys Ile Gly Lys Lys Gly Gln Gly Pro Gly Glu Tyr Arg Glu Ile	
100	110
Tyr Asp Ala Val Ile Lys Glu Lys Glu Asn Thr Val Tyr Met Leu Ser	
115	125
Pro Phe Gly Ser Leu Tyr Val Tyr Ser Leu Asp Gly Lys Phe Ile Lys	
130	140
Glu Ile Lys Leu Pro Thr Arg Ser Asn Tyr Gln Leu Ile Glu Glu Leu	
145	160
Asp Ser Lys Tyr Phe Val Thr Trp Thr Leu Pro Ala Ser Glu Asn Glu	
165	175
Asn Cys Ile Ser Val Ile Ser Lys Glu Ser Phe Asn Asn Val Lys Glu	
180	190
Phe Trp His Val Pro Pro Val Leu Thr Thr Leu Asn Ser Lys Pro Phe	
195	205
Tyr Asn Tyr Glu His Lys Val Tyr Phe Ser Asn Pro Tyr Gln Asn Glu	
210	220
Val Tyr Glu Val Arg Thr Asp Ser Leu Arg Val Ala Tyr Arg Trp Asp	
225	240
Phe Gly Lys Asp Asn Leu Asp Leu Lys Glu Tyr Gly Phe Thr Leu Leu	
245	255
Glu Asp Gln Lys Val Glu Glu Tyr Lys Leu Met Leu Gln Cys Leu Arg	
260	270
Asp Ser Thr Val Pro Tyr Leu Leu Arg His Gln Phe Gln Asn Lys Lys	
275	285
Tyr Tyr Tyr Thr Met Leu Thr Phe Gly Phe Arg His Arg Ile Asn Leu	
290	300
Phe Tyr Arg Lys Asp Asp Gly Lys Ser Phe Phe Phe Glu Lys Thr Ala	
305	320
Glu Gly Val Leu Leu His Pro Leu Ala Phe Asn Glu Asp Phe Leu Thr	
325	335
Cys Ile Val Phe Asn Glu Asp Phe Pro Asn Tyr Glu Lys Val Leu Pro	

2997 2998 2999 3000 3001 3002 3003 3004 3005 3006 3007 3008 3009 3010 3011 3012 3013 3014 3015 3016 3017 3018 3019 3020 3021 3022 3023 3024 3025 3026 3027 3028 3029 3030 3031 3032 3033 3034 3035 3036 3037 3038 3039 3040 3041 3042 3043 3044 3045 3046 3047 3048 3049 3050 3051 3052 3053 3054 3055 3056 3057 3058 3059 3060 3061 3062 3063 3064 3065 3066 3067 3068 3069 3070 3071 3072 3073 3074 3075 3076 3077 3078 3079 3080 3081 3082 3083 3084 3085 3086 3087 3088 3089 3090 3091 3092 3093 3094 3095 3096 3097 3098 3099 3100 3101 3102 3103 3104 3105 3106 3107 3108 3109 3110 3111 3112 3113 3114 3115 3116 3117 3118 3119 3120 3121 3122 3123 3124 3125 3126 3127 3128 3129 3130 3131 3132 3133 3134 3135 3136 3137 3138 3139 3140 3141 3142 3143 3144 3145 3146 3147 3148 3149 3150 3151 3152 3153 3154 3155 3156 3157 3158 3159 3160 3161 3162 3163 3164 3165 3166 3167 3168 3169 3170 3171 3172 3173 3174 3175 3176 3177 3178 3179 3180 3181 3182 3183 3184 3185 3186 3187 3188 3189 3190 3191 3192 3193 3194 3195 3196 3197 3198 3199 3200 3201 3202 3203 3204 3205 3206 3207 3208 3209 3210 3211 3212 3213 3214 3215 3216 3217 3218 3219 3220 3221 3222 3223 3224 3225 3226 3227 3228 3229 3230 3231 3232 3233 3234 3235 3236 3237 3238 3239 3240 3241 3242 3243 3244 3245 3246 3247 3248 3249 3250 3251 3252 3253 3254 3255 3256 3257 3258 3259 3260 3261 3262 3263 3264 3265 3266 3267 3268 3269 3270 3271 3272 3273 3274 3275 3276 3277 3278 3279 3280 3281 3282 3283 3284 3285 3286 3287 3288 3289 3290 3291 3292 3293 3294 3295 3296 3297 3298 3299 3300 3301 3302 3303 3304 3305 3306 3307 3308 3309 3310 3311 3312 3313 3314 3315 3316 3317 3318 3319 3320 3321 3322 3323 3324 3325 3326 3327 3328 3329 3330 3331 3332 3333 3334 3335 3336 3337 3338 3339 3340 3341 3342 3343 3344 3345 3346 3347 3348 3349 3350 3351 3352 3353 3354 3355 3356 3357 3358 3359 3360 3361 3362 3363 3364 3365 3366 3367 3368 3369 3370 3371 3372 3373 3374 3375 3376 3377 3378 3379 3380 3381 3382 3383 3384 3385 3386 3387 3388 3389 3390 3391 3392 3393 3394 3395 3396 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3797 3798 3799 3800 3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814 3815 3816 3817 3818 3819 3820 3821 3822 3823 3824 3825 3826 3827 3828 3829 3830 3831 3832 3833 3834 3835 3836 3837 3838 3839 3840 3841 3842 3843 3844 3845 3846 3847 3848 3849 3850 3851 3852 3853 3854 3855 3856 3857 3858 3859 3860 3861 3862 3863 3864 3865 3866 3867 3868 3869 3870 3871 3872 3873 3874 3875 3876 3877 3878 3879 3880 3881 3882 3883 3884 3885 3886 3887 3888 3889 3890 3891 3892 3893 3894 3895 3896 3897 3898 3899 3900 3901 3902 3903 3904 3905 3906 3907 3908 3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 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 Cys Leu Ile Lys Phe Tyr Phe Lys
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 Val Tyr Asp Phe Pro Leu Glu Gln Ser Leu Lys Ser Asp Lys Glu Val
 35 40 45
 Ser Leu Asn Lys Glu Leu Leu Ala Pro Tyr Leu Met Cys Ser Tyr Asp
 50 55 60
 Ser Thr Leu Cys Leu Ile Asp Trp Thr Ala Asn Pro Met Val His Val
 65 70 75 80
 Tyr Asn Met Asn Thr Gly Lys Glu Met Val Ala Phe Gly Asn Lys Gly
 85 90 95
 Met Gly Pro Asp Asp Phe Leu Ser Ile Ser Gln Met Tyr Val Asp Met
 100 105 110
 Gly Lys Arg Ser Leu Val Leu Tyr Asp Gln Ser Leu Gln Thr Ile Ser
 115 120 125
 Ser Phe Gln Ile Asp Ser Leu Ala Gln Gly Ser Leu Ser Lys Ile Asp
 130 135 140
 Cys Val Ser Ala Pro Lys Leu Gly Met Asn Arg Val Tyr Ala Tyr Ser
 145 150 155 160
 Asp Ser Ile Phe Tyr Gly Ser Gly Thr Phe Glu Ser Gly Leu Ile Ala
 165 170 175
 Lys Cys Asn Gln Lys Glu Ile Leu Asn Gln Tyr Leu Pro Phe Pro His
 180 185 190
 Thr Glu Gln Ala Val Asn Arg Asp Val Asn Tyr Leu Leu Phe Gln Gly
 195 200 205
 Asp Leu Ile Met Lys Pro Asp Lys Lys Arg Phe Ala Tyr Leu Ala Tyr
 210 215 220
 Glu Cys Asp Leu Leu Ser Ile Gln Lys Val Val Asn Asp Thr Cys Leu
 225 230 235 240
 Glu Ser Val Val His Leu Asn Thr Tyr Thr Pro Leu Phe Glu Asn Gln
 245 250 255
 Ser Thr Asn Glu Val Ser Ser Val Asn Val Ser Thr Asp Ser Pro Lys
 260 265 270
 Gly Phe Leu Arg Gly Val Ala Thr Glu Asn Tyr Val Tyr Ala Leu Tyr
 275 280 285
 Ser Gly Gln Ile Gly Lys Asn Lys Ala Ile Ala Asn Glu Ile Tyr Val
 290 295 300
 Phe Asp Trp Glu Gly Arg Ala Val Lys Lys Val Ile Leu Asp Arg Trp
 305 310 315 320
 Gly Val Cys Ile Ser Val Asp Ser Asn Asp Glu Arg Leu Cys Leu Met
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 Thr Lys Glu Thr Asp Gly Gly Glu Glu Arg Tyr His Tyr Tyr Cys Tyr
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 Gln Leu Asn
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<400> 6355

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		20						25					30		
Asn	Arg	Val	Ile	Cys	Ser	Asp	Ser	Ile	Ser	Arg	Glu	Leu	Val	Val	Leu
	35						40				45				
Asn	Asp	Thr	Phe	Leu	Phe	Ser	Tyr	Pro	Leu	Gln	Ile	Glu	Cys	Ile	Asp
	50					55				60					
Ser	Met	Leu	Leu	Val	Leu	Asp	Asn	Val	Asn	Asn	Asn	Phe	Phe	His	Leu
65				70					75					80	
Phe	Thr	Leu	Lys	Gly	Val	Pro	Ile	Lys	Ser	Phe	Gly	Glu	Lys	Gly	Gln
			85					90						95	
Gly	Pro	Ile	Asp	Phe	Ile	Asn	Val	Glu	Ser	Phe	Asn	Leu	Ser	Glu	Asp
		100						105					110		
Arg	Lys	Ile	Met	Tyr	Ala	Tyr	Asp	Thr	Ser	Leu	Arg	Lys	Ile	Val	Lys
	115						120					125			
Tyr	Asp	Val	Ser	Ser	Phe	Leu	Lys	Asp	Ser	Leu	Lys	Ser	Glu	Val	Ile
	130					135					140				
Gln	Val	Asn	Tyr	Asp	Ser	Leu	Pro	Gln	Thr	Glu	Val	Pro	Thr	Ile	Ile
145				150						155					160
Tyr	Asp	Met	Leu	Ser	Leu	Lys	Asp	Ser	Asn	Phe	Leu	Val	Lys	Ala	Asn
			165					170						175	
His	Lys	Gly	Leu	Arg	Phe	Gly	Leu	Leu	Lys	Asp	Gly	Lys	Val	Thr	Gln
	180						185						190		
Leu	Tyr	Asn	Ser	Phe	Ser	Asp	Cys	Val	Asn	Thr	Asn	Asp	Asp	Glu	Glu
	195					200						205			
Val	Trp	Ser	Val	Phe	Cys	Ser	Asn	Thr	Lys	Thr	Lys	Leu	Arg	Pro	Asp
	210					215					220				
Arg	Thr	Lys	Met	Leu	Asn	Ala	Thr	Tyr	Leu	Gly	Gly	Val	Leu	Glu	Leu
225				230						235					240
Phe	Asp	Leu	Asp	Asp	Asn	Cys	Ser	Leu	Ser	Leu	Ala	Lys	Ile	Leu	Tyr
			245					250						255	
Ile	Tyr	Glu	Pro	Lys	Tyr	Gly	Ile	Ala	Glu	Gly	Ala	Ile	Pro	Lys	Tyr
		260					265						270		
Val	Val	Phe	Asn	Glu	Thr	Thr	Gln	Ile	Gly	Phe	Glu	Asp	Ile	Tyr	Val
	275						280					285			
Thr	Asn	Asn	Ser	Ile	Tyr	Thr	Leu	Leu	His	Ser	Ile	Gly	Ser	Glu	Thr
	290				295						300				
Leu	Pro	Ser	Glu	Ile	Thr	Val	Phe	Asp	Trp	Ala	Gly	Ile	Pro	Ile	Thr
305				310						315					320
Lys	Ile	Lys	Thr	Gly	Cys	Ser	Leu	Ser	Asn	Ile	Ala	Val	Asp	Gly	Lys
			325					330						335	
Asp	Asn	Thr	Ile	Tyr	Val	Ile	Ala	Glu	Asn	Glu	Gln	Asn	Ala	Tyr	Glu
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Leu	Ser	Cys	Leu	Ser	Leu	Asn									
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3000

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 Val Asn Ser Leu Phe Leu Gln Asn Val Glu Ala Leu Ala Gly Ser Glu
 35 40 45
 His Val Thr Asn Leu Gly Cys Leu Gly Asp Gly Ser Val Asp Cys Pro
 50 55 60
 Ile Asn His Ile Lys Val Glu His Val Val Gln Gly Phe Ser Leu Gly
 65 70 75 80
 Glu

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 His Leu Tyr Phe Glu Thr Met Lys Asn Tyr Met Lys Leu Ile Phe Gly
 1 5 10 15
 Leu Gly Leu Ile Ala Leu Val Gly Tyr Trp Pro Ala Ala Lys Thr Pro
 20 25 30
 Lys Arg Val Asn Ser Leu Phe Leu Gln Asn Val Glu Ala Leu Ala Gly
 35 40 45
 Ser Glu His Val Thr Asn Leu Gly Cys Leu Gly Asp Gly Ser Val Asp
 50 55 60
 Cys Pro Ile Asn His Ile Lys Val Glu Tyr Val Val Gln Gly Phe Ser
 65 70 75 80
 Leu Gly Glu

<210> 6358
 <211> 409
 <212> PRT
 <213> B.fragilis

<400> 6358
 Asp Asn Ile Val Lys Tyr Tyr Ile Cys Leu Gln Lys Gln Thr Val Met
 1 5 10 15
 Lys Arg Ser Arg Leu Phe Leu Trp Ile Phe Gly Ile Leu Met Gln Ala
 20 25 30
 Phe Leu Ile Ser Met His Phe Tyr Gln Arg Asn Met Glu Ala Met Tyr
 35 40 45
 Ala Glu Thr Glu Tyr Leu Leu Lys Glu Val Leu Asn Glu Glu Leu His
 50 55 60
 Arg Lys Gln Gln Glu Leu Asn Leu Phe Tyr Ile Ser Lys Val Thr Ile
 65 70 75 80
 Asp Thr Ile Pro Leu Lys Ile Arg Val Thr Ser Lys Gly Val Lys
 85 90 95
 Thr Phe Thr Val Asp Ala Lys Lys Ser Lys Lys Asn Ile Ser Gln Ser
 100 105 110
 Met Ala Glu Arg Ser Trp His Ser Ala Ala Cys Met Lys Ser Arg Leu
 115 120 125
 Ser Thr Asp Thr Leu Asn Leu Leu Trp Asn Arg Arg Leu Lys Ser Gln
 130 135 140
 Gln Ile Phe Ala Lys Thr Asp Val His Ile Thr Thr Thr His Leu Asp
 145 150 155 160
 Asn Thr Ile Ser Tyr Cys Lys Cys Lys Asn Cys Lys Asp Tyr Cys Phe


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<210> 6359
<211> 376
<212> PRT
<213> B.fragilis
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Ser	Asn	Lys	Val	Met	Lys	Asn	Ile	Ser	Leu	Ile	Leu	Leu	Phe	Ile	
1				5					10				15		
Leu	Phe	Ser	Cys	Lys	Ser	Thr	Gly	Asp	Lys	Thr	Asp	Cys	Glu	Val	Leu
			20					25				30			
His	Val	Asp	Leu	Val	Glu	Arg	Pro	Val	Pro	Thr	Glu	Glu	Leu	Phe	Ser
		35					40				45				
Lys	Ile	Ser	Val	Ile	Pro	Leu	Glu	Thr	Asn	Asp	Ser	Ser	Phe	Leu	Val
	50					55				60					
Gly	Pro	Val	Lys	Val	Ile	Lys	Lys	Asp	Asn	Arg	Tyr	Tyr	Ile	Val	Asp
65					70					75					80
Glu	Gly	Val	Pro	Ala	Val	Phe	Ser	Phe	Asp	Glu	Glu	Gly	His	Leu	Leu
				85					90					95	
His	Lys	Ile	Gly	Lys	Lys	Gly	Gln	Gly	Pro	Gly	Glu	Tyr	Arg	Glu	Ile
			100					105					110		
Tyr	Asp	Ala	Val	Ile	Lys	Glu	Lys	Glu	Asn	Ala	Val	Tyr	Met	Leu	Ser
		115					120					125			
Pro	Phe	Gly	Ser	Leu	Tyr	Val	Tyr	Ser	Leu	Asp	Gly	Lys	Phe	Ile	Lys
	130					135					140				
Glu	Ile	Lys	Leu	Pro	Thr	Arg	Ala	Asn	Tyr	Gln	Leu	Ile	Glu	Glu	Leu
145					150					155					160
Glu	Ser	Lys	Tyr	Phe	Val	Thr	Trp	Thr	Leu	Pro	Ala	Ser	Glu	Asn	Asp

Ser Pro Val Gly Ile Leu Glu Ser Thr Gln Arg Ile Glu Gln Glu Ile
65 70 75 80
Gly Arg Leu His Lys Ser Arg Asp Gly Val Tyr Ser Asp Arg Leu Ile
85 90 95
Asp Ile Asp Leu Leu Tyr Gly Asp Lys Ile Leu Gln Asp Glu Arg
100 105 110
Leu Ile Val Pro His Pro Leu Met Thr Asp Arg Lys Phe Val Leu Glu
115 120 125
Pro Leu Ala Glu Ile Ala Gln Asp Val Val His Pro Val Phe His Lys
130 135 140
Thr Ile Lys Glu Leu Phe Leu Ala Leu Ser
145 150

<210> 6362

<211> 311

<212> PRT

<213> B.fragilis

<400> 6362

Arg Phe Gly Val His Leu Asn Met Gln Ile Lys Pro Met Asn Lys Leu
1 5 10 15
Thr Ile Asn Ala Cys Pro Leu Cys Gly Ala His Leu Lys Arg Ala
20 25 30
Met Thr Cys Thr Asp Phe Tyr Ala Ser Gly Glu Gln Phe Asp Leu Tyr
35 40 45
Thr Cys Glu Asp Cys Gly Phe Thr Phe Thr Gln Gly Val Pro Val Glu
50 55 60
Ala Glu Ile Gly Arg Tyr Tyr Glu Thr Pro Asp Tyr Ile Ser His Ser
65 70 75 80
Asp Thr Lys Lys Gly Ala Met Asn Ala Ile Tyr His His Val Arg Gln
85 90 95
Tyr Met Leu Gly Arg Lys Ala Arg Leu Val Met Lys Glu Ser His Arg
100 105 110
Lys Thr Gly Arg Ile Leu Asp Ile Gly Thr Gly Thr Gly Tyr Phe Ala
115 120 125
His Thr Met Gln Asn Arg Gly Trp Glu Val Glu Ala Val Glu Lys Ser
130 135 140
Gly Gln Ala Arg Asn Phe Ala Arg Glu His Phe Gly Leu Asn Val Arg
145 150 155 160
Pro Glu Ala Ala Leu Lys Glu Leu Val Pro Gly Thr Phe Asp Val Ile
165 170 175
Thr Leu Trp His Val Met Glu His Leu Glu His Leu Asp Glu Thr Trp
180 185 190
Glu Leu Leu Arg Glu Leu Leu Thr Glu Lys Gly Val Leu Ile Val Ala
195 200 205
Val Pro Asn Cys Ser Ser Tyr Asp Ala Met Lys Tyr Gly Lys Tyr Trp
210 215 220
Ala Ala Tyr Asp Val Pro Arg His Leu Trp His Phe Thr Pro Ala Thr
225 230 235 240
Ile Gln Gln Phe Gly Ser Lys His Gly Phe Ile Leu Ala Ala Arg His
245 250 255
Pro Met Pro Phe Asp Ala Phe Tyr Val Ser Met Leu Thr Glu Lys His
260 265 270
Lys Gly Ser Ala Tyr Ser Phe Val Lys Gly Met Trp Thr Gly Thr Val
275 280 285
Ala Trp Leu Ser Ala Gln Ala Lys Lys Glu Arg Ser Ser Ser Met Ile
290 295 300
Tyr Val Phe Arg Lys Lys Arg
305 310

<210> 6363
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 6363
 Trp Val Met Ser Val Phe Cys Leu Gln Glu Thr Cys Phe Leu Gln Thr
 1 5 10 15
 Lys Asp Tyr Met Asp Asn Ser Ser Lys Gln Asn Ile His Arg Glu Lys
 20 25 30
 His Leu Val Phe Ser Phe Thr His Arg Tyr Ile Leu Asn Ile Thr Phe
 35 40 45
 Gly Arg His Pro Leu Gly Ser Thr Val Ile Pro Asp Thr Leu Lys Ala
 50 55 60
 Tyr Thr Asp Ile Met Ser Ala Ile Gln Thr Arg His Ile
 65 70 75

<210> 6364
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 6364
 Asn Lys Asn Thr Met Tyr Thr Ile Gln Ala Asn Pro Ser Gly Thr Arg
 1 5 10 15
 Ser Met Glu Ile Ser Glu Glu Asn Leu Val Thr Ile Glu Lys Tyr Ser
 20 25 30
 Leu Phe Gln His Leu Ile Asp Ser Asn Gly Ile Val Asp Glu Ala Val
 35 40 45
 Leu Glu Lys Leu Lys Leu Asn Ile Arg Ser Leu Ile Ala Ser Gln Glu
 50 55 60
 Glu Asp Ser Lys Asp Leu Leu Asp Leu Cys Ile Asp Val Ile Tyr His
 65 70 75 80
 Asn Asn Met Lys Ala Phe Gly Leu Gln Gln Leu Ile Lys Leu Tyr Leu
 85 90 95
 Thr Trp Leu Ser Lys Gln Glu Ala Glu Glu Glu Glu Ala
 100 105 110

<210> 6365
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 6365
 Ser Phe Val Ala Tyr Tyr Met Asn Gln Phe Tyr Ile Ile Met Lys Ala
 1 5 10 15
 Lys Met Phe Phe Leu Val Val Ala Met Leu Leu Cys Arg Gly Val Ala
 20 25 30
 Tyr Ala Tyr Ser Pro Ser Ala Asn Asp Pro Ile Ser Lys Ser Gly Gly
 35 40 45
 Ile Glu Gln Asp Ile Pro Pro Pro His Ile Pro Pro Pro Leu Pro
 50 55 60
 Ser Gln Ile Phe Leu His Val Gly Glu Ile Ser Glu Thr Pro Tyr Pro
 65 70 75 80
 Met Ile Gly Ala Met Val Trp Glu Cys Asp Asn Pro Pro Val Gly Ile
 85 90 95
 Glu Gln Glu Glu Ser Tyr Ile Phe Gly Thr Met Ile Ile Leu Arg Ile
 100 105 110

Lys Gly Val Ala Ala Gly Arg Tyr Gln Val Asp Met Lys Trp Tyr Asn
 115 120 125
 Pro Leu Asn Pro Gly Gln Pro Pro Leu Gly Arg Gln Thr Ile Glu Val
 130 135 140
 Ile Val Gln Pro Trp Pro
 145 150

<210> 6366
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 6366
 Gly Val Ala Leu Pro Cys Gly Trp Leu His Pro Ile Ser Val Pro Ser
 1 5 10 15
 Gln Thr Thr Gly Gln Pro Asp Arg Gln Ser Thr Asp Leu Phe Asn Tyr
 20 25 30
 Phe Lys Phe Ile Thr Gln Asn Gln Arg Lys Ser Leu Ser Leu Pro Lys
 35 40 45
 Ile Phe Ser Ile Tyr Ser His Lys Thr Phe Gly Ile Met Ala Lys Arg
 50 55 60
 Arg Glu Leu Lys Lys Asn Val Asn Tyr Ile Ala Gly Glu Leu Phe Ser
 65 70 75 80
 Glu Cys Leu Ile Asn Ser Lys Phe Ile Pro Gly Thr Asp Lys Lys Lys
 85 90 95
 Ala Asp Glu Leu Met Val Glu Ile Met Lys Met Gln Asp Glu Phe Ile
 100 105 110
 Ser Arg Ile Ser His Thr Glu Pro Gly Asn Val Lys Gly Phe Tyr Lys
 115 120 125
 Lys Phe Arg Ser Asp Phe Asn Ala Lys Val Asn Glu Ile Ile Asp Ala
 130 135 140
 Ile Ala Lys Leu Asn
 145

<210> 6367
 <211> 746
 <212> PRT
 <213> B.fragilis

<400> 6367
 Ile Cys Ser Asn Ile His Asn Asn Thr Ile Met Lys Lys His Leu Ser
 1 5 10 15
 Leu Ile Leu Val Leu Leu Pro Val Leu Phe Leu Ala Leu Pro Ala Leu
 20 25 30
 Ala Gln Glu Arg Lys Lys Val Gly Val Val Leu Ser Gly Gly Gly Ala
 35 40 45
 Lys Gly Val Ala His Ile Gln Ala Leu Lys Val Ile Glu Glu Ala Gly
 50 55 60
 Ile Pro Ile Asp Tyr Ile Val Gly Thr Ser Met Gly Ser Ile Ile Gly
 65 70 75 80
 Gly Leu Tyr Ser Ile Gly Tyr Thr Pro Gln Gln Leu Asp Ser Met Val
 85 90 95
 Arg Lys Gln Asp Trp Met Phe Leu Leu Ser Asp Arg Val Lys Arg Ser
 100 105 110
 Ala Met Ser Leu Asn Glu Arg Glu Lys Ser Glu Lys Tyr Val Phe Ser
 115 120 125
 Phe Pro Phe Thr Lys Ser Pro Lys Asp Ala Val Ser Gly Gly Ile Ile
 130 135 140
 Lys Gly Gln Asn Leu Ala Asn Leu Phe Thr Glu Leu Thr Val Gly Tyr

145				150				155				160			
His	Asp	Ser	Val	Asp	Phe	Asn	Lys	Leu	Pro	Ile	Pro	Phe	Ala	Cys	Val
				165					170					175	
Ser	Gln	Asn	Ile	Val	Asn	Gly	Glu	Gln	Ile	Val	Phe	His	Asn	Gly	Ile
			180					185					190		
Leu	Ala	Thr	Ala	Met	Arg	Ala	Ser	Met	Ala	Ile	Pro	Gly	Val	Phe	Thr
		195					200					205			
Pro	Val	Arg	Lys	Asp	Ser	Met	Ile	Leu	Ile	Asp	Gly	Gly	Met	Ile	Asn
	210					215				220					
Asn	Tyr	Pro	Val	Asp	Val	Ala	Arg	Ser	Met	Gly	Ala	Asp	Ile	Ile	Ile
225				230						235				240	
Gly	Val	Asp	Val	Gln	Asn	Asn	Leu	Lys	Gly	Ile	Asp	Lys	Leu	Asn	Ser
			245						250					255	
Ala	Pro	Asp	Ile	Leu	Ser	Gln	Ile	Ile	Asp	Leu	Thr	Thr	Lys	Asn	Asn
		260					265						270		
His	Gln	Ser	Asn	Val	Gly	Leu	Thr	Asp	Thr	Tyr	Ile	Lys	Val	Asn	Val
	275						280					285			
Glu	Gly	Tyr	Ser	Ser	Ala	Ser	Phe	Thr	Pro	Ala	Ala	Ile	Asp	Ser	Leu
	290					295				300					
Met	His	Arg	Gly	Glu	Val	Ala	Ala	Arg	Lys	Gln	Trp	Ala	Ser	Leu	Leu
305					310					315					320
Ala	Leu	Lys	Lys	Lys	Ile	Gly	Ile	Ala	Asp	Thr	Phe	Val	Pro	Gln	Ser
			325						330					335	
His	Gly	Pro	Tyr	Thr	Met	Phe	Ser	Lys	Asp	Arg	Thr	Leu	His	Val	Lys
		340					345						350		
Glu	Ile	Thr	Phe	Ser	Asp	Val	Glu	Glu	Asn	Asp	Lys	Lys	Trp	Leu	Met
	355					360					365				
Lys	Lys	Cys	Lys	Leu	Gln	Glu	Asn	Ser	Arg	Ile	Ser	Met	Arg	Gln	Ile
	370				375					380					
Glu	Gln	Ala	Leu	Phe	Ile	Leu	Arg	Gly	Asn	Gln	Ser	Tyr	Ser	Asn	Ala
385				390					395					400	
Ser	Tyr	Thr	Leu	Thr	Asp	Thr	Pro	Glu	Gly	Tyr	Lys	Leu	Asn	Phe	Leu
			405					410						415	
Leu	Glu	Lys	Lys	Tyr	Glu	Lys	Thr	Ile	Asn	Val	Gly	Ile	Arg	Phe	Asp
		420					425						430		
Ser	Glu	Glu	Ile	Ala	Ser	Leu	Leu	Ile	Asn	Ala	Thr	Ala	Gln	Leu	Lys
	435					440					445				
Thr	His	Ile	Pro	Ser	Lys	Val	Ser	Val	Thr	Gly	Arg	Leu	Gly	Lys	Arg
	450				455						460				
Tyr	Met	Ala	Arg	Val	Asp	Tyr	Thr	Leu	Glu	Pro	Met	Gln	Gln	Arg	Asn
465				470					475					480	
Val	Asn	Phe	Ser	Tyr	Met	Phe	Gln	Tyr	Asn	Asp	Ile	Asn	Ile	Tyr	Asp
			485					490						495	
His	Gly	Asp	Arg	Ala	Tyr	Asn	Thr	Thr	Tyr	Lys	Tyr	His	Ser	Gly	Glu
		500					505						510		
Phe	Gly	Phe	Ser	Asp	Val	Trp	Tyr	Lys	Asn	Phe	Arg	Phe	Gly	Phe	Gly
	515					520				525					
Ala	Arg	Ile	Glu	Tyr	Phe	Lys	Tyr	Lys	Asp	Phe	Leu	Phe	Lys	Lys	Pro
	530					535				540					
Glu	Phe	Thr	Met	Asn	Val	Asn	Ser	Glu	Tyr	Phe	Ile	Ser	Tyr	Phe	Ala
545				550					555					560	
Gln	Leu	Arg	Tyr	Asn	Thr	Phe	Asp	Lys	Gly	Tyr	Phe	Pro	Ser	Lys	Gly
			565					570						575	
Ser	Asn	Phe	Ser	Gly	Ala	Tyr	Ser	Leu	Tyr	Thr	Asp	Asn	Phe	Ala	Arg
		580					585					590			
Tyr	Asn	Gly	His	Ala	Pro	Phe	Ser	Ala	Leu	Ser	Ala	Ser	Trp	Glu	Ser
	595					600					605				
Val	Phe	Ser	Ile	Ser	Asn	Arg	Leu	Thr	Leu	Ile	Pro	Ala	Leu	Tyr	Gly
	610				615					620					

Arg Val Leu Ile Gly Gln Glu Ile Pro Tyr Ala Tyr Glu Asn Ala Leu
 625 630 635 640
 Gly Gly Asp Val Phe Gly Arg Tyr Leu Pro Gln Gln Leu Pro Phe Ala
 645 650 655
 Gly Ile Tyr Asn Ile Glu Leu Thr His Asn Ser Val Ala Val Ala Ser
 660 665 670
 Leu Lys Leu Arg Gln Arg Met Gly Ser Lys His Tyr Ile Thr Leu Ala
 675 680 685
 Gly Asn Phe Ala Leu Ser Asp Asp Asn Phe Phe Lys Ile Leu Lys Gly
 690 695 700
 Asn Arg Ile Tyr Gly Cys Ser Ile Gly Tyr Gly Leu Asp Ser Met Phe
 705 710 715 720
 Gly Pro Leu Glu Ala Ser Leu Gly Tyr Ser Asn Gln Ser Lys Asp Val
 725 730 735
 Gly Phe Tyr Val Asn Leu Gly Phe Ser Phe
 740 745

<210> 6368

<211> 1023

<212> PRT

<213> B.fragilis

<400> 6368

Leu Pro Glu Lys Ser Ile Gly Ser Arg Tyr Pro Gln Ile Glu Asn Ala
 1 5 10 15
 Val Tyr Arg Ile Asn Gly Gln Leu Ala Thr Ser Ser Ala Asn Asp Leu
 20 25 30
 Ser Ala Ile Ala Gly Phe Ser Phe Ile Ser Ser Thr Phe Ala Pro Asp
 35 40 45
 Asn His Ser Thr Glu His Met Lys Lys Leu Cys Ile Phe Leu Leu Leu
 50 55 60
 Leu Phe Ala Ala Thr Gly Ile Leu Phe Ala Gln Glu Ile Glu Lys Ser
 65 70 75 80
 Val Lys Glu Arg Leu Ser Asn Tyr Phe Glu Thr Tyr Thr Pro Ala Ser
 85 90 95
 Ala Asn Thr Gly Ser Cys Lys Leu Lys Ser Val Asp Ile Asp Phe Glu
 100 105 110
 Gly Arg Lys Leu Ser Ile Tyr Ala Ser Glu Ser Phe Ala Tyr Gln Pro
 115 120 125
 Phe Val Pro Glu Thr Val Asp Glu Ile Tyr His Gln Ile Glu Glu Leu
 130 135 140
 Leu Pro Gly Pro Val Arg Phe Phe Arg Thr Thr Ile Tyr Ala Asn Asn
 145 150 155 160
 Gln Pro Ile Glu Glu Leu Ile Pro Asn Phe Phe Arg Gly Lys Lys Lys
 165 170 175
 Lys Asp Lys Ser Arg Leu Ser Asn Ala Glu Tyr Lys Gly Ala Pro Trp
 180 185 190
 Val Ile Asn Thr Ser Arg Pro Tyr Glu Ile Thr Lys Gly Leu Gln Asn
 195 200 205
 Arg His Ile Ser Leu Trp Gln Ser His Gly Lys Tyr Tyr Lys Asn Asp
 210 215 220
 Lys Gly Glu Trp Gly Trp Gln Arg Pro Arg Leu Phe Cys Thr Thr Glu
 225 230 235 240
 Asp Leu Phe Thr Gln Ser Phe Ile Leu Pro Tyr Val Ile Pro Met Leu
 245 250 255
 Glu Asn Ala Gly Ala Asn Val Tyr Thr Pro Arg Glu Arg Asp Thr Gln
 260 265 270
 Lys Asn Glu Val Ile Val Asp Asn Asp Thr Arg Asn Gly Ser Ile Tyr
 275 280 285

Leu Glu Met Lys Ser Arg Lys Ala Arg Trp Glu Lys Thr Asp Gly Tyr
 290 295 300
 Gly Phe Ala Gln Arg Lys Pro Val Tyr Glu Asp Gly Glu Asn Pro Phe
 305 310 315 320
 Leu Thr Gly Ser Ala Arg Phe Thr Arg Thr Glu Lys Lys Lys Asn Lys
 325 330 335
 Ala Phe Ala Glu Trp Ile Pro Thr Ile Pro Glu Thr Gly Ser Tyr Ala
 340 345 350
 Val Tyr Val Ser Tyr Gln Thr Leu Pro Asn Ser Val Ser Asp Ala Lys
 355 360 365
 Tyr Leu Val Phe His Lys Gly Gly Val Thr Glu Phe Lys Val Asn Gln
 370 375 380
 Arg Ile Gly Gly Gly Thr Trp Val Tyr Leu Gly Thr Phe Glu Phe Asp
 385 390 395 400
 Lys Gly Ser Asn Asp Tyr Gly Met Val Val Leu Ser Asn Glu Ser Ser
 405 410 415
 Glu Asn Gly Val Ile Cys Ala Asp Ala Val Arg Phe Gly Gly Gly Met
 420 425 430
 Gly Asn Ile Ser Arg Gly Thr Val Ser Gly Leu Pro Arg Tyr Leu Glu
 435 440 445
 Gly Ala Arg Tyr Ser Ala Gln Trp Ala Gly Met Pro Tyr Asp Val Tyr
 450 455 460
 Gly Gly Lys Gln Gly Thr Asn Asp Tyr Ala Asp Ile Asn Ala Arg
 465 470 475 480
 Ser Asn Thr Ile Asn Tyr Leu Ser Gly Gly Ser Val Phe Asn Pro Gly
 485 490 495
 Gln Lys Gly Leu Gly Val Pro Phe Glu Met Asn Val Ala Leu His Ser
 500 505 510
 Asp Ala Gly Tyr Ser Lys Thr Asn Asp Ile Val Gly Ser Leu Ser Ile
 515 520 525
 Tyr Thr Thr Asp Phe Asn Asn Gly Leu Leu Asn Ser Gly Asn Ser Arg
 530 535 540
 Tyr Ala Ser Arg Asp Leu Ala Asp Leu Leu Leu Thr Gln Ile Gln Lys
 545 550 555 560
 Asp Ile Arg Ala Lys Phe Asn Ile Gln Trp Thr Arg Arg Ser Met Trp
 565 570 575
 Asp Arg Asn Tyr Ser Glu Thr Arg Leu Pro Ala Ala Pro Ser Thr Ile
 580 585 590
 Val Glu Leu Leu Ser His Gln Asn Phe Ala Asp Met Lys Leu Gly His
 595 600 605
 Asp Pro Asn Phe Lys Phe Thr Val Gly Arg Ala Ile Tyr Lys Ala Val
 610 615 620
 Leu Gln Phe Ile Ser Ser Gln His Asn Lys Glu Tyr Val Val Gln Pro
 625 630 635 640
 Leu Pro Val Ser Asn Phe Ala Ile Glu Phe Gly Lys Lys Arg Asn Thr
 645 650 655
 Leu Glu Leu Ser Trp Gln Gly Glu Asn Asp Pro Leu Glu Pro Thr Ala
 660 665 670
 Arg Pro Arg Glu Tyr Met Val Tyr Thr Arg Ile Gly Tyr Gly Gly Phe
 675 680 685
 Asp Asn Gly Val Arg Val Asn Lys Pro Ser Tyr Thr Leu Lys Ile Glu
 690 695 700
 Pro Gly Leu Val Tyr Ser Phe Lys Val Thr Ala Val Asn His Gly Gly
 705 710 715 720
 Glu Ser Phe Pro Ser Glu Ile Leu Ser Ala Tyr Lys Ala Lys Gln Glu
 725 730 735
 His Ala Arg Val Leu Ile Ile Asn Gly Phe Asn Arg Leu Ser Gly Pro
 740 745 750
 Ala Val Ile Asp Thr Pro Asp Glu Ala Gly Phe Asp Leu Glu Gln Asp


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      755              760              765
Pro Gly Val Ala Tyr Gln Tyr Asn Ile Ser Leu Cys Gly Ala Gln Thr
770              775              780
Gly Phe Asp Arg Ser Gln Ala Gly Lys Glu Gly Lys Gly Ser Leu Gly
785              790              795              800
Tyr Ser Gly Asn Glu Leu Glu Gly Met Lys Ile Ala Gly Asn Thr Phe
805              810              815
Asp Tyr Pro Phe Val His Gly Lys Ala Ile Gln Ala Ala Gly Asn Tyr
820              825              830
Ser Phe Val Ser Cys Ser Asp Glu Ala Val Glu Asn Gly Arg Ile Gln
835              840              845
Pro Glu His Tyr Pro Ile Val Asp Phe Ile Leu Gly Leu Glu Lys Asp
850              855              860
Asp Ile Leu Ser Asn Pro Ala Arg Lys Thr Tyr Tyr Lys Thr Phe Ser
865              870              875              880
Ser Pro Met Gln Arg Ile Leu Thr Ala Tyr Cys Gln Ser Gly Gly Asn
885              890              895
Leu Leu Val Ser Gly Ser Tyr Ile Gly Ser Asp Met Ser Asn Ser Gln
900              905              910
Gly Asn Arg Glu Phe Thr Glu Lys Ile Leu Lys Tyr Gly Phe Gln Gly
915              920              925
Ser Leu Lys Asp Thr Arg Ser Gly Gln Ile Thr Gly Leu Gly Arg Thr
930              935              940
Leu Gln Ile Pro Arg Leu Pro Asn Glu Lys Ala Tyr Ala Val Thr Ala
945              950              955              960
Pro Asp Cys Ile Val Pro Val Asp Ser Ala Phe Pro Val Phe Val Tyr
965              970              975
Gln Pro Gly Gln Tyr Ser Ala Gly Ile Ala Tyr Lys Gly Asn Tyr Arg
980              985              990
Val Phe Ala Met Gly Phe Pro Phe Glu Ser Ile Glu Ser Glu Thr Asp
995              1000              1005
Arg Ala Ile Val Met Ala Ala Ile Leu Lys Phe Phe Gly Glu Lys
1010              1015              1020

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<210> 6369

<211> 1025

<212> PRT

<213> B.fragilis

<400> 6369

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Phe Lys Arg Asn Ser Ser Ser Leu Ser Leu Gly Glu Gly Arg Gly Glu
1      5      10      15
Thr Leu Leu Asn Met Lys Val Ser Phe Phe Ile Asp Arg Pro Val Phe
20     25     30
Ser Ile Val Ile Ser Ile Leu Ile Val Ile Ile Gly Ile Ile Gly Leu
35     40     45
Thr Met Leu Pro Val Asp Gln Tyr Pro Gln Ile Thr Pro Pro Val Val
50     55     60
Lys Ile Ser Ala Ser Tyr Pro Gly Ala Ser Ala Leu Thr Val Ser Gln
65     70     75     80
Ala Val Ala Thr Pro Ile Glu Gln Glu Ile Asn Gly Thr Pro Gly Met
85     90     95
Leu Tyr Met Glu Ser Asn Ser Ser Asn Ser Gly Gly Phe Ser Ala Thr
100    105    110
Val Thr Phe Asp Val Ser Ala Asp Pro Asp Leu Ala Ala Val Glu Ile
115    120    125
Gln Asn Arg Val Lys Leu Ala Glu Ser Arg Leu Pro Ala Glu Val Ile
130    135    140
Gln Asn Gly Ile Ser Val Glu Lys Gln Ala Pro Ser Gln Leu Met Thr

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145		150		155		160
Leu Thr Leu Met	Ser Ser Asp Pro Lys	Phe Asp Glu Ile Tyr Leu Ser				
	165	170		175		
Asn Phe Ala Thr	Ile Asn Val Leu Asp Val Ile Arg Arg Ile Pro Gly					
	180	185		190		
Val Gly Arg Val	Ser Asn Ile Gly Ser Arg Tyr Tyr Ala Met Gln Ile					
	195	200		205		
Trp Ala Glu Pro	Asp Lys Leu Ala Asn Phe Gly Leu Thr Val Gln Asp					
	210	215		220		
Leu Gln Asn Ala	Leu Lys Asp Gln Asn Arg Glu Ser Ala Ala Gly Val					
	225	230		235		240
Leu Gly Gln Gln	Pro Val Lys Gly Leu Asp Val Thr Ile Pro Ile Thr					
	245	250		255		
Thr Gln Gly Arg	Leu Ser Thr Val Glu Gln Phe Glu Asn Ile Val Ile					
	260	265		270		
Arg Ala Asn Thr	Asn Gly Ser Ile Ile Arg Leu Arg Asp Val Ala Arg					
	275	280		285		
Val Ser Leu Glu	Ala Ser Ser Tyr Ser Thr Glu Ser Gly Ile Asn Gly					
	290	295		300		
Lys Asn Ala Ala	Val Leu Gly Ile Tyr Met Leu Pro Gly Ala Asn Ala					
	305	310		315		320
Met Glu Val Ala	Lys Ser Val Lys Glu Ala Met Asp Glu Ile Ser Lys					
	325	330		335		
Asn Phe Pro Glu	Gly Leu Ser Tyr Glu Val Pro Phe Asp Met Thr Thr					
	340	345		350		
Tyr Ile Ser Glu	Ser Ile His Glu Val Tyr Lys Thr Leu Phe Glu Ala					
	355	360		365		
Leu Ile Leu Val	Val Leu Val Val Tyr Leu Ser Leu Gln Ser Trp Arg					
	370	375		380		
Ala Thr Leu Ile	Pro Ile Val Ala Val Pro Ile Ser Leu Ile Gly Thr					
	385	390		395		400
Phe Gly Phe Met	Leu Ile Phe Gly Phe Ser Leu Asn Ile Leu Thr Leu					
	405	410		415		
Leu Gly Leu Ile	Leu Ala Ile Gly Ile Val Val Asp Asp Ala Ile Val					
	420	425		430		
Val Val Glu Asn	Val Glu Arg Ile Met Glu Glu Glu Lys Leu Pro Pro					
	435	440		445		
Tyr Glu Ala Thr	Lys Lys Ala Met Asn Gly Leu Ala Gly Ala Leu Ile					
	450	455		460		
Ala Thr Ser Leu	Val Leu Cys Ala Val Phe Val Pro Val Ser Phe Leu					
	465	470		475		480
Ser Gly Ile Thr	Gly Gln Leu Tyr Arg Gln Phe Thr Ile Thr Ile Ala					
	485	490		495		
Val Ser Val Leu	Ile Ser Thr Val Val Ala Leu Thr Leu Ser Pro Val					
	500	505		510		
Met Cys Ser Leu	Ile Leu Lys Pro Asp Asn Gly Lys Lys Lys Asn Ile					
	515	520		525		
Val Phe Arg Lys	Ile Asn His Trp Leu Asn Val Gly Asn His Lys Tyr					
	530	535		540		
Val Ile Ala Ile	Arg Arg Val Ile Gly Asn Pro Arg Arg Val Leu Ala					
	545	550		555		560
Gly Phe Gly Val	Val Leu Ile Gly Ile Leu Leu Ile His Arg Leu Ile					
	565	570		575		
Pro Thr Ser Phe	Leu Pro Val Glu Asp Gln Gly Tyr Phe Lys Ile Glu					
	580	585		590		
Leu Glu Leu Pro	Glu Gly Ala Thr Leu Glu Arg Thr Arg Glu Val Thr					
	595	600		605		
Asp Arg Ala Ile	Thr Tyr Leu Glu Lys Asn Pro Tyr Ile Ala Tyr Val					
	610	615		620		

Gln Asn Val Thr Gly Ser Ser Pro Arg Val Gly Ser Asn Gln Ala Arg
 625 630 635 640
 Ser Glu Leu Thr Val Ile Leu Lys Pro Trp Glu Asp Arg Lys Asp Thr
 645 650 655
 Ser Ile Asp Glu Ile Met Ser Asn Val Arg His Asp Leu Ser Glu Tyr
 660 665 670
 Pro Glu Cys Lys Val Tyr Leu Ser Thr Pro Pro Val Ile Pro Gly Leu
 675 680 685
 Gly Thr Ser Gly Gly Phe Glu Met Gln Leu Glu Ala Arg Gly Glu Ala
 690 695 700
 Thr Phe Glu Asn Leu Val Gln Ala Ala Asp Thr Leu Met Tyr Tyr Ala
 705 710 715 720
 Ser Gln Arg Lys Glu Leu Thr Gly Leu Ser Ser Ser Leu Gln Ser Asp
 725 730 735
 Ile Pro Gln Leu Tyr Phe Asp Val Asp Arg Asp Lys Val Lys Met Leu
 740 745 750
 Gly Val Pro Leu Ala Asp Val Phe Ser Thr Met Lys Ala Tyr Thr Gly
 755 760 765
 Ser Val Tyr Val Asn Asp Phe Asn Met Phe Thr Arg Ile Tyr Lys Val
 770 775 780
 Tyr Ile Gln Ala Glu Ala Pro Tyr Arg Asp His Lys Asp Asn Ile Asn
 785 790 795 800
 Leu Leu Phe Val Lys Ala Ser Asn Gly Ala Met Ile Pro Leu Thr Ser
 805 810 815
 Leu Gly Asn Ala Ser Tyr Thr Thr Gly Pro Gly Ser Ile Lys Arg Phe
 820 825 830
 Asn Met Phe Thr Thr Ala Val Phe Arg Gly Glu Ala Ala Gln Gly Tyr
 835 840 845
 Ser Ser Gly Gln Ala Met Glu Ile Met Glu Gln Ile Ala Arg Tyr His
 850 855 860
 Leu Pro Asp Asn Ile Gly Leu Glu Trp Ser Gly Leu Ser Tyr Gln Glu
 865 870 875 880
 Lys Lys Ala Gly Gly Gln Thr Gly Leu Val Leu Ala Leu Val Phe Leu
 885 890 895
 Phe Val Phe Leu Phe Leu Ala Ala Gln Tyr Glu Ser Trp Thr Val Pro
 900 905 910
 Ile Ala Val Leu Leu Ser Leu Pro Val Ala Ala Leu Gly Ala Tyr Leu
 915 920 925
 Gly Val Trp Val Cys Gly Leu Glu Asn Asp Val Tyr Phe Gln Ile Gly
 930 935 940
 Leu Val Met Leu Val Gly Leu Ala Ala Lys Asn Ala Ile Leu Ile Val
 945 950 955 960
 Glu Phe Ala Lys Val Gln Val Asp Arg Gly Gly Asp Leu Ile Gln Ser
 965 970 975
 Ala Ile His Ala Ala Gln Leu Arg Phe Arg Pro Ile Leu Met Thr Ser
 980 985 990
 Leu Ala Phe Val Leu Gly Met Leu Pro Met Val Leu Ala Thr Gly Pro
 995 1000 1005
 Gly Ser Ala Ser Arg Ala Ala Ile Gly Thr Gly Val Phe Phe Gly Met
 1010 1015 1020
 Ile
 1025

<210> 6370

<211> 258

<212> PRT

<213> B.fragilis

<400> 6370

Leu Phe Met Lys Ile Ser Ile Val Gln Thr Asp Ile Ile Trp Glu Asn
 1 5 10 15
 Lys Gln Glu Asn Leu Arg Leu Leu Arg Glu Lys Leu Ser Pro Leu Arg
 20 25 30
 Gly Thr Thr Glu Ile Val Val Leu Pro Glu Met Phe Thr Thr Gly Phe
 35 40 45
 Ser Met Asn Ser Arg Leu Leu Ala Glu Pro Val Ser Gly Thr Thr Leu
 50 55 60
 Arg Ser Leu Lys Asn Tyr Ala Ile Glu Phe His Leu Ser Leu Ala Gly
 65 70 75 80
 Ser Phe Ile Cys Glu Glu Gln Gly Ser Tyr Tyr Asn Arg Ala Phe Leu
 85 90 95
 Ile Thr Pro Asp Gly Gln Glu Phe Tyr Tyr Asp Lys Arg His Leu Phe
 100 105 110
 Arg Met Gly His Glu Ala Glu His Phe Ser Ala Gly Ser Arg Lys Val
 115 120 125
 Ile Ile Pro Tyr Asn Gly Trp Asn Ile Cys Leu Gln Val Cys Tyr Asp
 130 135 140
 Leu Arg Phe Pro Val Trp Ser Arg Asn Val Asn Asn Glu Tyr Asp Leu
 145 150 155 160
 Leu Ile Tyr Val Ala Ser Trp Pro Thr Pro Arg Ile Gln Ala Trp Asn
 165 170 175
 Thr Leu Leu Cys Ala Arg Ala Ile Glu Asn Gln Cys Tyr Val Cys Gly
 180 185 190
 Val Asn Arg Ile Gly Gln Asp Gly Asn Gly Leu Cys Tyr Pro Gly Tyr
 195 200 205
 Ser Ala Leu Tyr Gly Pro Lys Gly Glu Asn Leu Ala Gly Thr Pro Asp
 210 215 220
 Ser Glu Glu Lys Ile Gln Thr Ile Glu Leu Ser Leu Glu Ala Leu Thr
 225 230 235 240
 Thr Phe Arg His Lys Phe Pro Cys Trp Lys Asp Ala Asp Pro Phe Leu
 245 250 255
 Leu Tyr

<210> 6371
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 6371
 Thr Ile Asn Glu Glu Arg Gly Thr Ile Asn Ala Arg Arg Met Gly Asn
 1 5 10 15
 Ile Leu Lys Asp Lys Ser Met Ala Phe Ala Ile Gln Ile Val Asn Leu
 20 25 30
 His Lys Tyr Pro Asn Lys Arg Lys Ala Tyr Ser Leu Ser Asp Gln Ile
 35 40 45
 Leu Ile Ser Gly Thr Ala Ile Gly Val Leu Gln Lys Glu Thr Glu Cys
 50 55 60
 Ala Glu Ser Asn Ala Asp Phe Ile His Asn Ile Ala Ser Pro Gln Lys
 65 70 75 80
 Asn Val Met Lys Pro Phe Ser Gly Leu Asn Cys Tyr Leu Lys Gln Asn
 85 90 95
 Ile Tyr Pro Lys Gln Asn Ile Gln Ala Cys Leu Gln Thr Gln Met Asn
 100 105 110

<210> 6372
 <211> 125
 <212> PRT

<213> B.fragilis

<400> 6372

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Trp Arg Thr Asp Asp Phe Thr Val Tyr Tyr Phe Met Ser Glu Ile Gln
1          5          10          15
Asn Gln Ile Lys Lys Trp Pro Val Thr Ala Ile Lys Lys Ile Lys Ser
20          25          30
Thr Phe Gly Ser Ala Glu Lys Phe Tyr Ala Thr Val Tyr Leu Ile Ala
35          40          45
Arg Asn Glu His His Cys Gln Met Met Gly Val Ala Gly Ala Glu Gln
50          55          60
Arg Leu Lys Thr Ile His Ala Tyr Gln Gly Met Ile Arg Phe Met Leu
65          70          75          80
Asp Glu Glu Gly Leu Asn Gly Lys Glu Ile Leu Asp Thr Ile Ala Gly
85          90          95
Glu Tyr Leu Glu Asp Phe Val Asn Tyr Arg Glu Gln Asp Phe Gly Met
100         105         110
Thr Asn Glu Glu Phe Ile Ala Ile Ile Lys Arg Ile Gly
115         120         125

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<210> 6373

<211> 409

<212> PRT

<213> B.fragilis

<400> 6373

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Leu Ile Lys Asp Lys Leu Ile Leu Ile Ile Gln Thr Ser Met Arg Leu
1          5          10          15
Phe Phe Thr Arg Lys Glu Leu Lys Leu Arg Arg Lys Arg Thr Ile Ala
20          25          30
Gly Ile Val Cys Leu Ala Leu Val Ala Gly Ile Tyr Trp Ile Leu Thr
35          40          45
Arg Pro His Lys Val Glu Pro Glu Val Pro Thr Val Ile Val Glu Pro
50          55          60
Ala Glu Arg Asp Asn Val Glu Ile Phe Gly Glu Tyr Val Gly Arg Ile
65          70          75          80
Arg Ala Gln Gln Phe Val Glu Val Arg Ala Arg Val Glu Gly Tyr Leu
85          90          95
Glu Ser Met Leu Phe Ala Glu Gly Thr Tyr Val Asn Lys Asn Gln Val
100         105         110
Leu Phe Val Ile Asn Gln Asp Gln Tyr Arg Ala Lys Ala Asp Lys Ala
115         120         125
Arg Ala Gln Leu Lys Lys Asp Glu Ala Gln Ala Leu Lys Ala Lys Arg
130         135         140
Asp Leu Glu Arg Ile Lys Pro Leu Tyr Ala Gln Asn Ala Ala Ser Gln
145         150         155         160
Leu Asp Leu Asp Asn Ala Glu Ala Ala Tyr Glu Ser Ala Val Ala Thr
165         170         175
Val Ala Met Ser Glu Ala Asp Leu Ala Gln Ala Glu Leu Glu Leu Gly
180         185         190
Tyr Thr Leu Val Arg Ser Pro Leu Ser Gly His Ile Ser Glu Arg Asn
195         200         205
Val Asp Leu Gly Thr Leu Val Gly Pro Gly Gly Lys Ser Leu Leu Ala
210         215         220
Thr Val Val Lys Ser Asp Thr Val Leu Val Asp Phe Ser Met Thr Ala
225         230         235         240
Leu Asp Tyr Leu Lys Ser Lys Glu Arg Asn Ile Asn Ile Gly Gln Gln
245         250         255
Asp Ser Ser Arg Ser Trp Gln Pro Asn Ile Thr Ile Thr Leu Ala Asp

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260	265	270
Asn Thr Val Tyr Pro Tyr Lys Gly Tyr Val Asp Phe Ala Glu Pro Gln		
275	280	285
Val Asp Pro Gln Thr Gly Thr Phe Ser Val Arg Ala Glu Met Pro Asn		
290	295	300
Pro Lys Gln Val Leu Leu Pro Gly Gln Phe Thr Lys Val Lys Leu Leu		
305	310	315
Leu Asp Val Arg Glu Gly Ala Ile Val Val Pro His Lys Ala Val Thr		
325	330	335
Ile Glu Lys Gly Gly Ala Tyr Ile Tyr Val Met Arg Arg Asp Ser Thr		
340	345	350
Ala Glu Lys Arg Phe Ile Glu Leu Gly Pro Glu Phe Gly Asn Lys Leu		
355	360	365
Val Val Glu Arg Gly Leu Gly Ala Gly Glu Glu Val Val Val Glu Gly		
370	375	380
Tyr His Lys Leu Thr Pro Gly Met Lys Val Arg Ala Thr Leu Pro Gln		
385	390	395
Pro Ser Ala Glu Asn Lys Glu Thr Glu		400
405		

<210> 6374

<211> 981

<212> PRT

<213> B.fragilis

<400> 6374

Asn Cys Thr Trp Val Ser Gly Trp Ile Arg Val Ser Leu Arg Met Tyr		
1	5	10
Cys Ile Val Thr Gly Leu Asn Thr Trp Ile Met Tyr Thr Asn Arg Gly		
20	25	30
Gln Tyr Ala Val Arg Gly Ser Ile Ile Asp Val Phe Ser Phe Ser Ser		
35	40	45
Glu Tyr Pro Tyr Arg Ile Asp Phe Phe Gly Asn Asp Val Glu Ser Ile		
50	55	60
Arg Thr Phe Glu Val Asp Ser Gln Leu Ser Lys Glu Lys Lys Glu Ser		
65	70	75
Ile Val Ile Val Pro Asp Leu Ala Val Thr Gly Lys Val Thr Thr Ser		
85	90	95
Phe Leu Asp Phe Ile Pro Lys Asp Thr Thr Leu Ala Met Arg Asp Phe		
100	105	110
Leu Trp Leu Arg Glu Arg Ile Gln Val Val His Asp Glu Ser Leu Thr		
115	120	125
Pro Gln Ala Leu Ala Ser Gln Glu Ala Glu Glu Asn Gly Gly Ile Thr		
130	135	140
Leu Glu Gly Lys Leu Ile Asp Gly Ser Glu Phe Thr Val Arg Ala Leu		
145	150	155
Asp Phe Arg Arg Met Glu Phe Gly Asn Lys Pro Thr Gly Thr Pro Asp		
165	170	175
Ala Thr Leu Thr Phe His Thr Thr Ala Gln Pro Ile Phe His Lys Asn		
180	185	190
Phe Asp Leu Val Ala Glu Ser Phe Lys Glu Tyr Leu Asn Arg Gly Tyr		
195	200	205
Ala Leu Tyr Ile Cys Ser Asp Ser Thr Lys Gln Thr Asp Arg Ile Lys		
210	215	220
Ala Ile Phe Glu Asp Arg Gly Asp Arg Ile Gln Phe Thr Ala Val Glu		
225	230	235
Arg Thr Leu His Glu Gly Phe Ala Asp Asp Thr Leu Lys Leu Cys Leu		
245	250	255
Phe Thr Asp His Gln Leu Phe Asp Arg Phe His Lys Tyr Asn Leu Lys		

260					265					270					
Ser	Asp	Lys	Ala	Arg	Ser	Gly	Lys	Val	Ala	Leu	Ser	Leu	Lys	Glu	Leu
275					280					285					
Asn	Gln	Phe	Thr	Pro	Gly	Asp	Tyr	Val	Val	His	Thr	Asp	His	Gly	Val
290					295					300					
Gly	Arg	Phe	Ser	Gly	Leu	Val	Arg	Ile	Pro	Asn	Gly	Asp	Thr	Thr	Gln
305					310					315					
Glu	Val	Met	Asn	Leu	Val	Tyr	Gln	Asn	Glu	Asp	Val	Val	Phe	Val	Ser
325					330					335					
Ile	His	Ser	Leu	His	Lys	Val	Ser	Lys	Tyr	Lys	Gly	Lys	Glu	Gly	Glu
340					345					350					
Ala	Pro	Arg	Leu	Asn	Lys	Leu	Gly	Thr	Gly	Ala	Trp	Glu	Lys	Leu	Lys
355					360					365					
Glu	Arg	Thr	Lys	Pro	Lys	Ile	Lys	Asp	Ile	Ala	Arg	Asp	Leu	Ile	Lys
370					375					380					
Leu	Tyr	Ser	Gln	Arg	Arg	Glu	Glu	Lys	Gly	Phe	Ala	Tyr	Ser	Pro	Asp
385					390					395					
Ser	Phe	Leu	Gln	Arg	Glu	Leu	Glu	Ala	Ser	Phe	Ile	Tyr	Glu	Asp	Thr
405					410					415					
Pro	Asp	Gln	Ser	Lys	Ala	Thr	Ala	Asp	Val	Lys	Gln	Asp	Met	Glu	Arg
420					425					430					
Asp	Met	Pro	Met	Asp	Arg	Leu	Val	Cys	Gly	Asp	Val	Gly	Phe	Gly	Lys
435					440					445					
Thr	Glu	Val	Ala	Ile	Arg	Ala	Ala	Phe	Lys	Ala	Val	Ala	Asp	Asn	Lys
450					455					460					
Gln	Val	Ala	Val	Leu	Val	Pro	Thr	Thr	Val	Leu	Ala	Tyr	Gln	His	Phe
465					470					475					
Gln	Thr	Phe	Arg	Asp	Arg	Leu	Lys	Gly	Leu	Pro	Cys	Arg	Val	Glu	Tyr
485					490					495					
Leu	Ser	Arg	Ala	Arg	Thr	Ala	Ala	Gln	Ala	Lys	Ala	Val	Ile	Lys	Gly
500					505					510					
Leu	Glu	Ala	Gly	Asp	Val	Asn	Ile	Leu	Ile	Gly	Thr	His	Arg	Ile	Leu
515					520					525					
Gly	Lys	Asp	Val	Lys	Phe	Lys	Asp	Leu	Gly	Leu	Leu	Ile	Ile	Asp	Glu
530					535					540					
Glu	Gln	Lys	Phe	Gly	Val	Ser	Val	Lys	Glu	Lys	Leu	Arg	Gln	Met	Lys
545					550					555					
Val	Asn	Val	Asp	Thr	Leu	Thr	Met	Thr	Ala	Thr	Pro	Ile	Pro	Arg	Thr
565					570					575					
Leu	Gln	Phe	Ser	Leu	Met	Gly	Ala	Arg	Asp	Leu	Ser	Val	Ile	Ser	Thr
580					585					590					
Pro	Pro	Pro	Asn	Arg	Tyr	Pro	Ile	Gln	Thr	Glu	Val	His	Thr	Phe	Ser
595					600					605					
Glu	Glu	Val	Ile	Ala	Asp	Ala	Ile	Asn	Phe	Glu	Met	Ser	Arg	Asn	Gly
610					615					620					
Gln	Val	Phe	Leu	Val	Asn	Asn	Arg	Ile	Ala	Asn	Leu	Pro	Glu	Leu	Lys
625					630					635					
Ala	Met	Ile	Leu	Arg	His	Ile	Pro	Asp	Cys	Arg	Ile	Ala	Ile	Gly	His
645					650					655					
Gly	Gln	Met	Glu	Pro	Ala	Glu	Leu	Glu	Gln	Ile	Ile	Phe	Gly	Phe	Val
660					665					670					
Asn	Tyr	Asp	Tyr	Asp	Val	Leu	Ile	Ala	Thr	Thr	Ile	Ile	Glu	Ser	Gly
675					680					685					
Ile	Asp	Ile	Pro	Asn	Ala	Asn	Thr	Ile	Ile	Ile	Asn	Gln	Ala	Gln	Asn
690					695					700					
Phe	Gly	Leu	Ser	Asp	Leu	His	Gln	Met	Arg	Gly	Arg	Val	Gly	Arg	Ser
705					710					715					
Asn	Lys	Lys	Ala	Phe	Cys	Tyr	Leu	Leu	Ala	Pro	Pro	Leu	Ser	Ser	Leu
725					730					735					

Thr Pro Glu Ala Lys Arg Arg Leu Gln Ala Ile Glu Asn Phe Ser Asp
 740 745 750
 Leu Gly Ser Gly Ile His Ile Ala Met Gln Asp Leu Asp Ile Arg Gly
 755 760 765
 Ala Gly Asn Met Leu Gly Ala Glu Gln Ser Gly Phe Ile Ala Asp Leu
 770 775 780
 Gly Tyr Glu Thr Tyr Gln Lys Ile Leu Ser Glu Ala Val His Glu Leu
 785 790 795 800
 Lys Thr Asp Glu Phe Ala Glu Leu Tyr Ala Asp Glu Leu Lys Gly Glu
 805 810 815
 Gly Val Ile Ser Gly Glu Glu Phe Val Glu Glu Cys Gln Val Glu Ser
 820 825 830
 Asp Leu Glu Leu Leu Leu Pro Ala Asn Tyr Val Thr Gly Ser Ser Glu
 835 840 845
 Arg Met Leu Leu Tyr Arg Glu Leu Asp Gly Leu Thr Leu Asp Arg Asp
 850 855 860
 Val Asp Ala Phe Arg Ser Arg Leu Glu Asp Arg Phe Gly Pro Ile Pro
 865 870 875 880
 Pro Glu Thr Glu Glu Leu Leu Arg Ile Val Pro Leu Arg Arg Leu Ala
 885 890 895
 Ala Arg Leu Gly Val Glu Lys Val Phe Leu Lys Gly Gly Arg Met Thr
 900 905 910
 Leu Phe Phe Val Asn Asn Ala Glu Ser Pro Tyr Tyr Gln Ser Ala Ala
 915 920 925
 Phe Gly Lys Met Ile Asp Tyr Met Met Lys Tyr Thr Arg Arg Cys Asp
 930 935 940
 Leu Arg Glu Gln Asn Gly Arg Arg Ser Met Leu Val Lys Asp Ile Pro
 945 950 955 960
 Asn Val Glu Thr Ala Val Ser Val Leu Leu Glu Ile Val Ala Leu Pro
 965 970 975
 Val Lys Glu Lys Glu
 980

<210> 6375
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 6375
 Arg Pro Ala Arg Pro Leu Tyr Arg Cys Asp Leu Ser Gln Gln Tyr Glu
 1 5 10 15
 Ser Ile Arg Val Ala Ala Thr His Gln Ala Leu Ser His Leu Val Val
 20 25 30
 Lys Ala Gly Ser Arg Arg Arg Gly Gly Gly Met Ile Thr Val Asp Thr
 35 40 45
 Cys Gly Met Thr Asn Tyr Ser Pro Leu Ile Pro Ala Ile Lys Ala Met
 50 55 60
 Cys Asn Ala Asn Pro Gly Asp Lys Met Glu Ile Val Thr Asp Gln Val
 65 70 75 80
 Ala Ala Phe Gln Asp Leu Lys Glu Tyr Leu Ser Glu Gln Gly Ile Gly
 85 90 95
 Phe Arg Glu Ile Tyr Asp Gly Glu Arg Met Thr Leu Gln Phe Thr Ile
 100 105 110
 Leu

<210> 6376
 <211> 392
 <212> PRT

<213> B.fragilis

<400> 6376

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Leu Ile Thr Arg Met Leu Thr Gln Leu Ile Asn Ala Arg Ile Leu Thr
1           5           10           15
Pro Gln Gly Trp Met Lys Asp Gly Ser Val Leu Ile Arg Asp Asn Lys
          20           25           30
Ile Leu Glu Val Thr Asn Cys Asp Leu Ala Val Ile Gly Ala Glu Leu
          35           40           45
Ile Asp Val Lys Gly Met Tyr Val Val Pro Gly Gly Val Glu Ile His
          50           55           60
Val His Gly Gly Gly Gly Arg Asp Phe Met Glu Cys Thr Glu Asp Ala
65           70           75           80
Phe Arg Ala Ala Val His Thr His Met Lys His Gly Thr Thr Ser Ile
          85           90           95
Phe Pro Thr Leu Ser Ser Ser Thr Val Pro Met Ile Gln Gln Ala Ala
          100          105          110
Glu Thr Cys Thr Lys Leu Met Glu Glu Lys Asn Ser Pro Ile Leu Gly
          115          120          125
Leu His Leu Glu Gly His Tyr Leu Asn Met Lys Met Ala Gly Gly Gln
          130          135          140
Ile Pro Glu Asn Ile Lys Asn Pro Asp Pro Asn Glu Tyr Ile Pro Ile
145          150          155          160
Val Glu Gln Tyr His Cys Ile Lys Arg Trp Asp Ala Ala Pro Glu Leu
          165          170          175
Pro Gly Ala Met Gln Phe Gly Lys Tyr Ile Ala Ala Lys Gly Ile Leu
          180          185          190
Pro Ser Val Ala His Thr Gln Ala Glu Phe Glu Asp Ile Arg Thr Ala
          195          200          205
Tyr Glu Ala Gly Tyr Thr His Ala Thr His Phe Tyr Asn Ala Met Pro
          210          215          220
Gly Phe His Lys Arg Arg Glu Tyr Lys Tyr Glu Gly Thr Val Glu Ser
225          230          235          240
Ile Tyr Leu Leu Asp Asp Met Thr Val Glu Val Val Ala Asp Gly Ile
          245          250          255
His Val Pro Pro Thr Ile Leu Arg Leu Val Tyr Lys Ile Lys Gly Val
          260          265          270
Glu Arg Thr Cys Leu Ile Thr Asp Ala Leu Ala Cys Ala Asp Ser Asp
          275          280          285
Ser Lys Glu Ala Phe Asp Pro Arg Val Ile Ile Glu Asp Gly Val Cys
          290          295          300
Lys Leu Ala Asp His Ser Ala Leu Ala Gly Ser Val Ala Thr Met Asp
305          310          315          320
Arg Leu Ile Arg Thr Val Val Gln Lys Ala Glu Ile Pro Leu Glu Asp
          325          330          335
Ala Val Arg Met Ala Ser Glu Thr Pro Ala Arg Ile Met Gly Val Tyr
          340          345          350
Asp Arg Lys Gly Ser Leu Gln Lys Gly Lys Asp Ala Asp Ile Leu Val
          355          360          365
Leu Asp Glu Asp Leu Asn Val Arg Ala Val Trp Ala Met Gly Lys Leu
          370          375          380
Val Pro Glu Thr Asn Thr Leu Phe
385          390

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<210> 6377

<211> 196

<212> PRT

<213> B.fragilis

<400> 6377

Asn His Arg Arg Tyr Arg Glu Thr Glu Leu Arg Met Lys Lys Ala Ile
 1 5 10 15
 Tyr Ser Phe Ile Tyr Tyr His Leu Leu Gly Trp Lys Thr Asn Val Thr
 20 25 30
 Val Pro Asn Tyr Asp Lys Cys Val Ile Cys Ala Ala Pro His Thr Thr
 35 40 45
 Asn Met Asp Leu Phe Ile Gly Lys Leu Phe Tyr Gly Ala Ile Gly Arg
 50 55 60
 Lys Thr Ser Phe Met Met Lys Lys Glu Trp Phe Phe Phe Pro Leu Gly
 65 70 75 80
 Ile Leu Phe Lys Ala Val Gly Gly Ile Pro Val Asn Arg Gly Arg Lys
 85 90 95
 Ser Ser Leu Val Glu Gln Met Ala Glu Val Phe Ala Lys Arg Pro Lys
 100 105 110
 Phe His Leu Ala Ile Thr Pro Glu Gly Thr Arg Lys Arg Asn Pro Asn
 115 120 125
 Trp Lys Lys Gly Phe Tyr Tyr Ile Ala Leu Lys Ala Gln Val Pro Ile
 130 135 140
 Val Leu Ile Gly Ile Asp Tyr Asn Thr Lys Thr Val Thr Ser Thr Lys
 145 150 155 160
 Ala Ile Met Pro Ser Gly Asp Ile Glu Lys Asp Met Arg Glu Ile Lys
 165 170 175
 Leu Tyr Phe Lys Asp Phe Lys Gly Lys His Pro Glu Asn Phe Ser Ile
 180 185 190
 Gly Asp Val Glu
 195

<210> 6378

<211> 460

<212> PRT

<213> B.fragilis

<400> 6378

Asp Met Lys Arg Thr Leu Ile Gln Asn Ala Thr Ile Val Asn Glu Gly
 1 5 10 15
 Arg Ser Val Arg Gly Ser Val Val Ile Glu Gly Glu Lys Ile Ala Glu
 20 25 30
 Val Leu Glu Lys Gly Gln Lys Pro Ala Ile Pro Cys Glu Glu Thr Ile
 35 40 45
 Asn Ala Asn Gly Cys Tyr Leu Ile Pro Gly Val Ile Asp Asp His Val
 50 55 60
 His Phe Arg Asp Pro Gly Leu Thr His Lys Ala Asp Ile Ser Thr Glu
 65 70 75 80
 Ser Arg Ala Ala Ala Ala Gly Gly Val Thr Ser Ile Met Asp Met Pro
 85 90 95
 Asn Thr Asn Pro Gln Thr Thr Thr Leu Asp Ala Leu Asn Ala Lys Phe
 100 105 110
 Asp Leu Leu Ala Glu Lys Cys Ser Val Asn Tyr Ser Cys Tyr Phe Gly
 115 120 125
 Ala Thr Asn Asn Asn Tyr Thr Glu Phe Asp Lys Leu Asp Lys Asn Arg
 130 135 140
 Val Cys Gly Ile Lys Leu Phe Met Gly Ser Ser Thr Gly Asn Met Leu
 145 150 155 160
 Val Asp Lys Met Asn Ser Leu Leu Asn Ile Phe Asn Gly Thr Asp Leu
 165 170 175
 Leu Ile Ala Ala His Cys Glu Asn His Glu Thr Ile Lys Lys Asn Thr
 180 185 190
 Glu Lys Tyr Val Lys Glu Tyr Ile Glu Lys Tyr Pro His Gln Tyr Tyr

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<210> 6379
<211> 262
<212> PRT
<213> B.fragilis
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Arg	Arg	Val	Arg	Ser	Leu	Glu	Leu	Phe	Thr	Leu	Leu	Leu	Phe	Lys	Gln
1				5					10					15	
Lys	Arg	Tyr	Lys	Leu	Tyr	Met	Lys	Gln	Glu	Lys	Phe	Phe	Arg	Leu	Leu
			20					25					30		
Pro	Ile	Glu	Gly	Ala	Tyr	Asn	Ile	Arg	Asp	Leu	Gly	Gly	Tyr	Pro	Thr
		35					40					45			
Ser	Asp	His	Lys	His	Val	Lys	Trp	Lys	Thr	Phe	Ile	Arg	Ser	Gly	Asp
	50					55					60				
Leu	Asp	Lys	Leu	Thr	Glu	Ser	Asp	Leu	Asp	Tyr	Leu	Thr	Ser	Leu	His
65					70					75					80
Ile	Arg	Thr	Asp	Ile	Asp	Phe	Arg	Ser	Met	Gln	Glu	Lys	Lys	Ala	Ala
			85						90					95	
Ala	Asp	Lys	Ile	Pro	Ser	Thr	Val	Thr	Gln	Tyr	Ile	Pro	Leu	Ser	Ile
			100					105					110		
Glu	Ala	Gly	Asp	Met	Thr	Asp	Met	Ala	His	Phe	Asn	Leu	Asn	Asn	Ile
		115					120					125			
Pro	Gly	Ile	Leu	Glu	Gln	Ala	Tyr	Val	Tyr	Ile	Ile	Gln	Asn	Ala	Gln
		130				135					140				
Asp	Thr	Tyr	Arg	Glu	Phe	Phe	Arg	Ile	Val	Ser	Glu	Glu	Arg	Asn	Thr

145 150 155 160
 Pro Leu Leu Phe His Cys Ser Ala Gly Lys Asp Arg Thr Gly Ile Ala
 165 170 175
 Ala Ala Leu Leu Leu Gly Ala Leu Gly Val Asp Arg Glu Val Ile Met
 180 185 190
 Glu Asp Tyr Met Leu Ser Ala Glu Tyr Ile Lys Gly Lys Tyr Asp Ala
 195 200 205
 Ile Val Gln Ala His Pro Gly Phe Ala Pro Leu Thr Thr Val Arg Lys
 210 215 220
 Glu Tyr Leu Glu Ala Ala Phe Gln Thr Ile Asp Thr Asp Tyr Gln Gly
 225 230 235 240
 Met Asp Asn Tyr Leu Lys Asn Gln Leu Gly Val Asp Thr His Arg Leu
 245 250 255
 Arg Met Leu Tyr Thr Glu
 260

<210> 6380

<211> 161

<212> PRT

<213> B.fragilis

<400> 6380

Val Glu Arg Met Asp Ile Phe Leu Ile Ile Leu Gly Ser Ile Cys Leu
 1 5 10 15
 Leu Val Gly Leu Ala Gly Cys Ile Val Pro Met Leu Pro Gly Pro Pro
 20 25 30
 Val Ser Tyr Leu Ala Leu Val Phe Leu His Phe Thr Asp Lys Val Ser
 35 40 45
 Phe Thr Ile Pro Gln Leu Phe Phe Trp Leu Phe Ile Val Val Leu Ile
 50 55 60
 Gln Ile Leu Asp Tyr Phe Ile Pro Met Phe Gly Val Lys Arg Leu Gly
 65 70 75 80
 Gly Thr Pro Trp Gly Lys Trp Gly Cys Ile Ile Gly Thr Phe Ala Gly
 85 90 95
 Ile Phe Leu Phe Ala Pro Trp Gly Val Phe Ile Gly Pro Phe Val Gly
 100 105 110
 Ala Val Val Gly Glu Leu Leu Gly Lys Glu Thr Lys Tyr Ala Leu
 115 120 125
 Lys Ala Gly Phe Gly Ala Phe Ala Gly Phe Leu Leu Gly Thr Val Leu
 130 135 140
 Lys Val Ala Val Cys Gly Trp Phe Ile Phe Cys Phe Ile Arg Ala Leu
 145 150 155 160
 Val

<210> 6381

<211> 263

<212> PRT

<213> B.fragilis

<400> 6381

Arg Lys Ser Ile Thr Phe Val Phe Lys Phe Arg His Asn Met Gln Thr
 1 5 10 15
 Ser Asp Ser Ile Val Ile Ile Pro Thr Tyr Asn Glu Arg Glu Asn Ile
 20 25 30
 Glu Asn Ile Ile Arg Ala Val Phe Gly Leu Glu Lys Thr Phe His Ile
 35 40 45
 Leu Ile Ile Glu Asp Gly Ser Pro Asp Gly Thr Ala Ala Ile Val Lys
 50 55 60

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Thr Leu Gln Gln Glu Phe Pro Asp Arg Leu Phe Met Ile Glu Arg Lys
65          70          75          80
Gly Lys Leu Gly Leu Gly Thr Ala Tyr Ile Thr Gly Phe Lys Trp Ala
      85          90          95
Leu Glu His Ser Tyr Glu Tyr Ile Phe Glu Met Asp Ala Asp Phe Ser
      100          105          110
His Asn Pro Asn Asp Leu Pro Arg Leu Tyr Glu Ala Cys Ala Val Gln
      115          120          125
Gly Gly Asp Val Ala Ile Gly Ser Arg Tyr Val Ser Gly Val Asn Val
      130          135          140
Val Asn Trp Pro Met Gly Arg Val Leu Met Ser Tyr Phe Ala Ser Lys
145          150          155          160
Tyr Val Arg Ile Val Thr Gly Leu Pro Ile His Asp Thr Thr Ala Gly
      165          170          175
Phe Lys Cys Tyr Arg Arg Gln Val Leu Glu Thr Ile Asp Leu Asp His
      180          185          190
Ile Arg Phe Lys Gly Tyr Ala Phe Gln Ile Glu Met Lys Phe Thr Ala
      195          200          205
Tyr Lys Cys Gly Phe Lys Ile Ile Glu Val Pro Val Ile Phe Ile Asn
      210          215          220
Arg Glu Leu Gly Thr Ser Lys Met Asn Ser Ser Ile Phe Gly Glu Ala
225          230          235          240
Val Phe Gly Val Ile Lys Leu Lys Val Asn Ser Trp Phe His Thr Phe
      245          250          255
Pro Gln Lys Thr Lys Met Asn
      260

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<210> 6382

<211> 689

<212> PRT

<213> B.fragilis

<400> 6382

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Leu Ile Val Phe Ile Tyr Ile Cys Ser Glu Phe Pro Ile Thr Thr Lys
1          5          10          15
Thr Gln Ser Asn Leu Ile Asn Asn Lys Leu Met Lys Thr Asn Leu Ser
      20          25          30
Ser Gln Ile Thr Leu Asn Arg Val Ser Pro Arg Tyr Tyr Arg Pro Glu
      35          40          45
Asn Ala Phe Glu Arg Ser Val Leu Thr Arg Leu Glu Lys Ile Pro Thr
      50          55          60
Asp Ile Tyr Glu Ser Val Glu Glu Gly Ala Asn His Ile Ala Cys Glu
65          70          75          80
Ile Ala Gln Val Ile Arg Asp Lys Gln Lys Ala Gly Arg Phe Cys Val
      85          90          95
Leu Ala Leu Pro Gly Gly Asn Ser Pro Arg Ser Val Tyr Ala Glu Leu
      100          105          110
Ile Arg Met His Lys Glu Glu Gly Leu Ser Phe Arg Asn Val Ile Val
      115          120          125
Phe Asn Met Tyr Glu Tyr Tyr Pro Leu Ser Gln Asp Ala Ile Asn Ser
      130          135          140
Asn Phe Asn Ala Leu Lys Glu Met Phe Leu Asp His Val Asp Ile Asp
145          150          155          160
Lys Gln Asn Ile Phe Thr Pro Asp Gly Thr Ile Ala Lys Asp Thr Ile
      165          170          175
Phe Glu Tyr Cys Arg Leu Tyr Glu Gln Arg Ile Glu Ser Phe Gly Gly
      180          185          190
Ile Asp Ile Ala Leu Leu Gly Ile Gly Arg Val Gly Asn Ile Ala Phe
195          200          205

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Asn Glu Pro Gly Ser Arg Leu Asn Ser Thr Thr Arg Leu Ile Leu Leu
 210 215 220
 Asp Ser Gly Ser Arg Asn Glu Ala Ser Lys Ile Phe Gly Thr Ile Asp
 225 230 235 240
 Asn Thr Pro Ile Ser Ser Ile Thr Met Gly Val Ala Thr Ile Leu Ala
 245 250 255
 Ala Lys Lys Ile Tyr Leu Leu Ala Trp Gly Glu Glu Lys Ala His Met
 260 265 270
 Val Lys Glu Cys Val Glu Gly Asn Val Thr Asp Thr Ile Pro Ala Ser
 275 280 285
 Tyr Leu Gln Thr His Asn Asn Ala His Val Ala Ile Asp Leu Ser Ala
 290 295 300
 Ala Ser Asn Leu Thr Arg Ile Gln Arg Pro Trp Leu Val Thr Ser Cys
 305 310 315 320
 Glu Trp Asn Asp Lys Leu Ile Arg Ser Ala Ile Val Trp Leu Cys Gln
 325 330 335
 Leu Thr Gly Lys Pro Ile Leu Lys Leu Thr Asn Lys Asp Tyr Asn Glu
 340 345 350
 Asn Gly Leu Ser Glu Leu Leu Ala Leu Phe Gly Ser Ala Tyr Asn Val
 355 360 365
 Asn Ile Lys Ile Phe Asn Asp Leu Gln His Thr Ile Thr Gly Trp Pro
 370 375 380
 Gly Gly Lys Pro Lys Ala Asp Asp Thr Tyr Arg Pro Glu Arg Ala Lys
 385 390 395 400
 Pro Tyr Pro Lys Arg Val Val Val Phe Ser Pro His Pro Asp Asp Asp
 405 410 415
 Val Ile Ser Met Gly Gly Thr Ile Arg Arg Leu Val Glu Gln Lys His
 420 425 430
 Glu Val His Val Ala Tyr Gln Thr Ser Gly Asn Ile Ala Val Gly Asp
 435 440 445
 Glu Glu Val Val Arg Phe Met His Phe Ile Asn Gly Phe Asn Gln Ile
 450 455 460
 Phe Ile Asn Ser Glu Asp Gln Val Ile Ser Glu Lys Tyr Ala Glu Ile
 465 470 475 480
 Arg Lys Phe Leu Lys Asp Lys Lys Asp Gly Asp Met Asp Thr Arg Asp
 485 490 495
 Ile Leu Thr Ile Lys Gly Leu Ile Arg Arg Gly Glu Ala Arg Thr Ala
 500 505 510
 Cys Thr Tyr Asn Asn Ile Pro Leu Glu Arg Cys His Phe Leu Asp Leu
 515 520 525
 Pro Phe Tyr Glu Thr Gly Lys Ile Gln Lys Asn Pro Ile Ser Glu Ala
 530 535 540
 Asp Val Glu Ile Val Arg Asn Leu Leu Arg Glu Val Lys Pro His Gln
 545 550 555 560
 Ile Phe Val Ala Gly Asp Leu Ala Asp Pro His Gly Thr His Arg Val
 565 570 575
 Cys Thr Asp Ala Val Phe Ala Ala Val Asp Leu Glu Lys Glu Glu Gly
 580 585 590
 Ala Glu Trp Leu Lys Asp Cys Arg Ile Trp Met Tyr Arg Gly Ala Trp
 595 600 605
 Ala Glu Trp Glu Ile Glu Asn Ile Glu Met Ala Val Pro Ile Ser Pro
 610 615 620
 Glu Glu Leu Arg Ala Lys Arg Asn Ser Ile Leu Lys His Gln Ser Gln
 625 630 635 640
 Met Glu Ser Ala Pro Phe Leu Gly Asn Asp Glu Arg Leu Phe Trp Gln
 645 650 655
 Arg Ser Glu Asp Arg Asn Arg Gly Thr Ala Ala Leu Tyr Asp Ser Leu
 660 665 670
 Gly Leu Ala Ser Tyr Glu Ala Met Glu Ala Phe Val Glu Tyr Ile Pro

675

680

685

Leu

<210> 6383

<211> 204

<212> PRT

<213> B.fragilis

<400> 6383

Trp	Ala	Lys	Ile	Ala	Phe	Met	Thr	Ile	Thr	Glu	Leu	Gln	His	Gln	Tyr
1				5					10					15	
Ala	Gly	His	Pro	Asn	Val	Glu	Ala	Leu	Asn	Lys	Leu	Leu	Gly	Glu	Pro
			20					25					30		
Ala	Val	Arg	His	Ile	Tyr	Cys	Gly	Gly	Leu	Tyr	Ala	Ser	Ala	Ala	Ser
			35					40					45		
Leu	Phe	Ala	Ser	Ala	Leu	Val	Glu	Lys	Ser	Pro	Cys	Pro	Phe	Val	Phe
			50					55			60				
Ile	Leu	Gly	Asp	Leu	Glu	Glu	Ala	Gly	Tyr	Phe	Tyr	His	Asp	Leu	Thr
65					70					75					80
Gln	Val	Leu	Gly	Thr	Glu	Arg	Ile	Leu	Phe	Phe	Pro	Ser	Ser	Phe	Arg
				85					90					95	
Arg	Ser	Val	Lys	Tyr	Gly	Gln	Lys	Asp	Ala	Ala	Asn	Glu	Ile	Leu	Arg
			100					105						110	
Thr	Glu	Val	Leu	Ser	Arg	Leu	Gln	Lys	Gly	Glu	Glu	Gly	Leu	Cys	Ile
			115					120					125		
Val	Thr	Tyr	Pro	Asp	Ala	Leu	Ala	Glu	Lys	Val	Val	Ser	Arg	Gln	Glu
			130				135					140			
Leu	Ser	Glu	Asn	Thr	Leu	Lys	Leu	His	Val	Gly	Glu	Arg	Val	Asp	Thr
145					150					155					160
Gly	Phe	Ile	Thr	Asp	Val	Leu	His	Ser	Tyr	Gly	Phe	Glu	Tyr	Val	Asp
				165					170					175	
Tyr	Val	Tyr	Glu	Pro	Gly	Pro	Val	Cys	Arg	Ser	Trp	Lys	Tyr	Tyr	Arg
			180					185					190		
Arg	Val	Phe	Ile	Phe	Val	Arg	Val	Ser	Leu	Ser	Tyr				
			195				200								

<210> 6384

<211> 65

<212> PRT

<213> B.fragilis

<400> 6384

Leu	Tyr	Lys	Ile	Gly	Ser	Cys	Ser	Thr	Leu	Gln	Met	Ile	Ile	Arg	Ala
1				5					10					15	
Gln	Ile	Ile	Arg	Leu	Glu	Asp	Ser	Ile	Met	Lys	Leu	Glu	Lys	Tyr	Tyr
			20					25					30		
Arg	Thr	Lys	Thr	Ala	Gly	Leu	Glu	Gly	Gln	Pro	Asn	Lys	Lys	Lys	Asn
			35					40					45		
Lys	Arg	Met	Ala	Asp	Ile	Val	Ala	Val	Asn	Val	Lys	Tyr	Val	Leu	Phe
			50				55					60			
Gly															
65															

<210> 6385

<211> 642

<212> PRT

<213> B.fragilis

<400> 6385

Leu Tyr Ala Val Gly Ser Ser Ser Ala Leu Ser Val Pro Ser Tyr Ser
 1 5 10 15
 Glu Ile Ile Arg Ile Phe Val Pro Met Lys Glu Tyr Arg Leu Thr Asp
 20 25 30
 Trp Leu Pro Thr Thr Lys Lys Glu Val Glu Leu Arg Gly Trp Asp Glu
 35 40 45
 Leu Asp Val Ile Leu Phe Ser Gly Asp Ala Tyr Val Asp His Pro Ser
 50 55 60
 Phe Gly Ala Ala Val Ile Gly Arg Ile Leu Glu Ala Glu Gly Leu Arg
 65 70 75 80
 Val Ala Ile Val Pro Gln Pro Asn Trp Arg Asp Asp Leu Arg Asp Phe
 85 90 95
 Arg Lys Leu Gly Arg Pro Arg Leu Phe Phe Gly Ile Ser Ala Gly Cys
 100 105 110
 Met Asp Ser Met Val Asn Lys Tyr Thr Ala Asn Lys Arg Leu Arg Ser
 115 120 125
 Asp Asp Ala Tyr Thr Pro Asp Gly Arg Pro Asp Met Arg Pro Glu Tyr
 130 135 140
 Pro Ser Ile Val Tyr Thr Gln Ile Leu Lys Lys Leu Tyr Pro Asp Val
 145 150 155 160
 Pro Val Val Leu Gly Gly Ile Glu Ala Ser Met Arg Arg Leu Ser His
 165 170 175
 Tyr Asp Tyr Trp Gln Asp Arg Leu Lys Lys Ser Ile Leu Cys Glu Ser
 180 185 190
 Gly Ala Asp Met Leu Ile Tyr Gly Met Gly Glu Lys Pro Ile Cys Glu
 195 200 205
 Leu Val Arg Arg Leu Thr Ala Leu Cys Asp Asn Gln Asp Gly Val Ile
 210 215 220
 Ser Ser Ser Asp Ile His Ser Pro Ala Leu Ser Ser Ile Pro Gln Thr
 225 230 235 240
 Ala Tyr Leu Thr Arg Lys Tyr Glu Ser Asp Glu Asn Asp Ile Thr Leu
 245 250 255
 Tyr Ser His Glu Glu Cys Leu Ala Asp Lys Lys Lys Gln Ala Thr Asn
 260 265 270
 Phe Arg His Ile Glu Glu Glu Ser Asn Lys Tyr Ala Ala Arg Ile
 275 280 285
 Val Gln Ala Val Asp Gly Lys Thr Val Val Val Asn Pro Pro Tyr Pro
 290 295 300
 Pro Met Thr Glu Lys Glu Leu Asp Arg Ser Phe Asp Leu Pro Tyr Thr
 305 310 315 320
 Arg Leu Pro His Pro Lys Tyr Lys Gly Lys Arg Ile Pro Ala Tyr Asp
 325 330 335
 Met Ile Lys Phe Ser Val Asn Ile His Arg Gly Cys Phe Gly Gly Cys
 340 345 350
 Ala Phe Cys Thr Ile Ser Ala His Gln Gly Lys Phe Ile Val Ser Arg
 355 360 365
 Ser Lys Glu Ser Ile Leu Lys Glu Val Lys Glu Val Val Gln Leu Pro
 370 375 380
 Asp Phe Lys Gly Asn Leu Ser Asp Leu Gly Gly Pro Ser Ala Asn Met
 385 390 395 400
 Tyr Lys Met Gly Gly Lys Asp Leu Ser Leu Cys Lys Arg Cys Lys Arg
 405 410 415
 Pro Ser Cys Ile His Pro Lys Val Cys Pro Asn Leu Asn Thr Asp His
 420 425 430
 Arg Pro Leu Asp Ile Tyr Tyr Ala Val Asp Ser Leu Pro Glu Ile
 435 440 445
 Lys Arg Ser Phe Ile Gly Ser Gly Val Arg Tyr Asp Leu Leu Leu His
 450 455 460

Gln Ser Lys Asp Ala Thr Val Asn Lys Ile Thr Ala Glu Tyr Thr Arg
 465 470 475 480
 Glu Leu Ile Ala Arg His Val Ser Gly Arg Leu Lys Val Ala Pro Glu
 485 490 495
 His Thr Ser Asp Arg Val Leu Ser Ile Met Arg Lys Pro Ala Phe Ser
 500 505 510
 Gln Phe Gly Glu Phe Lys Lys Ile Phe Asp Arg Ile Asn Arg Glu Leu
 515 520 525
 Gly Leu Arg Gln Gln Leu Ile Pro Tyr Phe Ile Ser Ser His Pro Gly
 530 535 540
 Cys Lys Glu Glu Asp Met Ala Glu Leu Ala Val Ile Thr Lys Gln Leu
 545 550 555 560
 Asp Phe His Leu Glu Gln Val Gln Asp Phe Thr Pro Thr Pro Met Thr
 565 570 575
 Val Ala Thr Glu Ala Trp Tyr Thr Gly Phe His Pro Tyr Thr Leu Glu
 580 585 590
 Pro Val Phe Ser Ala Lys Thr Gln Arg Glu Lys Leu Ala Gln Arg Gln
 595 600 605
 Phe Phe Phe Trp Tyr Lys Pro Glu Glu Arg Arg Asn Ile Ile Asn Glu
 610 615 620
 Leu Arg Arg Ile Gly Arg Ala Asp Leu Ile Asp Lys Leu Tyr Gly Lys
 625 630 635 640
 Arg Lys

<210> 6386

<211> 226

<212> PRT

<213> B.fragilis

<400> 6386

Leu Pro Val Leu Lys Gln Ser Asn Met Glu Lys His Asn Pro Ser Ser
 1 5 10 15
 Phe Thr Val Asp Ser Ser Ser Pro Ala His Arg Ser Ser Phe Ala Val
 20 25 30
 His Asp Leu Thr Pro Tyr Ile Asn Trp Ile Tyr Phe Phe His Ala Trp
 35 40 45
 Gly Phe Gln Pro Arg Tyr Ala Ala Ile Ala Asn Ile His Gly Cys Asp
 50 55 60
 Ser Cys Arg Ala Ile Trp Leu Thr Thr Phe Pro Glu Glu Glu Arg Ser
 65 70 75 80
 Lys Ala Ser Glu Ala Met Gln Leu Tyr Lys Glu Ala Asn Arg Met Leu
 85 90 95
 Asn Glu Leu Asp Arg Asn Phe Glu Val Lys Thr Ile Phe Lys Leu Cys
 100 105 110
 Pro Ala Asn Ala Asp Gly Asp Asn Leu Ile Ile Asn Gly Ile Thr Phe
 115 120 125
 Pro Leu Leu Arg Gln Gln Val Lys Lys Lys Glu Asn Glu Pro Phe Leu
 130 135 140
 Cys Leu Ser Asp Phe Val Arg Pro Leu Ser Ser Gly Ile Thr Asp Val
 145 150 155 160
 Val Gly Ala Phe Ala Ser Ser Ile Asp Ala Asp Met Glu Gly Leu Tyr
 165 170 175
 Glu Lys Asp Pro Tyr Lys His Leu Leu Val Gln Thr Leu Ser Asp Arg
 180 185 190
 Leu Ala Glu Ala Ala Thr Glu Lys Met His Glu Tyr Val Arg Lys Glu
 195 200 205
 Ala Trp Gly Tyr Ala Lys Asp Glu Asn Leu Ser Ile Pro Asp Val Phe
 210 215 220

Asn Thr
225

<210> 6387
<211> 135
<212> PRT
<213> B.fragilis

<400> 6387
Ala Val Gly Ser Arg Arg Gln Cys Leu Pro Val Ser Lys Val Thr Leu
1 5 10 15
His Arg Tyr Ile His Phe Ala Phe Ile Glu Asp Ala Ala Leu Arg Thr
20 25 30
Ile Thr Glu Glu Gln His Ala Val Gly Gly Asn Ser Asn Ala Tyr His
35 40 45
Arg Ile Asn Val Gly Ile Leu Ile Val Asp Ser Phe His Ser Gln Thr
50 55 60
Phe Ser Asp Tyr Ile Thr Thr Gly Ile Asp Asp Gly Asp Ile Phe Arg
65 70 75 80
Met Arg His Tyr Met Ile Lys Val Thr Asp Thr Tyr Leu Ile Glu Gln
85 90 95
Asp Ala Glu Asn Lys Tyr Ser Arg Arg Gln Tyr Val Ile Lys Tyr Lys
100 105 110
Tyr Gly Ser Pro Gly Glu Gly Met Cys Tyr Gln Asn Arg Gln Ala Asp
115 120 125
Asp Ser Lys Met Glu Asn Thr
130 135

<210> 6388
<211> 263
<212> PRT
<213> B.fragilis

<400> 6388
Ser Leu Pro Ser Leu Arg Asn Asn Lys Lys Asn Lys Lys Ile Gly Arg
1 5 10 15
Met Val Ser Ala Asn Pro Tyr Asn Arg Tyr Ile Cys Phe Gln Ile Arg
20 25 30
Arg Leu Arg Tyr Met Glu Thr Met Phe Asp Thr Leu Leu Gln Leu Pro
35 40 45
Leu Phe Gln Gly Leu Cys His Glu Asp Phe Thr Asn Ile Leu Glu Lys
50 55 60
Val Lys Leu His Phe Thr Arg His Lys Pro Gly Glu Pro Leu Ile Lys
65 70 75 80
Ser Gly Glu Val Cys Asp Gln Leu Leu Phe Leu Leu Lys Gly Arg Leu
85 90 95
Ser Ser Val Thr Val Ser Glu Asp Asp Thr Leu Thr Val Ile Glu Tyr
100 105 110
Phe Glu Ala Pro Ala Val Leu Glu Pro Tyr Ser Met Phe Gly Met Asn
115 120 125
Thr Arg Tyr Ile Ser Ser Tyr Ile Pro His Asn Glu Ala Gln Met
130 135 140
Val Ser Ile Ser Lys Ser Phe Val Met Gly Glu Leu Phe Lys Tyr Asp
145 150 155 160
Ile Phe Arg Leu Asn Tyr Met Asn Ile Val Ser Asn Arg Ala Gln Asn
165 170 175
Leu Tyr Thr Arg Leu Trp Asp Lys Ala Pro Lys Asp Ile Glu Asp Lys
180 185 190
Ile Ile Arg Phe Ile Leu Gly His Ile Glu Arg Met Thr Gly Glu Lys

195	200	205
Leu Phe Lys Val Lys Met Asp Asp Leu Ala Arg Met Leu Asp Asp Thr		
210	215	220
Arg Leu Asn Val Ser Lys Ala Leu Asn Gly Leu Gln Glu Leu Asn Leu		
225	230	235
Leu Glu Leu His Arg Lys Glu Ile Arg Ile Pro Asp Leu Ser Leu Leu		
	245	250
		255
Thr Glu Trp Asn Glu Lys Arg		
260		

<210> 6389

<211> 417

<212> PRT

<213> B.fragilis

<400> 6389

Leu Ile Trp Phe His Tyr Glu Thr Asp Glu Leu Tyr Ile Cys Arg Leu		
1	5	10
Asn Leu Lys Ile Glu Pro Tyr Met Lys Tyr Asn Phe Asp Glu Val Ile		
	20	25
		30
Glu Arg Arg Gly Thr Asp Ser Val Lys Tyr Asp Ala Val Ser Glu Arg		
	35	40
		45
Trp Gly Arg Ser Asp Leu Leu Pro Met Trp Val Ala Asp Met Asp Phe		
	50	55
		60
Arg Thr Pro Pro Phe Val Ile Glu Ala Ile Arg Arg Arg Leu Asp His		
	65	70
		75
		80
Glu Val Leu Gly Tyr Thr Phe Ala Cys Glu Ala Trp Tyr Thr Ser Ile		
	85	90
		95
Ile Asn Trp Gln Lys Glu Arg His Gly Trp Asn Val Thr Arg Glu Met		
	100	105
		110
Leu Thr Phe Thr Pro Gly Ile Val Arg Gly Leu Ala Phe Ala Leu Gln		
	115	120
		125
Cys Phe Thr Ala Pro Gly Asp Lys Val Met Val Met Pro Pro Val Tyr		
	130	135
		140
His Pro Phe Phe Leu Val Thr Glu His Asn His Arg Glu Val Val Tyr		
	145	150
		155
		160
Ser Pro Leu Leu Leu Lys Asp Gly Gln Tyr Gln Ile Asp Phe Glu Arg		
	165	170
		175
Phe Arg Ala Asp Val Lys Gly Cys Lys Met Leu Ile Leu Ser Asn Pro		
	180	185
		190
His Asn Pro Gly Gly Arg Val Trp Thr Arg Glu Glu Leu Ala Glu Ile		
	195	200
		205
Ala Glu Ile Cys Phe Asp Asn Gln Val Leu Val Ile Ser Asp Glu Ile		
	210	215
		220
His Ala Asp Leu Thr Leu Pro Gly Tyr Thr His Pro Thr Phe Ala Leu		
	225	230
		235
		240
Val Ser Glu Lys Ala Arg Arg Asn Ser Leu Val Phe Met Ser Pro Ser		
	245	250
		255
Lys Ala Phe Asn Met Pro Gly Leu Ala Ser Ser Tyr Cys Ile Ile Glu		
	260	265
		270
Asp Glu Ala Ile Arg His Arg Phe Gln Thr Tyr Met Glu Ala Ser Glu		
	275	280
		285
Phe Ser Glu Gly His Leu Phe Ala Tyr Leu Gly Val Ala Ala Ala Tyr		
	290	295
		300
Ser Asn Gly Thr Glu Trp Leu Asp Gln Ala Leu Glu Tyr Ile Gln Glu		
	305	310
		315
		320
Asn Ile Asp Phe Thr Asp Glu Tyr Leu Lys Thr His Ile Pro Ala Ile		
	325	330
		335
Arg Met Ile Arg Pro Gln Ala Ser Tyr Leu Ile Phe Leu Asp Cys Arg		

															325																330																335	
Val	Pro	Gln	Phe	Asp	Val	Arg	Leu	Ala	Val	Lys	Asn	Ala	Met	Phe	Arg																																	
															340																345																350	
Tyr	Pro	Ser	Leu	Pro	Ala	Gly	Val	Asp	Gln	Ile	Asn	Ile	Asp	Ala	Gln																																	
															355																360																365	
Val	Arg	Asn	Pro	Gly	Gly	Asn	Ile	Asp	Leu	Thr	Glu	Ile	Ser	Ile	His																																	
															370																375																380	
Pro	Phe	Ser	Phe	Arg	Leu	Ala	Glu	Asn	Pro	Phe	Ser	Leu	Thr	Ala	Asp																																	
385																390																395																400
Ile	Lys	Thr	Pro	Val	Ser	Asp	Pro	Asp	Phe	Thr	Ala	Glu	Ala	Lys	Gly																																	
															405																410																415	
Val	Leu	Asn	Leu	Gly	Met	Ile	Lys	Gln	Val	Tyr	Pro	Leu	Asp	Asp	Met																																	
															420																425																430	
Glu	Leu	Asn	Gly	Thr	Val	Arg	Ala	Asp	Met	Thr	Met	Ala	Gly	His	Leu																																	
															435																440																445	
Ser	Tyr	Ile	Glu	Lys	Glu	Gln	Tyr	Asp	Arg	Phe	Ser	Ala	Ser	Gly	Thr																																	
															450																455																460	
Ile	Ala	Leu	Ser	Asp	Met	Asn	Leu	Lys	Met	Lys	Glu	Met	Pro	Asp	Ile																																	
465																470																475																480
Glu	Ile	Lys	Lys	Ser	Leu	Phe	Thr	Phe	Thr	Pro	Lys	Tyr	Leu	Gln	Leu																																	
															485																490																495	
Ser	Glu	Thr	Thr	Val	Ala	Ile	Gly	Lys	Asn	Asp	Leu	Thr	Ala	Asp	Cys																																	
															500																505																510	
Arg	Phe	Glu	Asn	Tyr	Met	Gly	Tyr	Ala	Leu	Lys	Gly	Gly	Thr	Leu	Lys																																	
															515																520																525	
Gly	Thr	Leu	Asn	Val	Arg	Ser	Asn	His	Leu	Asn	Leu	Asn	Asp	Phe	Met																																	
															530																535																540	
Thr	Ala	Thr	Thr	Asp	Ser	Ala	Ala	Gln	Thr	Ser	Gln	Ala	Ser	Ser	Thr																																	
545																550																555																560
Glu	Glu	Thr	Ala	Ser	Met	Ile	Glu	Val	Pro	Gln	Asn	Ile	Asp	Phe	Gln																																	
															565																570																575	
Met	Asp	Ala	Gly	Leu	Lys	Glu	Val	Leu	Phe	Asp	Lys	Met	Thr	Phe	Thr																																	
															580																585																590	
Asn	Met	Asn	Gly	Lys	Leu	Ile	Val	Lys	Asp	Gly	Lys	Val	Asp	Met	Thr																																	
															595																600																605	
Asn	Leu	Ser	Met	Asn	Thr	Met	Gly	Gly	Ser	Val	Val	Met	Asn	Gly	Tyr																																	
															610																615																620	
Tyr	Ser	Thr	Ala	Asp	Pro	Lys	Lys	Pro	Glu	Met	Asn	Ala	Gly	Phe	Arg																																	
625																630																635																640
Met	Glu	Asn	Ile	Gly	Phe	Ala	Gln	Ala	Tyr	Lys	Ala	Leu	Asp	Met	Val																																	
															645																650																655	
Gln	Gln	Met	Ala	Pro	Ile	Phe	Glu	Asn	Leu	Lys	Gly	Asn	Phe	Ser	Gly																																	
															660																665																670	
Asn	Met	His	Ile	Arg	Thr	Leu	Leu	Asp	Asn	Gln	Met	Ser	Pro	Val	Met																																	
															675																680																685	
Asp	Thr	Met	Gln	Gly	Asn	Gly	Ser	Leu	Ser	Thr	Gln	Asp	Leu	Ser	Leu																																	
															690																695																700	
Ser	Gly	Val	Lys	Val	Ile	Asp	Gln	Ile	Ala	Glu	Ala	Val	Lys	Lys	Pro																																	
705																710																715																720
Glu	Leu	Lys	Glu	Met	Lys	Val																																										

Val Ser Leu Asp Thr Lys Ser Met Thr Asn Gln Ala Val Glu Ala Val
 805 810 815
 Thr Asp Lys Ala Ile Ser Glu Ile Gly Lys Lys Leu Gly Leu Asp Ser
 820 825 830
 Ala Thr Thr Ala Asn Lys Asp Ser Val Lys Glu Lys Val Lys Glu Lys
 835 840 845
 Ala Val Glu Lys Ala Leu Asp Phe Leu Lys Lys Lys Ile Lys
 850 855 860

<210> 6391

<211> 368

<212> PRT

<213> B.fragilis

<400> 6391

Met Glu Lys Thr Lys Arg Asp Ser Arg His Ile Asp Pro Leu Lys Asp
 1 5 10 15
 Glu Glu Lys Phe Phe Gln Trp Leu Lys Phe Lys Ser Val Arg Met Asn
 20 25 30
 Gln Glu His Leu Ser Lys Asp Asp Tyr Glu Arg Leu Arg Gln Arg Ile
 35 40 45
 His Val Ser Leu Arg Met Leu Arg Arg Lys Arg Thr Val Arg Arg Val
 50 55 60
 Ala Tyr Tyr Gly Val Ser Val Cys Val Ile Ile Ala Leu Gly Ile Val
 65 70 75 80
 Ala Tyr Leu Asn His Tyr Glu Arg Val Glu Pro Val Pro Ser Val Val
 85 90 95
 Glu Lys Lys Ala Glu Ile Val Trp Gln Pro Leu Lys Ser Glu Asp Ile
 100 105 110
 Arg Leu Val Ser Gly Asp Ser Ile Thr Ser Phe Arg Gln Asn Val Gln
 115 120 125
 Leu Leu Leu Ser Lys Asp Gly Ser Ala Met Val Tyr His Pro Asn Ser
 130 135 140
 Gly Gln Lys Arg Ile Arg Met Glu Gln Asp Glu Val Asn Glu Leu Val
 145 150 155 160
 Val Pro Tyr Gly Lys Arg Ser Lys Val Lys Leu Glu Asp Gly Thr Glu
 165 170 175
 Ile Trp Leu Asn Ser Gly Ser Val Leu Lys Phe Pro Thr His Phe Ser
 180 185 190
 Gly Glu Lys Arg Glu Val Ser Leu Lys Gly Glu Met Tyr Ala Glu Val
 195 200 205
 Thr Ala Asp Ser Lys Lys Pro Phe Ile Val His Thr Ala His Phe Asp
 210 215 220
 Ile Gln Val Tyr Gly Thr Arg Phe Asn Ile Ser Ala Tyr Glu Asp Glu
 225 230 235 240
 Pro Thr Pro Ser Cys Val Leu Val Asp Gly Ile Val Gly Phe Arg Pro
 245 250 255
 Glu Ser Gly Pro Glu Ile Arg Met Lys Thr Asn Glu Lys Val Leu Tyr
 260 265 270
 Asp Gly Lys Arg Phe Glu Lys Arg Lys Val Ser Ala Ser Arg Tyr Thr
 275 280 285
 Cys Trp Lys Glu Gly Tyr Leu Glu Leu Asp Asp Ala Asn Ile Met Asp
 290 295 300
 Val Leu Asn Arg Ile Gly Arg Tyr Tyr Asn Leu Ser Phe Ser Phe Gly
 305 310 315 320
 Asp Lys Lys Arg Leu Thr Gly Arg Lys Cys Ser Gly Lys Ile Tyr Leu
 325 330 335
 Ser Asp Asn Ile Asp Asn Val Leu Thr Thr Ile Ser Leu Leu Tyr Ser
 340 345 350

Thr Asp Tyr Arg Lys Glu Glu Arg Thr Ile Phe Ile Ser Glu Asn Pro
 355 360 365

<210> 6392
 <211> 313
 <212> PRT
 <213> B.fragilis

<400> 6392
 Tyr Ser Met Thr Lys Pro Ala Pro Thr Pro Leu Tyr Asn Glu Phe Thr
 1 5 10 15
 Phe Phe Leu Lys Lys Tyr Phe Pro Tyr Lys Val Gln Lys Ile Ser Leu
 20 25 30
 Asn Ala Gly Phe Thr Cys Pro Asn Arg Asp Gly Thr Lys Gly Leu Gly
 35 40 45
 Gly Cys Thr Tyr Cys Asn Asn Gln Thr Phe Asn Pro Glu Tyr Cys Lys
 50 55 60
 Thr Glu Lys Ser Val Thr Arg Gln Leu Glu Glu Gly Lys Gln Phe Phe
 65 70 75 80
 Ala His Lys Tyr Pro Asp Met Lys Tyr Leu Ala Tyr Phe Gln Ala Tyr
 85 90 95
 Thr Asn Thr Tyr Ala Glu Leu Glu Gly Leu Lys Gly Lys Tyr Glu Glu
 100 105 110
 Ala Leu Ser Val Asp Gly Val Val Gly Leu Val Ile Gly Thr Arg Pro
 115 120 125
 Asp Cys Met Pro Asp Pro Leu Leu Arg Tyr Leu Glu Glu Leu Asn Lys
 130 135 140
 His Thr Phe Leu Leu Val Glu Tyr Gly Ile Glu Thr Thr Arg Asp Val
 145 150 155 160
 Thr Leu Lys Arg Ile Asn Arg Gly His Thr Tyr Ala Asp Thr Val Glu
 165 170 175
 Thr Val Asn Arg Thr Ala Ala Cys Gly Ile Leu Thr Gly Gly His Val
 180 185 190
 Ile Leu Gly Leu Pro Gly Glu Thr His Asp Glu Ile Ile Ala Gln Ala
 195 200 205
 Ala Glu Leu Ser Arg Leu Pro Leu Thr Thr Leu Lys Met His Gln Leu
 210 215 220
 Gln Leu Ile Arg Gly Thr Lys Met Ala Arg Glu Phe Glu Cys Arg Pro
 225 230 235 240
 Glu Asp Phe His Leu Phe Ser Val Asp Glu Tyr Ile Asp Leu Val Ile
 245 250 255
 Asp Tyr Val Glu His Leu Arg Pro Asp Leu Ile Leu Glu Arg Phe Val
 260 265 270
 Ser Gln Ser Pro Lys Glu Leu Leu Ile Ala Pro Asp Trp Gly Leu Lys
 275 280 285
 Asn Tyr Glu Phe Thr Ala Arg Val Gln Lys Arg Met Lys Glu Arg Gly
 290 295 300
 Ala Tyr Gln Gly Lys Ala Tyr Leu Val
 305 310

<210> 6393
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 6393
 Lys Gln Tyr Tyr Met Gly Asn Asp Lys Arg Val Arg Lys Pro Glu Trp
 1 5 10 15
 Leu Lys Ile Ser Ile Gly Ala Asn Glu Arg Tyr Thr Glu Thr Lys Arg

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      20              25              30
Ile Val Glu Ser His Cys Leu His Thr Ile Cys Ser Ser Gly Arg Cys
      35              40              45
Pro Asn Met Gly Glu Cys Trp Gly Lys Gly Thr Ala Thr Phe Met Ile
      50              55              60
Ala Gly Asp Ile Cys Thr Arg Ser Cys Lys Phe Cys Asn Thr Gln Thr
      65              70              75              80
Gly Arg Pro Leu Pro Leu Asp Pro Asp Glu Pro Ala His Val Ala Glu
      85              90              95
Ser Ile Ala Leu Met Lys Leu Ser His Ala Val Ile Thr Ser Val Asp
      100             105             110
Arg Asp Asp Leu Pro Asp Leu Gly Ala Ala His Trp Ala Gln Thr Ile
      115             120             125
Arg Glu Ile Lys Arg Leu Asn Pro Glu Thr Thr Thr Glu Val Leu Ile
      130             135             140
Pro Asp Phe Gln Gly Arg Lys Glu Leu Ile Asp Gln Val Ile Lys Ala
      145             150             155             160
Cys Pro Glu Ile Ile Ser His Asn Met Glu Thr Val Lys Arg Ile Ser
      165             170             175
Pro Gln Val Arg Ser Ala Ala Asn Tyr His Thr Ser Leu Glu Val Ile
      180             185             190
Arg Gln Ile Ala Glu Ser Gly Ile Thr Ala Lys Ser Gly Ile Met Val
      195             200             205
Gly Leu Gly Glu Thr Pro Ala Glu Val Glu Glu Leu Met Asp Asp Leu
      210             215             220
Ile Ser Val Gly Cys Lys Ile Leu Thr Ile Gly Gln Tyr Leu Gln Pro
      225             230             235             240
Thr His Lys His Phe Pro Val Ala Ala Tyr Ile Thr Pro Glu Gln Phe
      245             250             255
Ala Val Tyr Lys Glu Thr Gly Leu Lys Lys Gly Phe Glu Gln Val Glu
      260             265             270
Ser Ala Pro Leu Val Arg Ser Ser Tyr His Ala Glu Lys His Ile Arg
      275             280             285
Phe Asn Asn Lys
      290

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<210> 6394

<211> 149

<212> PRT

<213> B.fragilis

<400> 6394

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Gln Leu Glu Gln Ser Met Lys Arg Glu Arg Ile Val Arg Thr Glu Asn
1              5              10              15
Ile Asp Arg Gln Arg Ile Lys Tyr Arg Val Leu Phe Gly Phe Ile Phe
      20              25              30
Ile Met Cys Cys Asn Gly Ala Ala Leu Pro Ser Glu Asp Gly Lys Met
      35              40              45
Pro Asp Trp Lys Phe Ser Phe Ser Leu Lys Arg Ile Pro Met Ile Arg
      50              55              60
Ile Phe Asp Glu Ile Glu Gln Lys Ser Asp Phe Val Phe Ala Trp Ser
      65              70              75              80
Cys Asp Ile Asp Asn Glu Ile His Glu Glu Ile Ser Ile Cys Val Thr
      85              90              95
Glu Glu Pro Ile Gln Lys Val Met Glu Lys Val Leu Lys Gly Ser Gly
      100             105             110
Leu Val Tyr Gln Arg Leu Asp Arg Gln Ile Val Val Tyr Arg Leu Leu
      115             120             125
Gly His Asn Ala Cys Arg Val Asp Ser Val Arg Val Met Thr Asn Met

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130
Glu Gln Asn Asp Arg
145

135

140

<210> 6395
<211> 364
<212> PRT
<213> B.fragilis

<400> 6395
Val Cys Val Gln Trp Leu Leu Thr Lys Arg Gly Trp Thr Asn Ile Lys
1 5 10 15
Thr Lys Thr Val Ile Ser Phe Thr Val Lys Val Met Lys Ile Arg Lys
20 25 30
Asp Asp Ile Leu Leu Ile Leu Leu Ser Leu Leu Phe Ala Asp Cys Arg
35 40 45
Val Gly Lys Ala Glu Pro Val Ala Asp Pro Met Glu Glu Glu Gly Ile
50 55 60
Ser Val Val Arg Tyr Asp Lys Leu Leu Asp Glu Tyr Val Arg Phe Asn
65 70 75 80
Ser Phe Ser Ala Leu Gln Lys Met Asn Leu Glu Tyr Ala Leu Pro Thr
85 90 95
Lys Leu Leu Ile Glu Asp Val Leu Ala Ile Gly Gln Val Ser Asp Asp
100 105 110
His Ile Phe Gln Arg Leu Lys Thr Phe Tyr Ser Asp Thr Thr Leu Val
115 120 125
Arg Leu Ile Glu Asp Val Glu Ala Lys Tyr Pro Glu Leu Glu Ser Val
130 135 140
Glu Lys Asn Leu Thr Lys Gly Phe Gly Lys Leu Gln Lys Glu Ile Pro
145 150 155 160
Asp Ile Met Ile Pro Met Ile Tyr Thr Gln Ile Ser Ala Phe Asn Glu
165 170 175
Ser Ile Val Leu Ser Asp Ser Val Leu Gly Ile Ser Leu Asp Lys Tyr
180 185 190
Met Gly Glu Asp Tyr Pro Leu Tyr Lys Arg Phe Tyr Tyr Asn Tyr Gln
195 200 205
Arg Arg Thr Met Arg Pro Asp Arg Ile Val Pro Asp Cys Leu Val Phe
210 215 220
Tyr Leu Met Ser Gln Tyr Pro Phe Pro Met Asp Tyr Ser Arg Thr Leu
225 230 235 240
Leu Asp Val Met Met His Tyr Gly Lys Ile Asn Tyr Val Val Gln His
245 250 255
Leu Leu Asp Tyr Ser Ser Ser Glu Glu Ala Leu Gly Tyr Ser Asp Leu
260 265 270
Glu Arg Glu Trp Cys Lys Glu Asn Gln Gln Gln Met Trp Arg Tyr Ile
275 280 285
Leu Glu Gln Asp His Leu His Ala Thr Asp Pro Met Val Val Arg Gln
290 295 300
Tyr Thr Arg Pro Ala Pro Phe Thr Asn Thr Leu Gly Glu Asn Ala Pro
305 310 315 320
Ser Met Val Gly Thr Trp Ile Gly Thr Lys Ile Ile Thr Ser Tyr Met
325 330 335
Lys His His Lys Lys Thr Thr Leu Arg Gln Leu Leu Glu Met Ser Asp
340 345 350
Tyr Glu Arg Met Phe Thr Glu Ser Arg Phe Asn Pro
355 360

<210> 6396
<211> 85

<212> PRT

<213> B.fragilis

<400> 6396

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Tyr Arg His Lys Asn Lys Glu Glu Asp Arg Pro Glu Glu Leu Leu Ala
1          5          10          15
Tyr Pro Leu Leu Phe Ile Ser Leu Thr Arg Lys Ser Val Glu Glu Leu
          20          25          30
Ile Phe Gln Thr Val Phe Asp Pro Phe His Cys Phe Leu Thr Phe Phe
          35          40          45
Ser Ser Leu Leu Arg Thr Phe Phe Tyr Val Phe Gly Cys Ile Phe Gly
          50          55          60
Cys Ile Phe Asp Phe Leu Lys Cys Ile Phe Gly Ala Phe Phe His Val
65          70          75          80
Ile Ser Tyr Phe Leu
          85

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<210> 6397

<211> 904

<212> PRT

<213> B.fragilis

<400> 6397

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Cys Met Thr Lys Lys Ile Asn Leu Phe Pro Ser Leu Ile Arg Phe Arg
1          5          10          15
Glu Thr Asn Arg Leu Lys Met Ala Ile Ala Ala Ser Ile Met Leu Trp
          20          25          30
Cys Met Ala Pro Gln Gln Ala Val Ala Asp Thr Tyr Glu Lys His Glu
          35          40          45
Val Ala Ser Ile Gln Gln Gln Lys Val Lys Ala Asn Gly Thr Val Val
          50          55          60
Asp Gln Thr Gly Glu Pro Leu Ile Gly Val Ser Val Lys Val Lys Asp
65          70          75          80
Ala Pro Asn Gly Thr Ile Thr Asn Leu Asp Gly Lys Phe Ser Ile Asp
          85          90          95
Val Ala Lys Gly Ala Thr Leu Glu Ile Ser Tyr Val Gly Tyr Lys Thr
          100          105          110
Val Ile Val Lys Ala Glu Ser Thr Pro Met His Ile Val Leu Lys Glu
          115          120          125
Asp Ser Glu Met Ile Asp Glu Val Val Val Val Gly Tyr Gly Ser Gln
          130          135          140
Lys Lys Val Asn Val Thr Gly Ala Val Gly Met Val Asn Ser Glu Val
          145          150          155          160
Leu Glu Ala Arg Pro Val Gln Asn Val Ser Gln Ala Leu Gln Gly Val
          165          170          175
Val Pro Gly Leu Asn Leu Ser Val Asn Asn Gly Gly Gly Ser Leu Asp
          180          185          190
Ser Glu Met Ser Ile Asn Ile Arg Gly Thr Gly Thr Ile Gly Asp Gly
          195          200          205
Ser Gly Ser Ser Pro Leu Val Leu Ile Asp Gly Ile Glu Gly Ser Leu
          210          215          220
Asn Thr Val Asn Pro Asn Asp Ile Glu Ser Val Ser Val Leu Lys Asp
          225          230          235          240
Ala Ala Ser Ala Ser Ile Tyr Gly Ala Arg Ala Ala Phe Gly Val Val
          245          250          255
Leu Val Lys Thr Lys Ser Gly Gln Ser Gly Lys Pro Arg Val Thr Tyr
          260          265          270
Ser Gly Asn Val Arg Phe Ser Asp Ala Thr Asn Ile Pro Glu Met Leu
          275          280          285

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755	760	765
Arg Tyr Thr Tyr Asp Met Ile Ala Thr Ala Pro Glu Leu Pro Ser Ile		
770	775	780
Leu Gly Thr Gly Val Pro Lys Ile Asn Asn Ala Asp Met Lys Ser Tyr		
785	790	795
Gly Phe Glu Leu Glu Ile Gly Trp Arg Asp Arg Ile Lys Asn Phe Ser		800
	805	810
		815
Tyr Gly Val Lys Phe Val Leu Ser Asp Ala Gln Gln Lys Ile Leu Lys		
	820	825
		830
Tyr Asn Asn Pro Asp Lys Ser Leu Ser Asn Pro Tyr Tyr Glu Gly Gln		
	835	840
		845
Lys Leu Gly Glu Ile Trp Gly Tyr Lys Thr Ile Gly Ile Ala Gln Ser		
	850	855
		860
Asp Glu Glu Met Asn Leu His Leu Ala Asn Ala Lys Gln Pro Met Gly		
865	870	875
		880
Gln Lys Trp Ala Ala Gly Asp Ile Met Tyr Ala Asp Leu Asp Asn Ser		
	885	890
		895
Gly Ser Val Asp Gln Gly Val Phe		
	900	

<210> 6398

<211> 243

<212> PRT

<213> B.fragilis

<400> 6398

Tyr Met Glu Lys Lys Glu Phe Ser Ser Pro Ala Arg Arg Tyr Gly Lys		
1	5	10
		15
Phe Phe Ile Ala Phe Ile Phe Ile Thr Ala Gly Val Leu Leu Leu Ala		
	20	25
		30
Arg Asn Leu Gly Trp Ile Ser Tyr Thr Leu Phe Gly Ile Leu Val Ser		
	35	40
		45
Trp Gln Met Leu Leu Ile Leu Leu Gly Ile Tyr Leu Ile Leu Arg Arg		
	50	55
		60
Gln Ile Leu Arg Gly Gly Ile Leu Leu Ala Ile Gly Ala Tyr Leu Ile		
65	70	75
		80
Ser Pro Tyr Leu Glu Trp Met Pro Ala Gly Val His Val Thr Leu Phe		
	85	90
		95
Pro Ile Val Leu Ile Val Ile Gly Leu Ala Phe Leu Phe Arg Pro Lys		
	100	105
		110
Arg Ala Arg His Glu Arg Ser His Arg Gly Asn Phe Ala Ser Ser Gln		
	115	120
		125
Tyr Asn Ser Thr Asp Gly Val Leu His Ser Glu Asn Thr Phe Ser Gly		
	130	135
		140
Ile Arg Gln Val Val Leu Asp Glu Val Phe Lys Gly Gly Thr Ile Gln		
145	150	155
		160
Asn Ser Phe Gly Gly Thr Val Ile Asp Leu Arg Arg Thr Thr Leu Pro		
	165	170
		175
Glu Gly Glu Thr Phe Leu Asp Ile Asp Cys Thr Phe Gly Gly Ile Glu		
	180	185
		190
Ile Tyr Val Pro Ser Asp Trp Lys Val Val Phe Arg Cys Thr Thr Cys		
	195	200
		205
Leu Gly Gly Cys Gln Asp Lys Arg Phe Gly Gly Gly Met Ile Asp Gln		
	210	215
		220
Asn Arg Ile Leu Val Ile Arg Gly Asp Leu Thr Phe Gly Gly Ile Asp		
225	230	235
		240
Ile Lys Ser		

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<210> 6399
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 6399

Lys Gln Ser Asn Met Arg Leu Ile Ile Gln Pro Asp Tyr Gln Ser Val
 1 5 10 15
 Ser Gln Trp Ala Ala His Tyr Val Ala Ala Lys Ile Lys Ala Ala Asn
 20 25 30
 Pro Thr Pro Glu Lys Pro Phe Val Leu Gly Cys Pro Thr Gly Ser Ser
 35 40 45
 Pro Leu Gly Met Tyr Lys Ala Leu Ile Asp Leu Asn Lys Lys Gly Ile
 50 55 60
 Val Ser Phe Gln Asn Val Val Thr Phe Asn Met Asp Glu Tyr Val Gly
 65 70 75 80
 Leu Pro Lys Glu His Pro Glu Ser Tyr Tyr Ser Phe Met Trp Asn Asn
 85 90 95
 Phe Phe Ser His Ile Asp Ile Lys Pro Glu Asn Thr Asn Ile Leu Asn
 100 105 110
 Gly Asn Ala Ala Asp Leu Asp Ala Glu Cys Ala Arg Tyr Glu Glu Lys
 115 120 125
 Ile Lys Ser Tyr Gly Gly Ile Asp Leu Phe Met Gly Gly Ile Gly Pro
 130 135 140
 Asp Gly His Ile Ala Phe Asn Glu Pro Gly Ser Ser Leu Ser Ser Arg
 145 150 155 160
 Thr Arg Gln Lys Thr Leu Thr Thr Asp Thr Ile Ile Ala Asn Ser Arg
 165 170 175
 Phe Phe Asp Asn Asp Ile Asn Lys Val Pro Lys Thr Ser Leu Thr Val
 180 185 190
 Gly Val Gly Thr Val Leu Ser Ala Arg Glu Val Met Ile Ile Val Asn
 195 200 205
 Gly His Asn Lys Ala Arg Ala Leu Tyr His Ala Val Glu Gly Ala Ile
 210 215 220
 Thr Gln Met Trp Thr Ile Ser Ala Leu Gln Met His Glu Lys Gly Ile
 225 230 235 240
 Ile Val Cys Asp Asp Ala Ala Thr Ala Glu Leu Lys Val Gly Thr Tyr
 245 250 255
 Arg Tyr Phe Lys Asp Ile Glu Ala Asp His Leu Asp Pro Gln Ser Leu
 260 265 270
 Leu Lys

<210> 6400
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 6400

Ser Asn Ser Leu Tyr Phe Leu Trp Phe Ser Ser Phe Leu Cys Thr Leu
 1 5 10 15
 Phe Val Leu Leu Cys Arg Lys Ser Ile Ser Leu Gln Pro Asn Leu Thr
 20 25 30
 Leu Lys Gly Met Ser Tyr Asn Leu Leu Lys Gly Lys Arg Gly Ile Ile
 35 40 45
 Phe Gly Ala Leu Asn Glu Gln Ser Ile Ala Trp Lys Val Ala Glu Arg
 50 55 60
 Ala Val Glu Glu Gly Ala Val Ile Thr Leu Ser Asn Thr Pro Val Ala
 65 70 75 80

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<210> 6401
<211> 157
<212> PRT
<213> B.fragilis
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<210> 6402

<211> 369
 <212> PRT
 <213> B.fragilis

<400> 6402

His Asn Leu Trp Asn Leu Tyr Lys Lys Thr Phe Arg Met Lys Lys Asn
 1 5 10 15
 Ser Phe Glu Thr Gln Ile Leu His Thr Pro Phe Glu Lys Glu Asp Ala
 20 25 30
 Tyr His Ser Leu Ser Met Pro Val Tyr His Thr Ala Ala Tyr Glu Phe
 35 40 45
 Glu Thr Ala Glu Glu Met Glu Ala Ala Phe Cys Gly Gln Lys Ala Gly
 50 55 60
 His Ala Tyr Ser Arg Ile Thr Asn Pro Thr Val Gln Tyr Phe Glu Gln
 65 70 75 80
 Arg Val Gln Arg Val Thr Gly Ala Leu Ser Val Thr Ala Leu Asn Ser
 85 90 95
 Gly Met Ala Ala Ile Ser Asn Ala Leu Ile Thr Leu Ala Ser Ala Gly
 100 105 110
 Ala Asn Val Val Thr Ser Lys His Leu Phe Gly Asn Thr Tyr Ser Phe
 115 120 125
 Leu Lys Ser Thr Leu Glu Ala Phe Gly Val Glu Val Arg Phe Cys Asp
 130 135 140
 Leu Thr Cys Pro Glu Glu Val Lys Gln Gln Ile Asp Gly Asp Thr Cys
 145 150 155 160
 Ala Leu Phe Leu Glu Val Ile Thr Asn Pro Gln Leu Glu Val Ala Asp
 165 170 175
 Leu Lys Ala Leu Ala Asp Ile Ala His Lys Ala Gly Val Pro Leu Leu
 180 185 190
 Ala Asp Thr Thr Ala Ile Pro Phe His Val Phe His Ala Thr Asp Phe
 195 200 205
 Gly Val Asp Ile Glu Ile Val Ser Ser Thr Lys Tyr Ile Ser Gly Gly
 210 215 220
 Ala Thr Cys Ile Gly Gly Leu Ile Ile Asp Tyr Gly Thr Phe Asp Trp
 225 230 235 240
 Glu His Ser Ala Lys Leu Ala Ala Leu Ser Ala Asp Thr Gly Lys Glu
 245 250 255
 Ala Phe Thr Val Lys Leu Arg Lys Glu Val His Arg Asn Leu Gly Ala
 260 265 270
 Tyr Met Thr Pro Gln Val Ala Tyr Met Gln Thr Leu Gly Leu Glu Thr
 275 280 285
 Met Glu Val Arg Phe Ala Arg Gln Ala Glu Thr Cys Leu Lys Leu Ala
 290 295 300
 Gln Cys Leu Gln Glu Leu Pro Glu Ile Glu Ser Val Asn Tyr Thr Gly
 305 310 315 320
 Leu Glu Ser Asn Pro Phe Tyr Glu Leu Ser Thr Arg Gln Phe Gly Ser
 325 330 335
 Leu Pro Gly Ala Met Leu Thr Phe Asp Leu Pro Ser Arg Glu Ile Cys
 340 345 350
 Phe Arg Phe Ile Asn Arg Leu Arg Phe Ile Arg Lys Gly Asn Asp Phe
 355 360 365
 Ile

<210> 6403
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 6403

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Ser Val Ala Leu Glu Gly Ile Phe Ala Met Ala Asp Gln Thr Phe Leu
1          5          10          15
Ile Glu Lys Ala Ser Thr Asp Asn Ile Leu Ser Phe Ile Cys Ala Thr
          20          25          30
Thr Asp Ala Lys Ile Val Ile His Gly Arg Asn Pro Ile Phe Ile His
          35          40          45
Phe Leu Lys Pro Val Gly Ile Cys Ile Arg Ser Arg Ile Val Val Pro
          50          55          60
Ser Ala
65

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<210> 6404

<211> 374

<212> PRT

<213> B.fragilis

<400> 6404

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Lys His Met Gly Asn Lys Gly Val Leu Ser Ser Ala Phe Asn Met Ser
1          5          10          15
Leu Gly Phe Ile Pro Val Ile Val Ser Ile Leu Leu Cys Glu Phe Ile
          20          25          30
Thr Gln Asp Ile Ser Ile Tyr Ile Gly Thr Gly Ile Gly Leu Ile Tyr
          35          40          45
Ser Tyr Arg Ser Leu Ser Arg Lys Gly Ala Arg Ile Pro Asn Phe Ile
          50          55          60
Leu Tyr Ile Ser Thr Gly Ile Leu Thr Leu Leu Thr Leu Ala Ser Phe
65          70          75          80
Ile Pro Gly Asp Phe Val Pro Glu Gly Ala Leu Pro Leu Thr Leu Glu
          85          90          95
Val Ser Ile Leu Ile Pro Met Val Ile Leu Phe Leu His Arg Arg Lys
          100          105          110
Phe Ile Ser His Tyr Leu Arg Gln Asn Ala Gln Cys Asn Arg Arg Leu
          115          120          125
Phe Ala Gln Gly Ala Glu Ser Ala Ile Val Ser Ala Arg Val Val Leu
          130          135          140
Ile Leu Gly Ile Leu His Phe Ala Val Ile Ser Leu Thr Val Leu Val
145          150          155          160
Ala His Pro Leu Thr Arg Thr Ser Ile Leu Val Leu Tyr His Val Leu
          165          170          175
Pro Pro Thr Ile Phe Ile Leu Ser Ile Leu Leu Asn Gln Ile Gly Ile
          180          185          190
Arg Tyr Phe Asn His Val Met Ala His Thr Glu Tyr Val Pro Ile Val
          195          200          205
Asn Thr Arg Gly Asp Val Ile Gly Lys Ser Leu Ala Val Glu Ala Ile
          210          215          220
Asn Tyr Lys Asn Ala Tyr Ile Asn Pro Val Ile Arg Ile Ala Val Ser
225          230          235          240
Thr His Gly Met Leu Phe Leu Cys Asn Arg Pro Gln Ser Cys Ile Leu
          245          250          255
Asp Lys Gly Lys Val Asp Ile Pro Met Glu Cys Tyr Leu Arg Tyr Gly
          260          265          270
Glu Thr Leu Thr Ala Gly Ala Asn Arg Leu Leu Ser Asn Ala Phe Pro
          275          280          285
Lys Ala Ser Asp Leu Lys Pro Thr Phe Thr Ile Ser Tyr His Phe Glu
          290          295          300
Asn Glu Gln Thr Asn Arg Leu Val Tyr Leu Phe Ile Val Asp Met Glu
305          310          315          320
Asp Asp Ser Ile Leu Cys Asp Pro Arg Phe Lys Gly Gly Lys Leu Trp

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          325          330          335
Thr Phe Gln Gln Ile Glu His Asn Leu Gly Thr His Phe Phe Ser Glu
          340          345          350
Cys Phe Glu Leu Glu Tyr Glu His Leu Lys Gln Val Ile Gly Ile Arg
          355          360          365
Glu Lys Tyr Lys Val Ser
          370

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<210> 6405
 <211> 673
 <212> PRT
 <213> B.fragilis

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<400> 6405
Asn Ile Ser Gly Ser Ser Asp Val Glu Phe Thr Ile Asp Thr Gly Asn
1      5      10      15
Lys Glu Phe Gln Asp Ala Leu Asn Leu Ile Gln Tyr Thr Arg Gln Ser
          20      25      30
Val Phe Leu Thr Gly Lys Ala Gly Thr Gly Lys Ser Thr Phe Leu Lys
          35      40      45
Tyr Ile Cys Lys Asn Thr Lys Lys Lys His Ile Val Leu Ala Pro Thr
          50      55      60
Gly Ile Ala Ala Ile Asn Ala Gly Gly Ser Thr Leu His Ser Phe Phe
65      70      75      80
Lys Leu Pro Phe His Pro Leu Leu Pro Asp Asp Pro Asn Leu Ser Leu
          85      90      95
Gln Arg Gly Arg Ile His Glu Phe Phe Lys Tyr Thr Lys Pro His Arg
          100     105     110
Lys Leu Leu Glu Gln Val Glu Leu Val Ile Ile Asp Glu Ile Ser Met
          115     120     125
Val Arg Ala Asp Met Ile Asp Ala Val Asp Arg Ile Leu Arg Val Tyr
          130     135     140
Ser Arg Asn Leu Arg Asp Pro Phe Gly Gly Lys Gln Val Leu Leu Val
145     150     155     160
Gly Asp Val Phe Gln Leu Glu Pro Val Ile Lys Gly Asp Glu Arg Glu
          165     170     175
Ile Ile Asn Arg Phe Tyr Pro Thr Pro Tyr Phe Phe Ser Ala Arg Val
          180     185     190
Phe Asn Glu Ile Glu Leu Val Ser Ile Glu Leu Gln Lys Val Tyr Arg
          195     200     205
Gln Ser Asp Ala Val Phe Val Ser Val Leu Asp His Ile Arg Ser Gly
          210     215     220
Ala Ala Gly Ala Ala Asp Leu Gln Leu Leu Asn Thr Arg Tyr Gly Ala
225     230     235     240
Gln Ile Asp Ala Ser Glu Glu Asp Leu Tyr Ile Thr Leu Ala Thr Arg
          245     250     255
Arg Asp Thr Val Glu Thr Ile Asn Glu Arg Lys Leu Thr Glu Leu Pro
          260     265     270
Gly Asp Pro Val Val Phe Glu Gly Glu Ile Asn Gly Asp Phe Pro Glu
          275     280     285
Ser Ser Leu Pro Thr Ser Lys Glu Leu Thr Leu Lys Pro Gly Ala Gln
          290     295     300
Ile Ile Phe Ile Lys Asn Asp Phe Glu Arg Arg Trp Val Asn Gly Thr
305     310     315     320
Ile Gly Val Val Ser Gly Ile Asp Asn Asp Gly Ile Ile Tyr Val Ile
          325     330     335
Thr Asp Asp Gly Lys Glu Cys Asp Val His Arg Glu Ser Trp Arg Asn
          340     345     350
Ile Arg Tyr Lys Tyr Asn Glu Glu Lys Lys Glu Ile Glu Glu Glu

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      355              360              365
Leu Gly Thr Phe Thr Gln Tyr Pro Ile Arg Leu Ala Trp Ala Ile Thr
  370              375              380
Val His Lys Ser Gln Gly Leu Thr Phe Ser Arg Val Val Ile Asp Phe
 385              390              395              400
Thr Gly Gly Val Phe Ala Gly Gly Gln Ala Tyr Val Ala Leu Ser Arg
      405              410              415
Cys Thr Ser Leu Glu Gly Ile Gln Leu Lys Lys Pro Ile Ser Arg Ala
      420              425              430
Asp Ile Phe Val Arg Pro Glu Ile Val Ser Phe Ser Gly Arg Phe Asn
      435              440              445
Asn Arg Gln Ala Ile Asp Lys Ala Leu Lys Gln Ala Gln Ala Asp Val
      450              455              460
Gln Tyr Ala Ala Ala Ala Arg Ala Phe Asp Lys Gly Asp Phe Glu Thr
 465              470              475              480
Cys Leu Glu Gln Phe Phe Leu Ala Ile His Ser Arg Tyr Asp Ile Glu
      485              490              495
Lys Pro Ala Ala Arg Arg Leu Ile Arg Arg Lys Leu Gly Val Val Asn
      500              505              510
Leu Leu Arg Glu Gln Lys Arg Lys Leu Gln Ala Gln Met Glu Ala Gln
 515              520              525
Lys Lys Ser Leu Gln Lys Tyr Ala Arg Glu Tyr Leu Leu Met Gly Asn
 530              535              540
Glu Cys Ile Thr Gln Ala His Asp Val Arg Ala Ala Leu Ala Asn Tyr
 545              550              555              560
Asp Lys Ala Ile Glu Leu Tyr Pro Glu Tyr Ile Asp Ala Trp Ile Arg
      565              570              575
Lys Gly Ile Thr Leu Phe Asn Glu Lys Glu Phe Phe Asp Ala Glu Asn
      580              585              590
Cys Leu Asn Arg Ala Val Ser Leu Arg Pro Ser Glu Phe Lys Ala Leu
 595              600              605
Tyr Asn Arg Gly Lys Leu Arg Leu Gln Thr Glu Asn Ile Glu Gly Ala
 610              615              620
Leu Ser Asp Leu Asp Lys Ala Thr Ser Leu Lys Pro Glu His Pro Gly
 625              630              635              640
Ala His Glu Leu Phe Gly Asp Thr Leu Leu Lys Val Gly Lys Glu Thr
      645              650              655
Glu Ala Ala Ile Gln Trp Arg Ile Ala Glu Glu Leu Arg Lys Lys Lys
      660              665              670
Lys

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<210> 6406

<211> 207

<212> PRT

<213> B.fragilis

<400> 6406

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Gln Thr Ile Met Ile Leu Lys Leu Tyr Glu Lys Asn Asn Asn Pro Gln
 1              5              10              15
Asp Leu Gln Arg Ile Val Asp Leu Leu Asn Asp Gly Gly Leu Ile Ile
      20              25              30
Tyr Pro Thr Asp Thr Met Tyr Ala Ile Gly Cys His Gly Leu Lys Glu
      35              40              45
Arg Ala Ile Glu Arg Ile Cys Arg Ile Lys Glu Ile Asp Pro Lys Lys
      50              55              60
Asn Asn Leu Ser Ile Ile Cys Tyr Asp Leu Ser Ser Ile Ser Glu Tyr
 65              70              75              80
Ala Lys Val Asp Asn Asn Ile Phe Lys Leu Met Lys Arg Asn Leu Pro

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				85					90					95			
Gly	Pro	Phe	Thr	Phe	Ile	Leu	Asn	Gly	Thr	Asn	Arg	Leu	Pro	Lys	Ile		
			100					105					110				
Phe	Arg	Asn	Arg	Lys	Glu	Val	Gly	Ile	Arg	Met	Pro	Asp	Asn	Ser	Ile		
		115					120					125					
Ile	Arg	Glu	Ile	Ala	Arg	Leu	Leu	Asp	Ala	Pro	Ile	Met	Thr	Thr	Thr		
	130					135					140						
Leu	Pro	His	Asp	Glu	His	Glu	Asp	Ile	Glu	Tyr	Val	Thr	Asp	Pro	Glu		
145					150					155					160		
Leu	Ile	Asp	Glu	Lys	Leu	Gly	Asp	Val	Val	Asp	Leu	Val	Ile	Asp	Gly		
			165					170					175				
Gly	Ile	Gly	Gly	Ile	Glu	Pro	Ser	Thr	Val	Val	Asn	Cys	Thr	Glu	Gly		
			180					185					190				
Glu	Ala	Ala	Ile	Val	Arg	Gln	Gly	Lys	Gly	Glu	Leu	Glu	Glu	Ala			
		195					200					205					

<210> 6407

<211> 144

<212> PRT

<213> B.fragilis

<400> 6407

His	Leu	Ile	Met	Lys	Lys	Val	Leu	Phe	Phe	Ala	Leu	Val	Leu	Thr	Ile		
1				5				10					15				
Ala	Thr	Ala	Cys	Ser	Gln	Thr	Lys	Asp	Ser	Tyr	Leu	Glu	Gly	Phe	Lys		
			20					25				30					
Leu	Phe	Ile	Glu	Ser	Val	Gln	Lys	Asn	Ala	Gln	Asp	Tyr	Thr	Lys	Ala		
	35					40					45						
Asp	Trp	Glu	Lys	Ala	Asp	Glu	Gln	Phe	Thr	Lys	Leu	Lys	Asp	Ser	Tyr		
50					55						60						
Asn	Asn	Phe	Ser	Lys	Gln	Met	Thr	Ser	Asp	Glu	Lys	Gly	Glu	Val	Ile		
65					70					75					80		
Lys	Leu	Glu	Ser	Thr	Tyr	Ala	Ala	Leu	Lys	Leu	Lys	Lys	Ile	Gly	Asp		
				85				90					95				
Asp	Val	Lys	Glu	Ser	Thr	Lys	Asp	Ala	Phe	Glu	Lys	Val	Lys	Asp	Thr		
		100						105					110				
Ala	Lys	Asp	Ala	Ala	Lys	Asp	Val	Lys	Glu	Gly	Ala	Gln	Lys	Ala	Ala		
		115					120					125					
Lys	Lys	Gly	Glu	Lys	Ala	Met	Glu	Gly	Ile	Lys	Asp	Gly	Leu	Lys	Asp		
	130					135					140						

<210> 6408

<211> 745

<212> PRT

<213> B.fragilis

<400> 6408

Lys	Gln	Pro	Ile	Lys	Ser	Ser	Lys	Pro	Met	Lys	Arg	Lys	Phe	Ile	Phe		
1				5				10					15				
Leu	Phe	Phe	Cys	Leu	Cys	Cys	Leu	Ala	Gly	Phe	Ala	Gln	Gly	Gly	Lys		
			20					25				30					
Ala	Leu	Asp	Leu	Lys	Glu	Ile	Asn	Ser	Gly	Lys	Phe	Ser	Pro	Glu	Asn		
	35					40					45						
Ile	Tyr	Gly	Val	Val	Pro	Met	Pro	Asp	Gly	Glu	His	Tyr	Thr	Gln	Arg		
50					55						60						
Asn	Ala	Glu	Gly	Thr	Gln	Ile	Val	Lys	Tyr	Ser	Phe	Arg	Thr	Gly	Glu		
65					70					75					80		
Pro	Val	Glu	Val	Val	Phe	Asp	Val	Thr	Lys	Ala	Arg	Glu	Cys	Pro	Phe		
				85				90						95			

Lys Lys Phe Asp Ser Tyr Gln Phe Ser Pro Asp Gly Ser Lys Ile Leu
 100 105 110
 Ile Ala Thr Glu Thr Lys Pro Ile Tyr Arg His Ser Tyr Thr Ala Val
 115 120 125
 His Tyr Leu Tyr Pro Val Lys Arg Asn Asp Lys Gly Val Thr Thr Asn
 130 135 140
 Asn Ile Val Glu Lys Leu Ser Asp Gly Gly Pro Gln Gln Ala Pro Val
 145 150 155 160
 Phe Ser Pro Asp Gly Asn Leu Val Ala Phe Val Arg Asp Asn Asn Ile
 165 170 175
 Phe Leu Val Lys Leu Leu Tyr Gly Asn Ser Glu Ser Gln Val Thr Glu
 180 185 190
 Asp Gly Lys Leu Asn Ser Val Leu Asn Gly Ile Pro Asp Trp Val Tyr
 195 200 205
 Glu Glu Glu Phe Gly Phe Asn Arg Ala Leu Glu Phe Asn Ala Asp Asn
 210 215 220
 Thr Met Leu Ala Tyr Val Arg Phe Asp Glu Ser Glu Val Pro Ser Tyr
 225 230 235 240
 Thr Phe Pro Leu Phe Ala Gly Glu Ala Pro Arg Tyr Asp Ala Leu Gln
 245 250 255
 Asp Tyr Pro Gly Glu Tyr Thr Tyr Lys Tyr Pro Lys Ala Gly Tyr Pro
 260 265 270
 Asn Ser Lys Val Ser Val His Thr Phe Asp Ile Lys Ser Lys Val Thr
 275 280 285
 Arg Gln Val Lys Leu Pro Ile Asp Ala Asp Gly Tyr Ile Pro Arg Ile
 290 295 300
 Arg Phe Thr Gln Asp Pro Asn Lys Leu Ala Ile Met Thr Leu Asn Arg
 305 310 315 320
 His Gln Asn Arg Phe Asp Met Tyr Phe Ala Asp Pro Arg Ser Thr Val
 325 330 335
 Cys Lys Leu Ala Leu Arg Asp Glu Ser Pro Tyr Tyr Ile Asn Glu Asn
 340 345 350
 Val Phe Asp Asn Ile Gln Phe Tyr Pro Glu Tyr Phe Ser Phe Val Ser
 355 360 365
 Asp Lys Ser Gly Tyr Pro His Leu Tyr Trp Tyr Ser Met Asn Gly Asn
 370 375 380
 Leu Ile Lys Gln Val Thr Ser Gly Asn Tyr Glu Val Lys Asn Phe Ile
 385 390 395 400
 Gly Trp Asn Pro Asp Thr Asn Glu Phe Tyr Tyr Thr Ser Asn Glu Glu
 405 410 415
 Ser Pro Met Arg Gln Ala Val Tyr Lys Ile Asp Arg Lys Gly Lys Lys
 420 425 430
 Met Lys Leu Ser Asn Gln Pro Gly Thr Asn Ser Pro Ile Phe Ser Ser
 435 440 445
 Ser Met Lys Tyr Phe Met Asn Lys Phe Thr Ser Leu Asp Thr Pro Met
 450 455 460
 Leu Ile Thr Leu Asn Asp Asn Thr Gly Lys Val Leu Lys Thr Leu Val
 465 470 475 480
 Thr Asn Asp Lys Leu Lys Gln Lys Leu Ala Glu Tyr Ala Ile Pro Gln
 485 490 495
 Lys Glu Phe Phe Thr Phe Lys Thr Thr Glu Gly Val Asp Leu Asn Gly
 500 505 510
 Trp Met Met Lys Pro Val Asn Phe Asp Pro Ala Lys Arg Tyr Pro Val
 515 520 525
 Leu Met Phe Gln Tyr Ser Gly Pro Gly Ser Gln Gln Val Leu Asp Lys
 530 535 540
 Trp Gly Ile Ser Trp Glu Thr Tyr Met Ala Ser Leu Gly Tyr Val Val
 545 550 555 560
 Ala Cys Val Asp Gly Arg Gly Thr Gly Gly Arg Gly Ser Glu Phe Gln

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<210> 6409
<211> 281
<212> PRT
<213> B.fragilis
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Asn	Met	Asp	Ile	His	Pro	Ile	Gln	Glu	Ser	Ser	Arg	Arg	Trp	Met	Thr
1				5					10					15	
Ala	Leu	Ile	Leu	Ala	Val	Val	Ala	Ala	Gly	Ile	Gln	Thr	Thr	Leu	Leu
			20					25					30		
Trp	Gly	Tyr	Ala	Gly	Ala	Asp	Thr	Leu	Pro	Ala	Ala	Ile	Asp	Gly	Ile
		35					40					45			
Leu	Ser	Val	Gly	Leu	Leu	Cys	Leu	Leu	Ala	Tyr	Leu	Ala	Trp	Tyr	Val
	50					55					60				
Ile	Gly	Leu	Val	Ser	Ile	Leu	Gln	Thr	Asp	Leu	Leu	Ile	Ala	Ala	Leu
65				70						75					80
Ala	Leu	Leu	Phe	Trp	Leu	Ala	Gly	Gly	Phe	Ala	Val	Gln	Tyr	Val	Leu
			85						90					95	
Glu	Gln	Asn	Met	Gly	Gln	Val	Tyr	Ala	Pro	Phe	Gly	Glu	Thr	Leu	Pro
			100					105					110		
Phe	Arg	Ile	Leu	Phe	Gly	Ala	Leu	Ala	Trp	Gly	Val	Met	Met	Leu	Trp
		115					120					125			
Tyr	Arg	Leu	Gln	Ser	Leu	Asn	Thr	Val	Gln	Glu	Glu	Ile	Leu	Glu	Glu
	130					135					140				
Ala	Val	Ser	Arg	Glu	Glu	Ala	Leu	Arg	Glu	Glu	Leu	Arg	Gln	Ile	Glu
145				150						155					160
Cys	Arg	Glu	Asp	Lys	Ala	Leu	Pro	Glu	Glu	Ala	Glu	Cys	Ile	Asp	Arg
			165						170					175	
Ile	Thr	Val	Lys	Asp	Gly	Thr	His	Ile	His	Leu	Ile	Arg	Thr	Asp	Glu
		180						185					190		
Leu	Leu	Tyr	Ile	Gln	Ala	Cys	Gly	Asp	Tyr	Val	Thr	Leu	Val	Thr	Pro
		195					200					205			
Ser	Gly	Gln	Tyr	Val	Lys	Glu	Gln	Thr	Met	Lys	Tyr	Phe	Asp	Ala	His
	210					215					220				
Leu	Pro	Ser	Ala	Gly	Phe	Val	Arg	Val	His	Arg	Ser	Thr	Ile	Val	Asn

225		230		235		240
Val Thr Gln Ile Ser Arg	Val Glu Leu Phe Gly Lys Glu Asn Tyr Gln					
	245	250	255			
Leu Ser Leu Lys Asn Gly Val Arg Leu Lys Val Ser Asn Ser Gly Tyr						
	260	265	270			
Lys Leu Leu Lys Glu Arg Leu Glu Leu						
	275	280				

<210> 6410

<211> 402

<212> PRT

<213> B.fragilis

<400> 6410

Lys Lys Arg Met Glu Gln Lys Thr Arg Ile Lys Gly Asn Val His Tyr	
1 5 10 15	
Val Gly Val Asn Asp Arg Asn Lys His Leu Phe Glu Gly Met Trp Pro	
	20 25 30
Leu Pro Tyr Gly Val Ser Tyr Asn Ser Tyr Leu Ile Asp Asp Glu Met	
	35 40 45
Val Ala Leu Ile Asp Thr Val Asp Ile Cys Tyr Phe Glu Val Tyr Leu	
	50 55 60
Arg Lys Ile Arg Asn Ile Ile Gly Asp Arg Pro Ile Asn Tyr Leu Ile	
	65 70 75 80
Ile Asn His Met Glu Pro Asp His Ser Gly Ser Ile Arg Leu Ile Lys	
	85 90 95
Gln His Tyr Pro Asp Ile Val Ile Val Gly Asn Lys Gln Thr Phe Gly	
	100 105 110
Met Ile Glu Gly Phe Tyr Gly Val Thr Gly Glu Gln Tyr Leu Ile Lys	
	115 120 125
Asp Gly Asp Phe Leu Ala Leu Gly Arg His Lys Leu Arg Phe Tyr Leu	
	130 135 140
Thr Pro Met Val His Trp Pro Glu Thr Met Met Thr Phe Asp Glu Thr	
	145 150 155 160
Asp Gly Ile Leu Phe Ser Gly Asp Gly Phe Gly Cys Phe Gly Thr Leu	
	165 170 175
Asp Gly Gly Phe Val Asp Thr Arg Met Asn Ile Asp His Tyr Trp Gly	
	180 185 190
Glu Met Val Arg Tyr Tyr Ser Asn Ile Val Gly Lys Tyr Gly Ser Pro	
	195 200 205
Val Gln Lys Ala Leu Gln Lys Leu Gly Gly Leu Pro Ile Ser Ala Ile	
	210 215 220
Cys Ser Thr His Gly Pro Val Trp Thr Glu Asn Ile Thr Lys Val Val	
	225 230 235 240
Gly Ile Tyr Asp Lys Leu Ser Arg Tyr Asp Ala Asp Glu Gly Val Val	
	245 250 255
Ile Ala Tyr Gly Ser Met Tyr Gly Asn Thr Glu Gln Met Ala Glu Ala	
	260 265 270
Ile Ala Ala Glu Leu Ser Ala Gln Gly Ile Lys Asn Ile Val Met His	
	275 280 285
Asn Val Ser Lys Ser Asn Pro Ser Tyr Ile Leu Ala Asp Ile Phe Arg	
	290 295 300
Tyr Lys Gly Leu Ile Ile Gly Ser Pro Thr Tyr Ser Asn Gln Ile Phe	
	305 310 315 320
Pro Glu Val Glu Ser Leu Leu Ser Lys Ile Leu Val Arg Glu Leu Lys	
	325 330 335
Gly Arg Tyr Leu Gly Tyr Phe Gly Ser Phe Thr Trp Ala Gly Ala Ala	
	340 345 350
Val Lys Arg Met Ala Glu Phe Ala Glu Lys Ser Lys Phe Glu Leu Val	

355	360	365
Gly Asp Pro Val Glu Met Lys Gln Ala Met Lys Glu Ile Thr Tyr Gln		
370	375	380
Gln Cys Glu Asn Leu Ala Arg Ala Met Ala Gly Arg Leu Lys Lys Asp		
385	390	395
Arg Val		400

<210> 6411
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 6411

Gln Thr Ala Val Lys Ile Tyr His His Cys Gly Ile Gln Leu Leu Tyr		
1	5	10
Ile Arg Leu Phe Gln Tyr Ile Cys Ala Pro Leu Lys Lys Arg Arg Met		15
	20	25
Ile Lys Ala Leu Phe Phe Asp Ile Asp Gly Thr Leu Val Ser Phe Asn		30
	35	40
Thr His Glu Ile Pro Ser Ser Thr Leu Ala Ala Ile Ala Glu Ala Lys		45
	50	55
Ala Lys Gly Ile Lys Ile Phe Ile Ala Thr Gly Arg Pro Lys Ala Ile		60
65	70	75
Ile Asn Asn Leu Thr Ala Leu Gln Glu Arg Glu Leu Ile Asp Gly Tyr		80
	85	90
Ile Thr Met Asn Gly Gly Tyr Cys Phe Val Gly Asp Glu Val Ile Tyr		95
	100	105
Lys His Ser Ile Pro Val Gln Asp Val Lys Ala Leu Ala Ala Leu Ser		110
	115	120
Asp Glu Arg Asn Phe Pro Cys Ile Phe Val Ala Glu His Thr Val Ala		125
	130	135
Val Cys Asn Thr Asn Lys Leu Val Asn Glu Ile Phe His Asp Phe Leu		140
145	150	155
His Val Asp Ile Leu Pro Ile Gln Thr Thr Ala Glu Ala Thr Gln Pro		160
	165	170
Glu Ile Phe Gln Met Thr Pro Phe Ile Thr Thr Glu Glu Glu Lys Thr		175
	180	185
Val Leu Pro Leu Leu Pro Asn Cys Glu Ser Gly Arg Trp Phe Pro Ala		190
	195	200
Phe Thr Asp Ile Val Ala Lys Gly Ile Arg Lys Gln Lys Gly Ile Asp		205
	210	215
Glu Ile Ile Arg His Phe Gly Ile Gly Gln Glu Glu Thr Met Ala Phe		220
225	230	235
Gly Asp Gly Gly Asn Asp Ile Ser Met Leu Arg His Ala Ala Ile Gly		240
	245	250
Val Ala Met Gly Asn Ala Asn Asp Asp Val Lys Glu Thr Ala Asp Tyr		255
	260	265
Ile Thr Thr Ser Val Asp Glu Asp Gly Ile Gln Lys Ala Leu Lys His		270
	275	280
Phe Gly Ile Ile		285
290		

<210> 6412
 <211> 204
 <212> PRT
 <213> B.fragilis

<400> 6412

Lys Ala Lys Phe Ile Ile Tyr Lys Leu Tyr Thr Met Leu Pro Lys Lys
 1 5 10 15
 Lys Asn Leu Glu Glu Glu Arg Ala Lys His Thr Val Asp Ser Leu Tyr
 20 25 30
 Lys Asp Tyr Val Asp Asp Leu Phe Ser Tyr Ala Leu Gly Phe Gly Phe
 35 40 45
 Asp Lys Gln Thr Ala Met Asp Ala Ile His Asp Val Phe Cys Arg Val
 50 55 60
 Cys Ile Arg Glu Arg Glu Val Gln Glu Ile Gln Asn Pro Lys Phe Tyr
 65 70 75 80
 Leu Leu Arg Ala Leu Arg Asn Gln Leu Ile Asp Thr Tyr Lys Leu Lys
 85 90 95
 Arg Asn Tyr Ser Glu Val Leu Thr Gly Glu Ile Thr Asp Glu Leu Pro
 100 105 110
 Tyr Lys Ile Lys Ile Thr Val Glu Asp Glu Ile Ile Ala Ala Glu Glu
 115 120 125
 Gln Ala Glu Val Ser Gln Lys Val Asp Glu Ile Leu Ser Ile Leu Thr
 130 135 140
 Glu Arg Gln Arg Glu Ile Ile Tyr Leu Arg Tyr Met Gln Glu Cys Ser
 145 150 155 160
 Tyr Glu Glu Ile Ala Glu Ile Met Gln Ile Ser Val Pro Ala Cys Arg
 165 170 175
 Lys Leu Leu Tyr Arg Thr Leu Leu Lys Leu Lys His Asn Asn Thr Leu
 180 185 190
 Val Leu Phe Tyr Leu Leu Leu Ser Ile Asn Val Gly
 195 200

<210> 6413

<211> 245

<212> PRT

<213> B.fragilis

<400> 6413

Ser Val Lys Phe Gln Leu Leu Asn Thr Leu Phe Met Asp Thr Ala Leu
 1 5 10 15
 Tyr Leu Leu Pro Val Thr Leu Gly Asp Thr Pro Ile Glu Ser Val Leu
 20 25 30
 Pro Ser Tyr Asn Lys Glu Ile Ile Gln Gly Ile Lys His Phe Ile Val
 35 40 45
 Glu Asp Val Arg Ser Ala Arg Arg Phe Leu Lys Lys Val Asp Arg Glu
 50 55 60
 Ile Asp Ile Asp Ser Leu Thr Phe Tyr Pro Leu Asn Lys His Thr Ser
 65 70 75 80
 Pro Glu Asp Ile Ser Gly Tyr Leu Lys Pro Leu Ala Gly Gly Leu Ser
 85 90 95
 Met Gly Val Ile Ser Glu Ala Gly Cys Pro Ala Val Ala Asp Pro Gly
 100 105 110
 Ala Asp Val Val Ala Ile Ala Gln Arg Lys Asn Leu Lys Val Val Pro
 115 120 125
 Leu Val Gly Pro Ser Ser Ile Ile Leu Ser Val Met Gly Ser Gly Phe
 130 135 140
 Asn Gly Gln Ser Phe Ala Phe His Gly Tyr Leu Pro Ile Glu Pro Gly
 145 150 155 160
 Glu Arg Ala Lys Lys Ile Lys Ala Leu Glu Gln Arg Val Tyr Ala Glu
 165 170 175
 His Gln Thr Gln Leu Phe Ile Glu Thr Pro Tyr Arg Asn Asn Lys Met
 180 185 190
 Val Glu Asp Ile Leu His Asn Cys Arg Pro Gln Thr Arg Leu Cys Ile
 195 200 205

Ala Ala Asn Ile Thr Cys Glu Gly Glu Tyr Ile Arg Thr Lys Thr Ile
 210 215 220
 Lys Glu Trp Gln Gly Lys Val Pro Asp Leu Thr Lys Ile Pro Cys Ile
 225 230 235 240
 Phe Leu Leu Tyr Gln
 245

<210> 6414

<211> 458

<212> PRT

<213> B.fragilis

<400> 6414

Asn Gly Cys Ser Val Pro Gly Leu Gly Ile Tyr His Ser Lys Phe Pro
 1 5 10 15
 Asp Ala Glu Arg Val Glu Ile Trp Gln Lys Gln Leu Thr Glu Glu Gly
 20 25 30
 Tyr Asp Ile Ile Leu Gly Val Arg Ser Ser Val Phe Leu Pro Phe Arg
 35 40 45
 Asn Leu Gly Leu Val Ile Val Asp Glu Glu His Glu Asn Thr Tyr Lys
 50 55 60
 Gln Gln Asp Pro Ala Pro Arg Tyr His Ala Arg Asn Ala Ala Ile Val
 65 70 75 80
 Leu Ala Ser Met Tyr Gly Ala Lys Thr Leu Leu Gly Thr Ala Thr Pro
 85 90 95
 Ser Val Glu Thr Trp Gln Asn Ala Thr Thr Gly Lys Phe Gly Trp Val
 100 105 110
 Glu Leu Lys Glu Arg Tyr Lys Glu Ile Gln Leu Pro Glu Ile Ile Pro
 115 120 125
 Val Asp Ile Lys Glu Leu His Arg Lys Lys Arg Met Thr Gly Gln Phe
 130 135 140
 Ser Pro Leu Leu Leu Gln Tyr Val Arg Glu Ala Leu Asp Asn Lys Gln
 145 150 155 160
 Gln Val Ile Leu Phe Gln Asn Arg Arg Gly Phe Ala Pro Met Ile Glu
 165 170 175
 Cys Arg Thr Cys Gly Trp Val Pro Lys Cys Lys Asn Cys Asp Val Ser
 180 185 190
 Leu Thr Tyr His Lys Gly Ile Asn Gln Leu Thr Cys His Tyr Cys Gly
 195 200 205
 Tyr Thr Tyr Gln Leu Pro Arg Ser Cys Pro Ala Cys Glu Gly Val Glu
 210 215 220
 Leu Met His Arg Gly Phe Gly Thr Glu Lys Ile Glu Asp Asp Val Lys
 225 230 235 240
 Leu Ile Phe Pro Glu Ala Ser Val Ala Arg Met Asp Leu Asp Thr Thr
 245 250 255
 Arg Thr Arg Ser Ala Tyr Glu Lys Ile Ile Ala Asp Phe Glu Gln Gly
 260 265 270
 Lys Thr Asp Ile Leu Ile Gly Thr Gln Met Val Ser Lys Gly Leu Asp
 275 280 285
 Phe Asp His Val Ser Val Val Gly Ile Leu Asn Ala Asp Thr Met Leu
 290 295 300
 Asn Tyr Pro Asp Phe Arg Ser Tyr Glu Arg Ala Phe Gln Leu Met Ala
 305 310 315 320
 Gln Val Ala Gly Arg Ala Gly Arg Lys Asn Lys Arg Gly Arg Val Val
 325 330 335
 Leu Gln Thr Lys Ser Ile Asp His Pro Ile Ile Arg Gln Val Met Thr
 340 345 350
 Asn Asp Tyr Glu Asp Met Val Ala Gly Gln Leu Ala Glu Arg Gln Met
 355 360 365

3049 3050 3051 3052 3053 3054 3055 3056 3057 3058 3059 3060 3061 3062 3063 3064 3065 3066 3067 3068 3069 3070 3071 3072 3073 3074 3075 3076 3077 3078 3079 3080 3081 3082 3083 3084 3085 3086 3087 3088 3089 3090 3091 3092 3093 3094 3095 3096 3097 3098 3099 3100 3101 3102 3103 3104 3105 3106 3107 3108 3109 3110 3111 3112 3113 3114 3115 3116 3117 3118 3119 3120 3121 3122 3123 3124 3125 3126 3127 3128 3129 3130 3131 3132 3133 3134 3135 3136 3137 3138 3139 3140 3141 3142 3143 3144 3145 3146 3147 3148 3149 3150 3151 3152 3153 3154 3155 3156 3157 3158 3159 3160 3161 3162 3163 3164 3165 3166 3167 3168 3169 3170 3171 3172 3173 3174 3175 3176 3177 3178 3179 3180 3181 3182 3183 3184 3185 3186 3187 3188 3189 3190 3191 3192 3193 3194 3195 3196 3197 3198 3199 3200 3201 3202 3203 3204 3205 3206 3207 3208 3209 3210 3211 3212 3213 3214 3215 3216 3217 3218 3219 3220 3221 3222 3223 3224 3225 3226 3227 3228 3229 3230 3231 3232 3233 3234 3235 3236 3237 3238 3239 3240 3241 3242 3243 3244 3245 3246 3247 3248 3249 3250 3251 3252 3253 3254 3255 3256 3257 3258 3259 3260 3261 3262 3263 3264 3265 3266 3267 3268 3269 3270 3271 3272 3273 3274 3275 3276 3277 3278 3279 3280 3281 3282 3283 3284 3285 3286 3287 3288 3289 3290 3291 3292 3293 3294 3295 3296 3297 3298 3299 3300 3301 3302 3303 3304 3305 3306 3307 3308 3309 3310 3311 3312 3313 3314 3315 3316 3317 3318 3319 3320 3321 3322 3323 3324 3325 3326 3327 3328 3329 3330 3331 3332 3333 3334 3335 3336 3337 3338 3339 3340 3341 3342 3343 3344 3345 3346 3347 3348 3349 3350 3351 3352 3353 3354 3355 3356 3357 3358 3359 3360 3361 3362 3363 3364 3365 3366 3367 3368 3369 3370 3371 3372 3373 3374 3375 3376 3377 3378 3379 3380 3381 3382 3383 3384 3385 3386 3387 3388 3389 3390 3391 3392 3393 3394 3395 3396 3397 3398 3399 3400 3401 3402 3403 3404 3405 3406 3407 3408 3409 3410 3411 3412 3413 3414 3415 3416 3417 3418 3419 3420 3421 3422 3423 3424 3425 3426 3427 3428 3429 3430 3431 3432 3433 3434 3435 3436 3437 3438 3439 3440 3441 3442 3443 3444 3445 3446 3447 3448 3449 3450 3451 3452 3453 3454 3455 3456 3457 3458 3459 3460 3461 3462 3463 3464 3465 3466 3467 3468 3469 3470 3471 3472 3473 3474 3475 3476 3477 3478 3479 3480 3481 3482 3483 3484 3485 3486 3487 3488 3489 3490 3491 3492 3493 3494 3495 3496 3497 3498 3499 3500 3501 3502 3503 3504 3505 3506 3507 3508 3509 3510 3511 3512 3513 3514 3515 3516 3517 3518 3519 3520 3521 3522 3523 3524 3525 3526 3527 3528 3529 3530 3531 3532 3533 3534 3535 3536 3537 3538 3539 3540 3541 3542 3543 3544 3545 3546 3547 3548 3549 3550 3551 3552 3553 3554 3555 3556 3557 3558 3559 3560 3561 3562 3563 3564 3565 3566 3567 3568 3569 3570 3571 3572 3573 3574 3575 3576 3577 3578 3579 3580 3581 3582 3583 3584 3585 3586 3587 3588 3589 3590 3591 3592 3593 3594 3595 3596 3597 3598 3599 3600 3601 3602 3603 3604 3605 3606 3607 3608 3609 3610 3611 3612 3613 3614 3615 3616 3617 3618 3619 3620 3621 3622 3623 3624 3625 3626 3627 3628 3629 3630 3631 3632 3633 3634 3635 3636 3637 3638 3639 3640 3641 3642 3643 3644 3645 3646 3647 3648 3649 3650 3651 3652 3653 3654 3655 3656 3657 3658 3659 3660 3661 3662 3663 3664 3665 3666 3667 3668 3669 3670 3671 3672 3673 3674 3675 3676 3677 3678 3679 3680 3681 3682 3683 3684 3685 3686 3687 3688 3689 3690 3691 3692 3693 3694 3695 3696 3697 3698 3699 3700 3701 3702 3703 3704 3705 3706 3707 3708 3709 3710 3711 3712 3713 3714 3715 3716 3717 3718 3719 3720 3721 3722 3723 3724 3725 3726 3727 3728 3729 3730 3731 3732 3733 3734 3735 3736 3737 3738 3739 3740 3741 3742 3743 3744 3745 3746 3747 3748 3749 3750 3751 3752 3753 3754 3755 3756 3757 3758 3759 3760 3761 3762 3763 3764 3765 3766 3767 3768 3769 3770 3771 3772 3773 3774 3775 3776 3777 3778 3779 3780 3781 3782 3783 3784 3785 3786 3787 3788 3789 3790 3791 3792 3793 3794 3795 3796 3797 3798 3799 3800 3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814 3815 3816 3817 3818 3819 3820 3821 3822 3823 3824 3825 3826 3827 3828 3829 3830 3831 3832 3833 3834 3835 3836 3837 3838 3839 3840 3841 3842 3843 3844 3845 3846 3847 3848 3849 3850 3851 3852 3853 3854 3855 3856 3857 3858 3859 3860 3861 3862 3863 3864 3865 3866 3867 3868 3869 3870 3871 3872 3873 3874 3875 3876 3877 3878 3879 3880 3881 3882 3883 3884 3885 3886 3887 3888 3889 3890 3891 3892 3893 3894 3895 3896 3897 3898 3899 3900 3901 3902 3903 3904 3905 3906 3907 3908 3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 3997 3998 3999 4000

Phe His Tyr Pro Pro Tyr Tyr Arg Met Val Tyr Val Tyr Leu Lys Asn
 370 375 380
 Arg Asn Glu Thr Leu Leu Asp Val Met Ala His Thr Met Ala Glu Lys
 385 390 395 400
 Leu Arg Ala Leu Phe Gly Asn Arg Ile Leu Gly Pro Asp Lys Pro Pro
 405 410 415
 Val Ala Arg Ile Gln Thr Leu Phe Ile Arg Lys Ile Val Val Lys Ile
 420 425 430
 Glu Gln Asn Ala Pro Met Ser Arg Ala Arg Glu Leu Val Phe Thr Thr
 435 440 445
 Gly Leu Glu Gly Ser Ala Arg Ser Val His
 450 455

<210> 6415
 <211> 510
 <212> PRT
 <213> B.fragilis

<400> 6415
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 Thr Cys Gly Ile Ile Cys Leu Thr Leu Ile Thr Leu Leu Phe Leu Asp
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 Phe Thr Gly Thr Leu His Gly Trp Phe Gly Trp Leu Ala Lys Ile Gln
 35 40 45
 Phe Leu Pro Ala Val Leu Ala Leu Asn Val Gly Val Val Val Leu Leu
 50 55 60
 Ile Ile Leu Thr Gly Val Phe Gly Arg Ile Tyr Cys Ser Val Ile Cys
 65 70 75 80
 Pro Leu Gly Val Phe Gln Asp Val Ala Ala Trp Ile Gly Lys Lys Arg
 85 90 95
 Lys Lys Leu Pro Tyr Ser Tyr Ser Pro Ala Leu Ser Leu Leu Arg Tyr
 100 105 110
 Gly Ala Leu Ala Ile Phe Ile Ile Thr Leu Val Ala Gly Val Ser Phe
 115 120 125
 Ile Ala Thr Leu Phe Ala Pro Tyr Ser Ala Tyr Gly Arg Ile Ala Asn
 130 135 140
 Asn Leu Phe Gln Pro Ile Trp Leu Trp Gly Asn Asn Leu Phe Ala His
 145 150 155 160
 Leu Ala Glu Arg Ala Gly Asn Tyr Ala Phe Tyr Glu Val Asp Ile Trp
 165 170 175
 Ile Lys Ser Leu Pro Thr Phe Ile Val Ala Ala Ala Thr Phe Val Ile
 180 185 190
 Leu Ile Leu Leu Ala Trp Arg Asn Gly Arg Thr Tyr Cys Asn Thr Ile
 195 200 205
 Cys Pro Val Gly Thr Val Leu Gly Phe Leu Ser Arg Tyr Ser Leu Phe
 210 215 220
 Arg Ile Thr Ile Asp Thr Glu Lys Cys Asn Lys Cys Gly Leu Cys Ala
 225 230 235 240
 Arg His Cys Lys Ala Ala Cys Ile Asn Ala Lys Glu His Thr Ile Asp
 245 250 255
 Tyr Ser Arg Cys Val Val Cys Met Asp Cys Leu Gly Lys Cys Lys Gln
 260 265 270
 Lys Ala Leu Ser Tyr Gln Leu Arg Thr Thr Lys Ala Arg Pro Ala Lys
 275 280 285
 Ala Glu Glu Asn Ala Leu Ala Ala Ser Ser Lys Glu Val Asn Glu Ala
 290 295 300
 Arg Arg Asn Phe Leu Thr Val Thr Ala Met Ala Ala Thr Ala Ser Ala
 305 310 315 320

Leu Lys Ala Gln Glu Lys Lys Val Asp Gly Gly Leu Ala Ala Ile Glu
 325 330 335
 Asp Lys Lys Ile Pro Asn Arg Gln Thr Pro Ile Thr Pro Pro Gly Ser
 340 345 350
 Leu Ser Ala Arg Asn Met Ala Ala His Cys Thr Ala Cys Gln Leu Cys
 355 360 365
 Val Ser Ala Cys Ser Asn Gln Val Leu Arg Pro Ser Thr Asn Leu Met
 370 375 380
 Asn Leu Met Gln Pro Glu Ile Ser Tyr Glu Arg Gly Tyr Cys Arg Pro
 385 390 395 400
 Glu Cys Asn Asp Cys Ser Gln Val Cys Pro Thr Gly Ala Ile His Pro
 405 410 415
 Ile Thr Ala Ala Asp Lys Ser Ser Thr Gln Ile Gly His Ala Val Trp
 420 425 430
 Ile Lys Ala Asn Cys Val Ser Leu Thr Asp Gly Val Lys Cys Asp Asn
 435 440 445
 Cys Ala Arg His Cys Pro Thr Gly Ala Ile Gln Met Ile Val Ala Glu
 450 455 460
 Pro Glu Lys Glu Ala Ser Pro Gln Ile Pro Ala Ile Asn Thr Glu Arg
 465 470 475 480
 Cys Ile Gly Cys Gly Ala Cys Glu Asn Leu Cys Pro Ala Arg Pro Phe
 485 490 495
 Ser Ala Ile Tyr Val Glu Gly His Glu Arg His Arg Ile Ile
 500 505 510

<210> 6416
 <211> 265
 <212> PRT
 <213> B.fragilis

<400> 6416
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 20 25 30
 Ile Leu Thr Glu Ile Thr Pro Asp Ile Arg Ile Met Ala Asn Thr Glu
 35 40 45
 Ser Val Thr Gln Thr Val Gly Trp Leu Gln Ser Asn Pro Ala Pro Asp
 50 55 60
 Leu Ile Phe Met Asp Ile His Leu Ser Asp Gly Ser Ala Phe Ala Ile
 65 70 75 80
 Phe Asp Arg Ile Glu Leu Glu Thr Pro Ile Ile Phe Thr Thr Ala Tyr
 85 90 95
 Asp Arg Tyr Ala Ile Glu Ala Phe Lys Val Asn Ser Ile Asp Tyr Leu
 100 105 110
 Leu Lys Pro Val Lys Val Glu Asp Val Glu His Ala Leu Glu Lys Tyr
 115 120 125
 Ser Lys Leu Thr Arg Gln Asp Leu Leu Gln Tyr Leu Ser Gln Leu Thr
 130 135 140
 Leu Leu Lys Pro Ala Pro Arg Tyr Lys Asp Lys Leu Leu Ile Ala His
 145 150 155 160
 Lys Asp Lys Leu Leu Pro Val Asn Ile Lys Asn Ile Ser Tyr Phe Tyr
 165 170 175
 Ala Thr Gly Lys Asn Thr Tyr Val Cys Leu Lys Asp Gly Asn Arg Tyr
 180 185 190
 Pro Tyr Ser Lys Thr Leu Glu Gln Ile Ala Ser Ser Leu Asn Pro Glu
 195 200 205
 Asp Phe Ile Arg Ala Asn Lys Gln Phe Ile Val Ala Arg Asp Ser Val
 210 215 220

Thr Asp Ile Thr Ile Trp Phe Asp Ser Arg Leu Leu Ile Thr Leu Asp
 225 230 235 240
 Thr Glu Val Pro Glu Arg Ile Tyr Val Ser Lys Asn Lys Ala Ser Glu
 245 250 255
 Phe Lys Thr Trp Leu Val Asn Asp Lys
 260 265

<210> 6417
 <211> 280
 <212> PRT
 <213> B.fragilis

<400> 6417
 Ile Thr Met Phe Tyr Asp Tyr Leu Cys Lys Gly Lys Ser Leu Tyr Leu
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 Ser Thr Gln Cys Leu Leu Ile Thr Ile Ser Phe Pro Asp Met Asp Ile
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 Val Asp Lys Leu Asn Lys Glu Phe Leu Thr Gln Pro Phe Cys Lys Asn
 35 40 45
 Glu Gln Leu Pro Glu Glu Leu Asn Glu Tyr Lys Arg Ile Ala Tyr Asn
 50 55 60
 Tyr Ala Arg Ile Glu Asn Ser Ile Ala Val Leu Ser Asp Met His Thr
 65 70 75 80
 Asn Ile Ser Tyr Ile Tyr Tyr Gly Gly Thr Ala Glu Thr Leu Gly Ile
 85 90 95
 Ala Arg Lys Gly Asp Asn Gln Asn Leu Glu Ser Ile Trp Glu Lys Glu
 100 105 110
 Val Phe Lys Tyr Ile His Pro Asp Asp Leu Ala Glu Lys Tyr Val Gln
 115 120 125
 Glu Leu Arg Phe Tyr His Phe Leu Lys Gln Ile Pro His Lys Lys Arg
 130 135 140
 Ala Asp Tyr Phe Leu Met Ser Lys Leu Arg Met Arg Asp Pro Ser Gly
 145 150 155 160
 Lys Tyr Ile Pro Ile Leu His Arg Met Phe Tyr Val Ala Thr His Ser
 165 170 175
 Asn Asp Ser Met Trp Leu Ala Leu Cys Leu Tyr Asn Leu Ser Val Asp
 180 185 190
 Pro Thr Met Ser Cys Arg Val Ile Asn Ser Thr Asn Gly Gln Val Ile
 195 200 205
 Glu Leu Glu Lys Gln Asp Cys Ser Lys Leu Leu Ser Asp Arg Glu Lys
 210 215 220
 Thr Ile Leu Gln Leu Ile Asp Met Gly Lys Thr Ser His Glu Ile Ala
 225 230 235 240
 Arg Glu Leu Phe Ile Ser Lys Asn Thr Val Ser Arg His Arg Gln Asn
 245 250 255
 Ile Leu Glu Lys Leu Gln Val Lys Asn Ser Ile Glu Ala Cys Arg Ile
 260 265 270
 Ala Lys Glu Leu Lys Leu Leu Phe
 275 280

<210> 6418
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 6418
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 Leu Thr Phe Asn Tyr Tyr Ile Ile Ile Met Glu Thr Thr Ser Ile Lys

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Leu	Tyr	Ser	Leu	Asn	Tyr	Asn	Asp	Thr	Lys	Thr	Tyr	Leu	Thr	Thr	Leu		
		35					40					45					
Leu	Phe	Val	Val	Gly	Asn	Met	Ala	Leu	Pro	Gln	Leu	Phe	His	Leu	Ile		
		50				55					60						
Pro	Gln	Gly	Gly	Ile	Thr	Trp	Leu	Pro	Ile	Tyr	Phe	Phe	Thr	Leu	Ile		
65					70					75					80		
Gly	Ala	Tyr	Lys	Tyr	Gly	Trp	Lys	Val	Gly	Leu	Leu	Thr	Ala	Leu	Leu		
				85					90					95			
Ser	Pro	Val	Leu	Asn	Ser	Leu	Leu	Phe	Gly	Met	Pro	Gln	Pro	Val	Ile		
			100					105					110				
Leu	Pro	Ala	Ile	Leu	Leu	Lys	Ser	Thr	Leu	Leu	Ala	Ile	Ala	Ala	Gly		
		115					120					125					
Tyr	Ala	Ala	His	Arg	Tyr	Lys	Arg	Ile	Ser	Ile	Pro	Ile	Leu	Leu	Leu		
		130				135					140						
Val	Val	Leu	Ser	Tyr	Gln	Val	Val	Gly	Thr	Leu	Gly	Glu	Trp	Ile	Leu		
145					150					155					160		
Val	Asn	Asp	Phe	Phe	Ser	Ala	Val	Gln	Asp	Phe	Arg	Ile	Gly	Leu	Pro		
			165						170				175				
Gly	Met	Ala	Leu	Gln	Ile	Phe	Gly	Gly	Tyr	Leu	Phe	Ile	Ser	Arg	Leu		
			180					185					190				
Ile	Tyr	Lys															
		195															

<210> 6419
 <211> 87
 <212> PRT
 <213> B.fragilis

Asn	Gln	Pro	Thr	Ile	Leu	Tyr	Ile	Leu	Thr	Ser	Phe	Tyr	Tyr	Leu	Ser		
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Ser	Ile	Lys	Ser	Ile	Asn	Met	Asp	Ser	Ile	Gly	Lys	Arg	Met	Tyr	Arg		
			20					25					30				
Asn	Leu	Gly	Asp	Asp	Thr	Lys	Ala	Lys	Ile	Ser	Gln	Ser	Leu	Arg	Gly		
		35					40					45					
Arg	Ser	Lys	Ser	Ala	Ser	His	Ile	Gln	Ala	Ile	Ser	Gln	Gly	Met	Thr		
		50				55					60						
Asn	Tyr	Trp	Lys	Thr	Ile	Pro	Val	Lys	Thr	Asp	Asp	Asn	Pro	Ser	Asp		
65					70					75					80		
Lys	Thr	Lys	Lys	Glu	Gly	Gln											
				85													

<210> 6420
 <211> 212
 <212> PRT
 <213> B.fragilis

Thr	Ser	Asn	Thr	Met	Lys	Lys	Val	Val	Ile	Phe	Ala	Arg	Val	Ser	Ser		
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Thr	Asn	Gly	Thr	Gln	Asp	Tyr	Glu	Arg	Gln	Ile	Asn	Asp	Leu	Gln	Thr		
			20					25					30				
Leu	Ala	Ser	Ala	Asn	Asn	Trp	Thr	Val	Glu	Ala	Val	Phe	Ala	Glu	Lys		
		35					40					45					
Val	Ser	Gly	Ala	Lys	Lys	Asn	Thr	Glu	Arg	Ile	Glu	Leu	Met	Asn	Met		
		50				55					60						
Ile	Asn	Tyr	Ile	Asn	Ser	His	Asn	Ile	His	Lys	Val	Leu	Val	Thr	Glu		
65					70					75					80		

Leu Ser Arg Leu Gly Arg Asp Thr Leu Gln Val Leu Gln Ala Ile Glu
 85 90 95
 Ile Leu Asn Gln Asn Lys Val Ser Val Phe Ile Gln Asn Tyr Asn Ile
 100 105 110
 Glu Thr Leu Thr Pro Glu Gly Glu Ile Asn Pro Met Ser Gln Phe Leu
 115 120 125
 Ile Thr Ile Leu Ala Glu Val Ala Arg Met Glu Arg Lys Thr Ile Arg
 130 135 140
 Glu Arg Val Ala Ser Gly Tyr Gln Asn Phe Arg Ser Asn Gly Gly Lys
 145 150 155 160
 Val Gly Arg Lys Val Gly Tyr Thr Lys Ser Asp Glu Val Met Arg Glu
 165 170 175
 Glu Tyr Ala Glu Glu Leu Arg Leu Leu Lys Arg Gly Tyr Ser Leu Arg
 180 185 190
 Asn Thr Ser Lys Leu Thr Gly Thr Ser Ile Asn Thr Leu Arg Lys Leu
 195 200 205
 Thr Gln Leu Thr
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<210> 6421

<211> 447

<212> PRT

<213> B.fragilis

<400> 6421

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 20 25 30
 Ser Gln Tyr Pro Val Ser Glu Gln Cys Ala Gln Phe Leu Gly His Gly
 35 40 45
 Val Cys His His Ile Lys Gln Arg Leu Val Pro Val Phe Gln Ile Asp
 50 55 60
 Ile His His Pro Val Ile Arg Arg Ile Met Lys His Leu Pro Leu Ser
 65 70 75 80
 Gln Leu Ser Arg His His Ile Phe Ile Ile Val Arg His His Leu Thr
 85 90 95
 Asp Asp Gly Met Val Tyr Thr Phe Gly Leu Gln His Tyr Pro Ala Pro
 100 105 110
 Phe Ile Phe Ser Ser Gly Thr Ser Gly Asn Leu Arg His Gln Leu Glu
 115 120 125
 Gly Thr Phe Val Arg Thr Glu Ile Gly Ile Ile Gln His Arg Val Arg
 130 135 140
 Ile Glu Tyr Pro His His Ala Asp Val Val Lys Val Glu Ser Phe Gly
 145 150 155 160
 Tyr His Leu Gly Thr Asp Gln Tyr Ile Gly Leu Ser Leu Phe Lys Val
 165 170 175
 Cys Asn Asn Phe Phe Val Cys Arg Pro Arg Thr Cys Ser Ile Glu Ile
 180 185 190
 His Thr Cys Tyr Gly Ser Phe Arg Lys Asn Gln Leu His Ile Ile Phe
 195 200 205
 Tyr Leu Phe Arg Thr Lys Ser Ser Val His Gln Leu Asp Pro Phe Ala
 210 215 220
 Ser Arg Thr Arg Thr Gly Gln Leu Val Ser Ile Pro Ala Ile Val Ala
 225 230 235 240
 Ser Gln Leu Ile Asp Thr Phe Met Ile Gly Gln Ala Asp Ile Thr Val
 245 250 255
 Leu Ala Leu Trp His Pro Ser Ala Arg Ala Ala Leu Tyr His Arg Ser
 260 265 270

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Lys Ser Pro Ala Ile Leu Lys Gln Asn His Leu Leu Phe Ile Ile Glu
 275 280 285
 Cys Leu Ala Asp Ile Leu Gln Gln Gln Arg Arg Glu Leu Pro Arg His
 290 295 300
 Pro Leu Leu Ala Val Gln Leu Leu Tyr Ile Tyr Arg Asn Asn Leu Arg
 305 310 315 320
 Gln Leu Asn Phe Leu Ile Ala Phe Phe Gln Phe His Pro Pro Glu Phe
 325 330 335
 Ala Gly Ser Gly Ile Leu Pro Ser Leu His Arg Arg Ser Gly Ser Thr
 340 345 350
 Gln Gln Arg Leu Cys Pro Ile His Arg Ser Gln His Asp Gly Ser Ile
 355 360 365
 Pro Gly Met Ile Ala Arg Cys Gly Ile Leu Leu Leu Ile Arg Ile Phe
 370 375 380
 Val Phe Leu Val His Asn Asp Gln Ser Glu Ile Pro Lys Arg Glu Glu
 385 390 395 400
 His Arg Arg Ala Tyr Pro Gln Asn Asp Val Val Thr Leu Leu Arg Gln
 405 410 415
 Leu Leu Leu Pro Asp Leu Tyr Ser Leu Gly Val Gly Glu Leu Gly Val
 420 425 430
 Ile Asp Ser Gln Pro Gly Asn Arg Thr Pro Val Ser Ala Val Arg
 435 440 445

<210> 6422
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6422
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 Met Arg Glu Leu Asn Val Gly Gly Phe Ala Ala Cys Leu Ser Val Tyr
 20 25 30
 Pro Glu Lys Ala Arg His Lys Lys Asn Lys Phe Lys Thr Ala Cys Asn
 35 40 45
 Gln Ile Arg Ser Ala Met Asn Arg Thr Glu Thr Tyr Asn Ser Thr Thr
 50 55 60
 Gln
 65

<210> 6423
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6423
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 Ile Leu Lys Val Arg Lys Ser Ile Leu Ile Cys Leu Asp Gln Asp Ile
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 Glu Lys Ala Gln Arg Thr Val Asp Glu Lys Gln Ala Ala Val Asp Gly
 35 40 45
 Leu Asn Ala Thr Leu Lys Lys Leu Leu Asp Ala Tyr Ala Ala Glu
 50 55 60

<210> 6424
 <211> 419
 <212> PRT
 <213> B.fragilis

<400> 6424

Pro Asn Arg Ala Ile Gly Ile Ile Thr Asn Met Asn Lys Leu Leu Met
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 Pro Phe Met Thr Leu Val Cys Leu Leu Phe Thr Ala Cys Asn Lys Asp
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 Asp Ile Leu Pro Gly Gly Pro Met Leu Trp Thr Tyr Glu Ile Leu Thr
 35 40 45
 Pro Glu Ser Val Glu Tyr Glu Gly Gly Thr Val Gly Trp Ile Pro Lys
 50 55 60
 Glu Cys Phe Lys Ala Asn Gly Asn Glu Gly Tyr Ile Val Met Thr Cys
 65 70 75 80
 Lys Asn Phe Asp Met Leu Asn Pro Ile Ser Gly Gly Ser Tyr Thr Tyr
 85 90 95
 Asp Cys Gly Trp Ala Thr Leu Lys Val Glu Ala Asn Gln Leu Lys Ile
 100 105 110
 His Phe Pro Arg Gln Val Ser Glu Ala Pro Asp Ala Tyr Glu Glu Ile
 115 120 125
 Thr Ile Ser Thr Asn Asp Gly Lys Arg Thr Ala Ser Thr Ile Ile Cys
 130 135 140
 Leu Ser Arg Thr Phe Lys Asp Glu Gly Gln Pro Asp Pro Glu Pro Lys
 145 150 155 160
 Pro Leu Pro Glu Glu Ala Lys Phe Lys Met Lys Lys Ala Tyr Phe Thr
 165 170 175
 Pro Phe Met His Leu Asp Thr Gln Phe Pro Ala Pro Leu Asp Leu Val
 180 185 190
 Thr Phe Arg Ile Thr Asp Ile Asn Asp Asn Tyr Thr Pro Leu Gly Phe
 195 200 205
 Pro Glu Phe Thr Gln Tyr Tyr Asp Ser Ile Val Trp Ser Ala Glu Gly
 210 215 220
 Phe Pro His Thr Phe Arg Val Tyr Glu Ser Asn Thr Thr Glu Gly Gly
 225 230 235 240
 Met Glu Thr His Leu Ala Thr Glu Trp Ser Ser His Phe Phe Lys Ser
 245 250 255
 Gly Thr Ile Lys Asn Tyr Leu Lys Gly Tyr Arg Lys Gly Lys Val Glu
 260 265 270
 Tyr Glu Thr Ser Leu Ala Val Arg Leu Tyr Glu Arg Asp Phe Leu Gly
 275 280 285
 Ile Glu Trp Gly Thr Ile Val Leu Gln Ser Pro Gln Asn Leu Thr Thr
 290 295 300
 Tyr Cys Leu Leu Asp Thr Asp Tyr Glu Tyr Gln Val Tyr Asp Ile Val
 305 310 315 320
 Ala Lys Asp Tyr Asn Pro Phe Ser Lys Ile Ile Pro Val Asn His Lys
 325 330 335
 Gln Leu Ser Asp Ser Asp Phe Pro Ala Ala Ala Gln Lys Ala Ile Lys
 340 345 350
 Thr Leu Met Glu Asn Asn Ile Gly Glu Gly Gln Asn Ala Gly Gly Lys
 355 360 365
 Glu Asn Leu Phe Lys Cys Leu Pro Glu Glu Gly Val Lys Ala Glu Leu
 370 375 380
 Tyr Trp Glu Asn Lys Thr Thr Arg Ile Leu Met Leu His Gln Leu Ser
 385 390 395 400
 Thr Asp Pro Asp Asp Leu Thr Gln Glu Lys Tyr Tyr Leu His Val Glu
 405 410 415
 Pro Lys Gln

<210> 6425

<211> 431

<212> PRT

<213> B.fragilis

<400> 6425

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
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Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55				60					
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65				70					75					80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85				90						95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
		100					105						110		
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile
	115						120					125			
Asn	Ala	Leu	Val	Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp
	130					135				140					
Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Ala	Lys
145				150					155					160	
Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr	Arg	Pro	Gly	Val	Tyr	Val	Ile
			165					170						175	
Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn	Ser	Asp	Gly	Asn	Thr	Asn	Val
		180					185						190		
Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe	Phe	Ala	Leu	Leu	Glu
	195					200						205			
Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala	Asp	Cys	Gly	Ser	Cys
	210					215					220				
Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu	Lys	His	Cys	Lys	His	Phe	Tyr
225				230					235					240	
Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu	Tyr	Asn	Asp	Ile	Phe	Ala	Leu
		245						250					255		
Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn	Gly	Ile	Gln	Phe	Glu	Leu	Asn
		260					265						270		
Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly	Lys	Cys	Tyr	Arg	Leu	Val	Ile
	275						280					285			
Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp	Leu	Asp	Leu	Trp	Glu	Gly	Glu
	290				295						300				
Tyr	Thr	Tyr	Arg	Cys	Ile	Leu	Thr	Asn	Asp	Tyr	Lys	Ser	Ser	Thr	Arg
305				310					315					320	
Asp	Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly	Lys	Glu	Arg	Ile	Phe
			325					330						335	
Asp	Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg	Leu	Pro	Lys	Ser	Phe
		340					345						350		
Met	Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Leu	Thr	Ala	Leu	Ile	His	Asn
	355						360					365			
Phe	Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr	Lys	Ala	Phe	Gly	Leu
	370					375					380				
Lys	Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe	Arg	Phe	Ile	Ser	Val
385				390					395					400	
Pro	Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr	Val	Leu	Asn	Ile	Tyr
			405					410						415	
Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu	Phe	Gly	
			420					425					430		

<210> 6426
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 6426
 Leu Asn Ser Tyr Lys Met Lys Lys Asn Val Phe Ile Leu Phe Val Val
 1 5 10 15
 Leu Leu Thr Thr Ser Val Phe Met Ser Cys Ser Ser Asp Asp Asp Asn
 20 25 30
 Asp Asn Gly Lys Val Glu Asn Thr Ile Ile Ile Asn Gly Lys Glu Tyr
 35 40 45
 Leu Asn Asp Glu Ser Ala Ser Val Ser Tyr Asn Ser Tyr Ser Gln Ser
 50 55 60
 Ile Ser Phe Glu Ala Gly Phe Ser Asn Pro Glu Ser Leu Met Asp Ile
 65 70 75 80
 Ser Tyr Phe Thr Ile Ala Ser Asn Asp Ala Ala Ser Val Asp Lys Leu
 85 90 95
 Thr Asn Gly Met Glu Leu Asn Ala Lys Val Lys Glu Phe Val Lys Asn
 100 105 110
 Thr Asp Leu Gly Ser Ser Tyr Thr Tyr Thr Thr Val Gly Gly Lys Val
 115 120 125
 Val Val Asp Asn Val Thr Ser Glu Ser Ile Thr Leu Arg Tyr Asp Asp
 130 135 140
 Phe Lys Phe Thr Lys Asn Gly Gly Glu Tyr Thr Ile Lys Gly Arg Val
 145 150 155 160
 Leu Tyr His Lys Asn
 165

<210> 6427
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6427
 Pro Thr Asp Tyr Gln Thr Ile Tyr Ile Phe His Phe Cys His Phe Thr
 1 5 10 15
 Pro Leu Phe Cys Tyr Leu Val His Phe Glu Phe Ser Phe Ser Phe Ala
 20 25 30
 Pro Leu Gln Tyr Arg Lys Thr Lys Glu Asn Gln Leu Phe Ser Val Ile
 35 40 45
 Thr Arg Leu Trp Tyr Leu Asn Arg Asp Lys Thr Ser Ser Val Trp Gln
 50 55 60
 Arg
 65

<210> 6428
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6428
 Lys Lys Cys Tyr Val Ser Lys Ser Met Phe Ser Leu Ala Asp Asp Gly
 1 5 10 15
 Leu Ala Ser Ile Leu Cys Asn Thr Ser Ile Tyr Ser Tyr Phe Val Gly
 20 25 30
 Asn Pro Lys Gln Thr Ile Glu Gly Cys Lys Trp Arg Phe Ala Lys Arg
 35 40 45
 Asn Ser Ser Lys Arg Glu Ser Leu Phe Ile Ile Arg Tyr Lys Lys Glu

50

55

60

<210> 6429

<211> 66

<212> PRT

<213> B.fragilis

<400> 6429

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Ser Leu Leu Tyr Pro Ser Ile Phe Leu Pro Ile Phe Leu Glu Tyr Ser
1          5          10          15
Asp Phe Gly Cys Asp Phe Gly Tyr Ser Thr Tyr Asn Ser Gly Trp Ser
          20          25          30
Cys Phe Val Ile Ser Lys Tyr Gly Lys Gln Tyr Ile Ala Glu Lys Asp
          35          40          45
Lys Cys Met Asn Gly Pro Phe Asn Leu Phe Lys Val Leu Glu Leu Pro
          50          55          60
Gln His
65

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<210> 6430

<211> 192

<212> PRT

<213> B.fragilis

<400> 6430

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Phe Ile Ser Tyr Ser Glu Phe Ile Met Val Asn Glu Leu Asn Lys Glu
1          5          10          15
Met Asp Val Asp Lys Tyr Lys Ile Arg Ser Trp Ser Lys Asp Asp Phe
          20          25          30
Ser Thr Leu Ala Lys Tyr Leu Asn Asn Lys Lys Ile Trp Asp Asn Cys
          35          40          45
Arg Asp Ser Leu Pro Tyr Pro Tyr Ser Glu Asn Asp Ala Gln Gln Phe
          50          55          60
Ile Leu Ser Val Ser Ser Gln Asn Glu Gln Asn Asn Tyr Cys Ile Glu
65          70          75          80
Val Asn Gln Glu Ala Ala Gly Asn Ile Ser Phe Ala Arg Gly Ile Asp
          85          90          95
Val Glu Arg Tyr Asn Ala Glu Leu Gly Tyr Trp Leu Ala Glu Pro Tyr
          100          105          110
Trp Gly Lys Gly Ile Met Thr Gln Met Leu Ala Leu Ala Ile Ser Ser
          115          120          125
Tyr Phe His His Thr Asp Val Met Arg Ile Cys Ala Asn Val Tyr Ala
          130          135          140
Gly Asn Ile Ala Ser Met Arg Val Leu Glu Lys Ile Gly Phe Arg Lys
145          150          155          160
Cys Gly Ile His Arg Asn Ala Cys Phe Lys Asn Gly Val Phe Thr Asp
          165          170          175
Cys His Tyr Phe Glu Leu Leu Lys Glu Glu Phe Arg Asn Leu Val Lys
          180          185          190

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<210> 6431

<211> 235

<212> PRT

<213> B.fragilis

<400> 6431

```

Leu Leu Ala Tyr Asn Thr Leu Leu Leu Lys Trp Phe Tyr Ile Ser Leu
1          5          10          15
Cys Val Glu Arg Asp Ile Phe Gln Phe Ile Met Asn Gly Phe Phe Leu

```



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<210> 6434
<211> 91
<212> PRT
<213> B.fragilis
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<210> 6435
<211> 459
<212> PRT
<213> B.fragilis
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<400> 6435															
Leu	Ala	Tyr	His	Leu	Pro	Ile	Gln	Arg	Gln	Phe	Ile	Gln	Leu	Ser	Leu
1				5					10					15	
Pro	Lys	Ile	Lys	Lys	Lys	Asp	Met	Ile	Leu	Gln	Leu	Ala	Phe	Val	Leu
			20				25						30		
Thr	Ala	Ile	Ile	Ile	Gly	Ala	Arg	Leu	Gly	Gly	Ile	Gly	Leu	Gly	Val
		35				40						45			
Met	Gly	Gly	Val	Gly	Leu	Gly	Ile	Leu	Thr	Phe	Ala	Phe	Gly	Leu	Gln
	50					55				60					
Pro	Thr	Ala	Pro	Pro	Ile	Asp	Val	Met	Leu	Met	Ile	Ala	Ala	Val	Ile
65					70					75					80
Ser	Ala	Ala	Ser	Cys	Met	Gln	Ala	Ala	Gly	Gly	Leu	Asp	Tyr	Met	Val

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<210> 6436
<211> 327
<212> PRT
<213> B.fragilis
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<400> 6436
Leu Lys Thr Gln Thr Trp Arg Phe Met Lys Lys Leu Met Leu Leu Thr
1 5 10 15
Leu Leu Ser Thr Phe Ile Phe Tyr Ser Cys Ser Asp Asp Asp Ser Cys
20 25 30
Thr Thr Cys Lys Glu Asp Asn Gly Ser Leu Val Thr Pro Asp Leu Ser

35	40	45
Val Thr Leu Ser Asp Thr	Gln Ser Pro Met Thr	Gly Val Leu Glu Ala
50	55	60
Tyr Pro Cys Gln Ala Gly	Gly Ala Ile Tyr Tyr	Gly Asn Tyr Ile Glu
65	70	75
Gly Lys Leu Thr Ser Phe	Pro Gly Met Tyr Tyr	Leu Gln Asn Gly Glu
85	90	95
Ile Tyr Gly Asp Lys Asn	Arg Glu Ile Ser Leu Pro	Val Gly Thr Tyr
100	105	110
Asn Met Ile Tyr Trp Gly	Thr Pro Lys Tyr Glu Glu	Leu Ile Tyr Ser
115	120	125
Asn Pro Val Val Val Ala	Pro Gln Ile Thr Ile Gly	Gly Asp Leu Ser
130	135	140
Gln Gln Tyr Phe Gly Leu	Arg Lys Val Ser Ala Asp	Thr Thr Tyr Tyr
145	150	155
Pro Val Phe Asp Leu Val	Tyr Thr Val Lys Pro Ala	His Ile Gly Thr
165	170	175
Glu Glu Leu Ser Ala Ala	Met Gln Arg Val Val Ala	Gly Leu Lys Val
180	185	190
Ile Val Lys Asn Lys Asn	Asn Gly Ile Leu Ser Ser	Ser Ile Ala Gly
195	200	205
Met Glu Val His Val Gly	Gly Ile Ala Glu Lys Leu	Asn Met Tyr Thr
210	215	220
Ala Ala Pro Val Asn Gln	Thr Lys Thr Val Ser Phe	Pro Leu Val Leu
225	230	235
Ser Ala Asp Gly Thr Gln	Met Ser Asn Ala Thr Val	Met Leu Phe Pro
245	250	255
Ser Ser Ala Lys Pro Met	Phe Lys Leu Ile Ile Lys	Leu Lys Asn Gly
260	265	270
Asn Thr Lys Val Tyr Gln	Gln Pro Leu Asn Ala Pro	Leu Lys Ala Asn
275	280	285
Asn Lys Leu Thr Leu Thr	Leu Thr Leu Gly Asp Ile	Phe Ser Glu Glu
290	295	300
Thr Ser Gly Gly Phe Thr	Ile Asp Asn Trp Gln Glu	Glu Asn Glu Thr
305	310	315
Ile Asp Ile Pro Thr Leu	Glu	
325		

<210> 6437

<211> 83

<212> PRT

<213> B.fragilis

<400> 6437

Val Pro Glu Gln Gln Lys	Val Ala Gln Asp Phe Ala	Met Ser Glu Phe
1	5	10
Ser Leu Ile Leu Val Leu	Gln Lys Glu Asn Lys Gln	Asn Ser Asn Met
20	25	30
Thr Trp Gln Lys Tyr Lys	Leu Asn Leu Arg Asn Ser	His Leu Leu Glu
35	40	45
Glu Phe Phe Gln Ser Trp	Arg Asn Leu Thr Pro Cys	Phe His Pro Leu
50	55	60
Ser Thr Gln His Trp Val	Arg Asp Ala Ala Val Ser	Ser Asp Ile Ser
65	70	75
Ser Ala Arg		

<210> 6438

<211> 224

<212> PRT

<213> B.fragilis

<400> 6438

Asn	Lys	His	Asn	Gln	Lys	Val	Glu	Met	Lys	Lys	Val	Cys	Leu	Ser	Leu
1			5						10					15	
Leu	Met	Gly	Leu	Met	Val	Gln	Met	Thr	Phe	Gly	Gln	Thr	Leu	Glu	Lys
			20					25					30		
Met	Gln	Trp	Phe	Asn	Glu	Pro	Glu	Gln	Trp	Glu	Ile	Lys	Asn	Asn	Val
		35					40					45			
Leu	Ser	Met	Ser	Val	Thr	Pro	Gln	Ser	Asp	Tyr	Trp	Arg	Ile	Ser	His
	50					55					60				
Tyr	Gly	Phe	Thr	Val	Asp	Asp	Ala	Pro	Phe	Tyr	Tyr	Ala	Thr	Tyr	Gly
65					70					75					80
Gly	Glu	Phe	Glu	Ala	Lys	Val	Lys	Val	Val	Gly	Glu	Tyr	Lys	Glu	Arg
				85					90					95	
Phe	Asp	Gln	Ala	Gly	Leu	Met	Leu	Arg	Ile	Asp	His	Glu	Asn	Tyr	Ile
			100					105						110	
Lys	Ala	Gly	Ile	Glu	Phe	Val	Asp	Gly	Lys	Phe	Asn	Leu	Ser	Thr	Val
		115					120						125		
Val	Thr	His	Lys	Thr	Ser	Asp	Trp	Ser	Val	Ile	Thr	Leu	Asp	Lys	Thr
	130					135						140			
Val	Pro	Tyr	Ile	Trp	Ile	Lys	Ala	Val	Arg	Arg	Leu	Asp	Ala	Val	Glu
145					150					155					160
Ile	Phe	Tyr	Ser	Phe	Asp	Asp	Lys	Thr	Tyr	Thr	Leu	Met	Arg	Asn	Ala
				165					170					175	
Trp	Leu	Gln	Asp	His	Ile	Pro	Val	Lys	Val	Gly	Leu	Met	Ala	Ala	Cys
			180					185					190		
Pro	Asp	Gly	Ser	Gly	Phe	Asn	Ala	Lys	Phe	Glu	Tyr	Phe	Gln	Val	Lys
		195					200					205			
His	Leu	Pro	Asp	Gln	Arg	Arg	Val	Glu	Trp	Leu	Lys	Lys	Asn	Ala	Glu
	210					215					220				

<210> 6439

<211> 229

<212> PRT

<213> B.fragilis

<400> 6439

Ile	Leu	Asn	Lys	Ser	Arg	Ile	Leu	Arg	Lys	Ser	Pro	Arg	Ser	Ala	Leu
1			5						10					15	
Gly	Tyr	Ala	Trp	Gly	Asp	Phe	Phe	Ile	Thr	His	Ser	Arg	Met	Ile	Lys
			20					25					30		
Lys	Met	Lys	Gly	Ile	Trp	Pro	Glu	Val	Phe	Pro	Ala	Val	Phe	Glu	Glu
		35					40					45			
Gly	Gly	Leu	Tyr	Pro	Cys	His	Pro	Lys	Arg	Glu	Leu	Pro	Leu	Lys	Arg
	50					55				60					
Asp	Gly	Ala	Asn	Pro	Lys	Leu	Lys	Gly	Arg	Thr	Ile	Asn	Leu	Gln	Asn
65					70					75					80
Ala	Val	Lys	Lys	Cys	Asn	Arg	Leu	Cys	Pro	Leu	Arg	Tyr	Asp	Ser	Ile
				85					90					95	
Thr	Val	Ser	Glu	Gly	Arg	Phe	Met	Phe	Asn	Gly	Lys	Val	Thr	Ala	Pro
			100					105						110	
Gln	Val	Arg	Glu	Leu	Phe	Ile	Gln	Glu	Thr	Asp	Ser	Asp	Arg	Phe	Pro
		115					120						125		
Val	Thr	Leu	Pro	Val	Val	Leu	Asp	Pro	Gly	Glu	Ile	Asn	Ala	Lys	Ile
	130					135						140			
Gly	Asp	Ile	Val	Leu	Val	Glu	Gly	Ser	Gly	Leu	Asn	Glu	Glu	Met	Met
145					150					155					160

Gln Thr Leu Met Ala Leu Asp Glu Phe Arg Gly Arg Asp Phe Thr Gly
 165 170 175
 Lys Glu Ile Asn Glu Ile Lys Glu Ala Phe Gly Gly Phe Val Leu Glu
 180 185 190
 Gln Ile Val Lys His Ala Gly Ser Pro Val Gly Asn Tyr Leu Tyr Glu
 195 200 205
 Ala Tyr Gln Asn Lys Leu Asn Glu Lys Gln Gln Ala Glu Ala Arg Lys
 210 215 220
 Thr Leu Gly Ile Gly
 225

<210> 6440
 <211> 123
 <212> PRT
 <213> B.fragilis

<400> 6440
 Leu Ile Asn Lys Gly Val Met Lys Asn Tyr Gln Lys Lys Ser Val Ala
 1 5 10 15
 Gln Asp Ala Arg Val Glu Leu His Asp Ser Leu Ala Leu Thr Gly Ala
 20 25 30
 Glu Val Ser Ile Asn His Leu Pro Ala Gly Ala Gly Val Pro Phe Val
 35 40 45
 His Ser His Lys Gln Asn Glu Ile Tyr Gly Ile Leu Ser Gly Lys
 50 55 60
 Gly Phe Ile Thr Ile Asp Gly Glu Lys Ile Glu Leu Gln Ala Gly Asp
 65 70 75 80
 Trp Leu Arg Ile Ala Pro Asp Gly Lys Arg Gln Ile Ser Ala Ala Ser
 85 90 95
 Asp Ser Pro Ile Gly Phe Ile Cys Ile Gln Val Lys Ala Gly Ser Leu
 100 105 110
 Glu Gly Tyr Thr Met Thr Asp Gly Val Val Gln
 115 120

<210> 6441
 <211> 314
 <212> PRT
 <213> B.fragilis

<400> 6441
 Asn Lys Asn Lys Met Lys Glu Lys Asp Leu Ile Arg Phe Met Asp Arg
 1 5 10 15
 Met Ile Glu Glu Arg Lys Ala Glu Tyr Ala Leu Gly Thr Ala His Ile
 20 25 30
 Tyr Gln Ala Ser Arg Asn Ala Leu Ser Ala Phe Leu Lys Ala His Asp
 35 40 45
 Ile Pro Phe Lys Arg Val Arg Pro Glu Leu Leu Lys Gln Phe Glu Arg
 50 55 60
 Phe Leu Arg Arg Arg Gly Asn Ser Trp Asn Thr Val Ser Thr Tyr Met
 65 70 75 80
 Arg Val Leu Arg Ala Val Tyr Asn Arg Ala Val Asp Arg Arg Leu Ala
 85 90 95
 Pro His Val Pro His Leu Phe Lys Ala Val Tyr Thr Gly Thr Gln Ala
 100 105 110
 Asp Ile Lys Arg Ala Leu Lys Ala Glu Glu Met Gly Gln Leu Leu Asp
 115 120 125
 Thr Lys Cys Thr Arg Lys Gln Ser Glu Leu Leu Gln Lys Thr His His
 130 135 140
 Leu Phe Val Leu Met Phe Leu Leu Arg Gly Leu Pro Phe Val Asp Leu

145		150		155		160									
Ala	Tyr	Ile	Gln	Lys	Lys	Asp	Leu	Asn	Gly	Asn	Ile	Leu	Thr	Tyr	His
		165				170								175	
Arg	Arg	Lys	Thr	Gly	Arg	Gln	Ile	Thr	Ile	Thr	Val	Thr	Lys	Asp	Ala
		180				185								190	
Met	Asn	Ile	Ile	Arg	Glu	Tyr	Met	Asp	Thr	Thr	Thr	Glu	Ser	Pro	Tyr
		195				200								205	
Leu	Phe	Pro	Ile	Leu	Ser	Ala	Glu	Gly	Gly	Glu	Asp	Thr	Ile	Tyr	Arg
		210				215								220	
Glu	Tyr	Gln	Gln	Ala	Leu	Arg	Ile	Phe	Asn	Tyr	Gln	Leu	Thr	Lys	Leu
		225				230								235	
Gly	Glu	Leu	Leu	Gly	Leu	Thr	Thr	Glu	Leu	Thr	Ser	Tyr	Thr	Ala	Arg
				245										250	
His	Thr	Trp	Ala	Thr	Leu	Ala	Tyr	Tyr	Leu	Glu	Val	His	Pro	Gly	Ile
			260											270	
Ile	Arg	Glu	Ala	Met	Gly	His	Ser	Ser	Ile	Lys	Val	Thr	Glu	Thr	Tyr
		275												285	
Leu	Lys	Pro	Phe	Asn	Ile	Lys	Lys	Leu	Asp	Glu	Thr	Asn	Leu	Ser	Ile
		290				295								300	
Ile	Ser	Tyr	Ala	Lys	Arg	Ser	Phe	Glu	Gly						
		305				310									

<210> 6442
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 6442
Asn Met His Asn Met Asp Asn Lys Gln Glu Arg Thr Val Val His Val
1 5 10 15
Glu Tyr Asn Gly Gln His Tyr Tyr Phe Gly Ser Leu Ser Ala Ile Tyr
20 25 30
Thr Lys Phe Ser Pro Lys Asp Leu Gly Ile Ala Leu Gly Thr Leu Arg
35 40 45
Asn Tyr Gly Leu Lys Glu Glu Lys Pro Tyr Gln Asn Ser Leu Cys Thr
50 55 60
Ile Arg Lys Gly Phe Leu Ile Thr Met Pro Lys Lys
65 70 75

<210> 6443
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 6443
Pro Val Cys Lys Asp Lys Pro Phe Pro Leu Leu Ser Gln Met Ile Thr
1 5 10 15
Ile Glu Lys Met Asn Glu Gln Gln Leu Phe Ile Lys Ile Gly Asp Lys
20 25 30
Ile Lys Glu Ile Arg Leu Glu Lys Gly Ile Ser Gln Gln Asp Leu Ala
35 40 45
Ala Lys Cys Asn Phe Glu Lys Ala Asn Met Ser Arg Ile Glu Ala Gly
50 55 60
Arg Thr Asn Leu Thr Ile Lys Asn Ala Tyr Lys Ile Ser Leu Ala Leu
65 70 75 80
Gly Val Arg Leu Lys Asp Leu Leu Asp Val Glu
85 90

<210> 6444

<211> 60
 <212> PRT
 <213> B.fragilis

<400> 6444
 Thr Asp Leu Asn Lys Lys Thr Leu Gly Arg Arg Glu Phe Leu Ile Gly
 1 5 10 15
 Cys Cys Leu Tyr Arg Lys Glu Pro Ile Lys Pro Thr Asn Ile Met Lys
 20 25 30
 Glu Phe Met Leu Ile Ala Ser Leu Val Leu Ser Phe Cys Ile Leu Ile
 35 40 45
 Leu Cys Arg Asp Tyr Ile Val Phe Met Leu Lys Lys
 50 55 60

<210> 6445
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 6445
 Arg Met Ala Lys Ile Glu Asn Lys Thr Lys Glu Asn Pro Lys Leu Glu
 1 5 10 15
 Gln Asn Lys Leu Ser Asp Gly Arg Ile Ser Leu Tyr Leu Glu Tyr Tyr
 20 25 30
 Leu Gly Arg Glu Glu Lys Pro Val Leu Asp Ala Asn Gly Asn Gln Val
 35 40 45
 Tyr Tyr Glu Asp Gly Lys Met Gln Gly Lys Pro Lys Phe Ser Val Lys
 50 55 60
 His Asn Arg Arg Lys Glu Asn Leu Asn Leu Tyr Leu Met Asp Lys Pro
 65 70 75 80
 Arg Thr Pro Ala Lys Arg Gln Gln Asn Lys Glu Thr Leu Glu Leu Ala
 85 90 95
 Thr Lys Ile Arg Ala Glu Arg Glu Gln Glu Phe Lys Glu Ser Met Leu
 100 105 110
 Gly Tyr Arg Leu Lys Lys Asp Cys Thr Ile Asn Phe Leu Asp Tyr Phe
 115 120 125
 Gln Ala Tyr Ile Asp Ser Tyr Thr Lys Lys Asp Cys Ala Trp Cys Lys
 130 135 140
 Leu His Leu Ala Val Ser Lys Thr Ser
 145 150

<210> 6446
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6446
 Ser Ile Gln Asn His Ser Gln Ser His Tyr Ile Leu Gly Lys Trp Glu
 1 5 10 15
 Gly Arg Cys Trp Asp Ile Glu Asp Phe Ile Ile Ser Leu Asn Tyr Gln
 20 25 30
 Ser Lys Leu Gln Leu Thr Ile Tyr Pro Gln Gln Tyr Leu Ala Gln Ser
 35 40 45
 Glu Arg Glu Val Gln Leu Gln Thr Asn Ser Asn Asn Asn Thr Asn
 50 55 60

<210> 6447
 <211> 848
 <212> PRT

<213> B.fragilis

<400> 6447

Thr	Asn	Arg	Lys	Met	Lys	Asn	Ala	Ile	Val	Ser	Leu	Leu	Leu	Leu	Leu
1				5					10					15	
Met	Val	Thr	Gln	Tyr	Val	Thr	Ala	Gln	Lys	Lys	Val	Ile	Lys	Ile	Ala
			20					25					30		
Cys	Ile	Gly	Asn	Ser	Ile	Thr	Tyr	Gly	Val	Gly	Thr	Arg	Asn	Pro	Ala
		35					40					45			
Lys	Asp	Ser	Tyr	Pro	Ala	Val	Leu	Gly	Gln	Met	Leu	Gly	Asp	Gly	Tyr
	50					55					60				
Glu	Val	Arg	Asn	Phe	Gly	Val	Ser	Ala	Arg	Thr	Met	Leu	Met	Lys	Gly
65					70					75					80
Asp	His	Pro	Tyr	Met	Lys	Glu	Glu	Arg	Tyr	Arg	Gln	Ala	Leu	Ala	Tyr
				85					90					95	
Asn	Pro	Asp	Ile	Val	Thr	Ile	Lys	Leu	Gly	Thr	Asn	Asp	Thr	Lys	Pro
			100					105					110		
Gln	Asn	Trp	Arg	Tyr	Lys	Ser	Asp	Phe	Lys	Lys	Asp	Met	Glu	Thr	Met
		115					120					125			
Ile	Arg	Thr	Ile	Arg	Ala	Leu	Pro	Ser	Lys	Pro	Glu	Ile	Tyr	Leu	Cys
130						135					140				
Tyr	Pro	Ile	Pro	Ala	Tyr	Ala	Val	Gln	Trp	Gly	Ile	Asn	Asp	Ser	Thr
145					150					155					160
Ile	Val	His	Gly	Val	Met	Pro	Val	Ile	Asp	Gln	Leu	Ala	Ala	Lys	Tyr
			165						170					175	
Arg	Leu	Lys	Val	Ile	Asp	Leu	His	Thr	Pro	Leu	Ile	Gly	Met	Lys	Glu
			180					185					190		
Cys	Phe	Ala	Asp	His	Val	His	Pro	Asn	Glu	Lys	Ala	Ala	Ala	Cys	Ile
	195						200				205				
Ala	Arg	Val	Ile	Tyr	Arg	Gln	Leu	Thr	Gly	Lys	Glu	Ala	Pro	Glu	His
210						215					220				
Val	Ser	Gln	Pro	Phe	Pro	Gly	His	Lys	Ser	Lys	Trp	Gln	Gly	Phe	Asp
225					230					235					240
Gln	Tyr	Thr	Phe	Thr	Tyr	Gln	Asp	Arg	Gln	Ala	Ile	Val	Val	Cys	Pro
			245						250					255	
Glu	Arg	Ala	Ala	Ala	Gly	Asn	Pro	Trp	Ile	Trp	Arg	Pro	Ala	Phe	Phe
			260					265					270		
Gly	Ala	Phe	Ala	Ser	Val	Asp	Glu	Ala	Leu	Leu	Lys	Arg	Gly	Phe	His
		275					280					285			
Val	Ala	Tyr	Tyr	Asp	Leu	Thr	His	Leu	Tyr	Gly	Ser	Pro	Arg	Ala	Arg
290						295					300				
Lys	Ser	Gly	Thr	Asp	Phe	Tyr	Trp	Asn	Met	Val	Gln	Met	Tyr	Gly	Leu
305					310					315					320
Ser	Pro	Arg	Val	Thr	Leu	Glu	Gly	Phe	Ser	Arg	Gly	Gly	Leu	Phe	Ala
			325						330					335	
Tyr	Asn	Trp	Ala	Ala	Asp	His	Pro	Asp	Lys	Val	Ala	Cys	Ile	Tyr	Val
			340					345					350		
Asp	Ala	Pro	Val	Cys	Asp	Val	Phe	Ser	Trp	Pro	Gly	Arg	Ser	Ser	Gly
		355					360					365			
Asn	Ala	Gly	Leu	Trp	Lys	Gly	Met	Leu	Asp	Glu	Trp	Gly	Leu	Thr	Glu
370						375						380			
Ala	Arg	Met	Asn	Thr	Phe	Pro	Gly	Asn	Pro	Ile	Asp	Arg	Leu	Lys	Pro
385					390					395					400
Leu	Ala	Asp	Ala	Arg	Ile	Pro	Val	Ile	Cys	Val	Cys	Gly	Asp	Ser	Asp
			405						410					415	
Arg	Val	Val	Pro	Phe	Ser	Glu	Asn	Ser	Ala	Val	Val	Arg	Gln	Arg	Tyr
			420					425					430		
Thr	Ala	Met	Gly	Ala	Pro	Phe	Glu	Leu	Ile	Leu	Lys	Pro	Gly	Val	Asp
		435					440					445			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

His	His	Pro	His	Ser	Leu	Glu	Asn	Pro	Thr	Pro	Val	Val	Asp	Phe	Ile
450						455					460				
Val	Arg	His	Gln	Ala	Gly	Tyr	Glu	Ala	Gly	Gln	Cys	Tyr	Thr	Leu	Arg
465					470					475					480
Gly	Asn	Tyr	Gln	Asn	Ser	Tyr	Arg	Lys	Phe	Glu	Lys	Glu	Arg	Val	Gly
			485						490					495	
Thr	Val	Ala	Phe	Leu	Gly	Gly	Ser	Ile	Thr	Glu	Met	Lys	Gly	Trp	Arg
		500						505					510		
Asp	Met	Ile	Cys	Glu	Asp	Leu	Lys	Gln	Arg	Phe	Pro	Tyr	Thr	Lys	Phe
	515						520					525			
Thr	Phe	Val	Ala	Ala	Gly	Ile	Pro	Ser	Thr	Gly	Ser	Thr	Pro	Gly	Ala
	530					535						540			
Phe	Arg	Leu	Thr	Asp	Asp	Val	Leu	Ser	Lys	Gly	Lys	Val	Asp	Leu	Leu
545					550					555					560
Phe	Val	Glu	Ala	Ala	Val	Asn	Asp	Asp	Thr	Asn	Gly	Phe	Ser	Ala	Ile
			565						570					575	
Glu	Gln	Val	Arg	Gly	Met	Glu	Gly	Ile	Val	Arg	His	Ala	Leu	Val	Ser
		580						585					590		
Asn	Pro	Ser	Met	Asp	Ile	Met	Met	Leu	His	Phe	Ile	Tyr	Asp	Pro	Phe
	595					600						605			
Ile	Pro	Lys	Leu	Asp	Lys	Gly	Gln	Met	Pro	Asp	Val	Ile	Leu	Asn	His
	610					615					620				
Glu	Arg	Val	Ala	Asn	His	Tyr	Leu	Leu	Pro	Ser	Val	Asn	Leu	Ala	Ser
625					630					635					640
Glu	Ile	Ala	Ala	Arg	Met	Arg	Ser	Gly	Glu	Phe	Thr	Trp	Glu	Gln	Phe
			645						650					655	
Gly	Gly	Thr	His	Pro	Asn	Pro	Leu	Gly	His	Ala	Tyr	Tyr	Ala	Ala	Thr
		660						665					670		
Ile	Asn	Lys	Val	Leu	Asp	Glu	Met	Tyr	Ala	Pro	Cys	Ala	Thr	Ala	Lys
	675					680						685			
Asp	Ala	Ala	Lys	Pro	His	Ala	Leu	Pro	Ala	Val	Pro	Leu	Asp	Ala	Tyr
	690					695					700				
Ser	Tyr	Thr	Asn	Gly	Arg	Leu	Val	Asp	Ile	Arg	Gln	Ala	His	Ile	Gly
705				710						715					720
Lys	Gly	Trp	Gln	Leu	Val	Ala	Pro	Trp	Thr	Pro	Arg	Leu	Ala	Ala	Glu
			725						730					735	
Thr	Arg	Pro	Gly	Phe	Val	Asp	Val	Pro	Met	Leu	Glu	Thr	Asn	Arg	Pro
		740						745					750		
Gly	Ala	Lys	Leu	Thr	Leu	Asp	Phe	Glu	Gly	Thr	Ala	Val	Gly	Ile	Phe
		755					760						765		
Cys	Val	Ser	Gly	Pro	Ala	Ala	Gly	Ile	Leu	Glu	Tyr	Ser	Val	Asp	Gly
	770					775							780		
Ala	Pro	Phe	Lys	Lys	Leu	Asp	Thr	Phe	Thr	Ala	Trp	Ser	Gly	Gly	Leu
785					790					795					800
Tyr	Ile	Pro	Trp	Val	Tyr	Met	Phe	Asp	Thr	Glu	Leu	Pro	Met	Gly	Lys
			805						810					815	
His	Arg	Leu	Thr	Leu	Arg	Met	Ser	Lys	Asp	His	His	Pro	Gln	Ser	Lys
		820						825					830		
Gly	Thr	Ser	Cys	Gln	Ile	Arg	Gln	Phe	Val	Val	Asn	Asp	Ser	Cys	Glu
	835						840					845			

<210> 6448

<211> 73

<212> PRT

<213> B.fragilis

<400> 6448

Arg	Arg	Thr	Leu	Glu	Leu	Trp	Asp	Arg	Asp	Val	Glu	Arg	Trp	Ile	Asn
1				5					10					15	

Ser Glu Arg Val Pro Val Tyr Ser Pro Ile Thr Tyr Phe Leu Tyr Asp
 20 25 30
 Leu Pro Arg Trp Asp Gly Lys Asp Tyr Ile Arg Ala Leu Ala Arg Tyr
 35 40 45
 Val Arg Thr Phe Arg Arg Ile Gly Tyr Lys Arg Thr Glu Ala Leu Cys
 50 55 60
 Phe Val His Ser Asp Gln Gln Ser Gln
 65 70

<210> 6449

<211> 397

<212> PRT

<213> B.fragilis

<400> 6449

Thr Leu Met Lys Lys Leu Met Ala Met Leu Leu Leu Ala Gly Ser Ile
 1 5 10 15
 Gln Gly Val Tyr Ala Gln Lys Thr Glu Lys Lys Glu Met Phe Leu Glu
 20 25 30
 Asn Lys Ser Leu Tyr Glu Glu Leu Thr Asn Val Gln Lys Lys Thr Asp
 35 40 45
 Lys Phe Asn Leu Tyr Leu Asn Met Gln Gly Ser Phe Asp Ala Asn Phe
 50 55 60
 Arg Asp Gly Phe Asp Glu Gly Val Phe Lys Met Arg Gln Leu Arg Ile
 65 70 75 80
 Glu Ala Lys Gly Asn Leu Asn Ser Trp Leu Ser Tyr Arg Tyr Arg Gln
 85 90 95
 Arg Leu Asn Arg Ser Asn Glu Gly Gly Gly Met Ile Asp Asn Ile Pro
 100 105 110
 Thr Ser Ile Asp Tyr Ala Gly Ile Gly Val Lys Leu Asn Asp Gln Phe
 115 120 125
 Ser Phe Phe Ala Gly Lys Gln Cys Thr Ala Tyr Gly Gly Phe Glu Phe
 130 135 140
 Asp Leu Asn Pro Ile Asp Ile Tyr Gln Tyr Ser Asp Met Ile Glu Asn
 145 150 155 160
 Met Ser Asn Phe Met Thr Gly Leu Asn Ile Gly Tyr Asn Ile Thr Pro
 165 170 175
 Thr Gln Gln Leu Asn Leu Gln Ile Leu Asn Ser Arg Asn Ser Ser Phe
 180 185 190
 Asp Lys Thr Tyr Gly Ile Thr Glu Asp Ser Glu Gly Lys Leu Pro Asp
 195 200 205
 Leu Lys Ser Gly Lys Met Pro Leu Val Tyr Thr Leu Asn Trp Asn Gly
 210 215 220
 Asn Phe Asn Glu Val Phe Lys Thr Arg Trp Ser Ala Ser Val Met Ser
 225 230 235 240
 Glu Ala Lys Gly Lys Asn Leu Tyr Tyr Tyr Ala Val Gly Asn Glu Leu
 245 250 255
 Asn Leu Asp Lys Phe Asn Met Phe Val Asp Phe Met Tyr Ser Gln Glu
 260 265 270
 Gly Ile Asp Arg Asn Gly Thr Ile Thr Gly Ile Val Gly Asn Ala Gly
 275 280 285
 Gly His Asn Ala Phe Asn Ala Gly Tyr Leu Ser Val Val Thr Lys Leu
 290 295 300
 Asn Tyr Arg Phe Leu Pro Lys Trp Asn Ala Phe Val Lys Gly Met Tyr
 305 310 315 320
 Glu Thr Ala Ser Val Thr Lys Ala Ala Asp Gly Ile Glu Lys Gly Asn
 325 330 335
 Tyr Arg Thr Ser Trp Gly Tyr Leu Ala Gly Val Glu Phe Tyr Pro Met
 340 345 350

Lys Thr Asn Leu His Phe Phe Leu Thr Tyr Val Gly Arg Ser Tyr Asp
 355 360 365
 Phe Thr His Arg Ala Lys Val Leu Gly Gln Glu Asn Tyr Ser Thr Asn
 370 375 380
 Arg Leu Ser Leu Gly Phe Ile Tyr Gln Leu Pro Met Phe
 385 390 395

<210> 6450
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 6450
 Val Thr Arg Lys Asn Asn Ile Gly Arg Asn Ile Leu Ser Ser Gln Glu
 1 5 10 15
 Ile Ser Asp Ser Tyr Glu Arg Lys Asn Ile Lys Tyr Arg Asp Arg Pro
 20 25 30
 Ser Met Gln Leu Leu Pro Gly Leu Gln Asn Thr Pro Ser Ala Gly Lys
 35 40 45
 Cys Asn Arg Pro Val Lys Glu Arg Ser Gly Thr Ala Asn Tyr
 50 55 60

<210> 6451
 <211> 178
 <212> PRT
 <213> B.fragilis

<400> 6451
 Thr Glu Arg Lys Lys Asn Met Glu Asn Val Ile Gln Ile Gln Tyr Tyr
 1 5 10 15
 Gln Ser Pro Cys Gly Glu Leu Ile Leu Gly Ala Tyr Arg Glu Lys Leu
 20 25 30
 Cys Leu Cys Asp Trp Lys Ile Glu Glu Arg Arg Ile Ile Ile Asp Arg
 35 40 45
 Arg Ile Gln Lys Glu Leu Gln Ala Ser Tyr Lys Glu Gly Ile Ser Glu
 50 55 60
 Val Ile Thr Arg Thr Ile Gly Gln Leu Asp Glu Tyr Phe Ala Gly Arg
 65 70 75 80
 Arg Thr Thr Phe Asp Ile Pro Leu Leu Leu Val Gly Thr Asp Phe Gln
 85 90 95
 Lys Thr Val Trp Asn Glu Leu Leu Asn Ile Pro Tyr Gly Lys Thr Ile
 100 105 110
 Ser Tyr Ala Gly Leu Ser Gln Lys Leu Gly Asn Pro Lys Ala Ile Arg
 115 120 125
 Ala Ile Ala Ser Ala Asn Gly Ala Asn Pro Ile Ser Ile Leu Val Pro
 130 135 140
 Cys His Arg Val Ile Gly Ser Asp Arg Lys Leu Val Gly Tyr Gly Gly
 145 150 155 160
 Gly Leu Pro Ala Lys Lys Ile Leu Leu Asp Leu Glu Ser Ser Asp Arg
 165 170 175
 Leu Phe

<210> 6452
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 6452

Cys Val Asn Leu Asp Arg Asn Asn Lys His Thr Ile Ile Met Lys Lys
 1 5 10 15
 Ser Leu Val Tyr Thr Lys Thr Gly Asp Lys Gly Thr Thr Gly Leu Ile
 20 25 30
 Gly Gly Thr Arg Val Pro Lys Thr His Ile Arg Leu Glu Ala Tyr Gly
 35 40 45
 Thr Val Asp Glu Leu Asn Ser Asn Leu Gly Leu Leu Ala Thr Tyr Leu
 50 55 60
 Met Asp Glu His Asp Leu Asn Phe Val Gln Ser Val Gln Asp Lys Leu
 65 70 75 80
 Phe Ala Ile Gly Ser His Leu Ala Thr Asp Gln Glu Lys Val Gln Leu
 85 90 95
 Asn Asp Val Ser Ile Ile Thr Pro Ala Glu Val Glu Ala Ile Glu Arg
 100 105 110
 Glu Ile Asp Ala Ala Asp Glu Ile Leu Pro Pro Leu His Ser Phe Ile
 115 120 125
 Ile Pro Gly Gly Ser Arg Gly Ser Ala Val Cys His Val Cys Arg Thr
 130 135 140
 Val Cys Arg Arg Ala Glu Arg Arg Ile Leu Ala Leu Ser Glu Ser Cys
 145 150 155 160
 Thr Ile Ser Ala Asp Leu Leu Ala Tyr Ile Asn Arg Leu Ser Asp Tyr
 165 170 175
 Leu Phe Val Leu Ser Arg Lys Met Asn Phe Asn Glu Gly Lys Asp Glu
 180 185 190
 Ile Phe Trp Asn Asn Ser Cys Lys
 195 200

<210> 6453
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 6453
 Glu Ile Asn Asp His Leu Thr Tyr His Ile Pro Ala Ile Tyr Ala Leu
 1 5 10 15
 His Ser Lys Cys Thr Glu Phe Pro Asp Glu Thr Ser Arg Arg Val Thr
 20 25 30
 Lys Ile Thr Phe Tyr Phe Leu Phe Leu Pro Lys Asp Leu Thr Thr Ala
 35 40 45
 Lys Asn Ile Asn Ile Arg Ile Phe Ser Thr Ala Ile Asp Phe His Tyr
 50 55 60
 Ile Gln Ser Leu Gln Ser Leu Thr Phe Arg Ser His Thr Pro
 65 70 75

<210> 6454
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 6454
 Arg Arg Ala Asp Pro Arg Thr Leu Pro Glu Leu Leu Ile Glu Lys His
 1 5 10 15
 Asp Ile Leu Ile Glu Lys Ile Gly Thr Arg Leu Lys Thr His Ala Thr
 20 25 30
 Glu Thr Asp Ile Ala Arg Leu Phe Ile Ala Leu Val Glu Tyr Arg Phe
 35 40 45
 Met Arg Lys Cys Pro Ile Lys Thr Phe Arg Asn Ala Cys Thr Thr Ser
 50 55 60
 Leu Met Asn Lys Lys Ser Phe Met Lys Glu Val Phe Arg Lys His Thr

65 70 75 80
 Lys Ile Ser Phe Arg His Leu Glu Thr Ala Lys Ser
 85 90

<210> 6455
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 6455
 Ile Leu Leu Glu Leu Asp Gln Gly Glu Arg Val Met Asn Asp Arg Lys
 1 5 10 15
 Ile Leu Val Ala Tyr Phe Ser Cys Ser Gly Val Thr Lys Ala Val Ala
 20 25 30
 Glu Lys Leu Ala Ala Ile Thr Gly Ala Asp Leu Tyr Glu Ile Lys Pro
 35 40 45
 Glu Val Pro Tyr Thr Glu Ala Asp Leu Asp Trp Asn Asp Lys Lys Ser
 50 55 60
 Arg Ser Ser Val Glu Met Arg Asp Ala Leu Ser Arg Pro Ala Ile Ser
 65 70 75 80
 Gly Thr Leu Phe His Pro Glu Glu Tyr Glu Val Leu Phe Val Gly Phe
 85 90 95
 Pro Val Trp Trp Tyr Ile Ala Pro Thr Ile Ile Asn Thr Phe Leu Glu
 100 105 110
 Ser Tyr Asp Phe Ala Gly Lys Ile Val Val Pro Phe Ala Thr Ser Gly
 115 120 125
 Gly Ser Gly Ile Gly Asn Cys Glu Lys Asn Leu His Lys Ala Tyr Pro
 130 135 140
 Asp Ile Val Trp Lys Asp Gly Lys Leu Leu Asn Gly Arg Ile Thr Arg
 145 150 155 160
 Asp Leu Val Thr Glu Trp Phe Glu Lys Ile Arg Leu
 165 170

<210> 6456
 <211> 448
 <212> PRT
 <213> B.fragilis

<400> 6456
 Asn Val Ala Asp Phe Arg Ser Leu His Phe Leu Arg Arg Gln Asn His
 1 5 10 15
 Phe Met Ile Asn Glu Ser Pro Ala Leu Ala Ser Gly Ile Phe Cys Ile
 20 25 30
 Phe Val Leu Thr Met Lys Lys Tyr Val Asp Val Ile Leu Pro Leu Pro
 35 40 45
 Leu Pro Arg Cys Phe Thr Tyr Ser Leu Pro Asp Glu Gly Ala Glu Glu
 50 55 60
 Val Gln Ile Gly Cys Arg Val Val Val Pro Phe Gly Arg Lys Lys Tyr
 65 70 75 80
 Tyr Thr Ala Ile Val Arg Asn Val His His Tyr Ala Pro Thr Glu Tyr
 85 90 95
 Glu Val Lys Glu Ile Ser Thr Val Leu Asp Thr Ser Pro Ile Leu Leu
 100 105 110
 Pro Gly Gln Phe Arg Phe Trp Glu Trp Leu Ala Asp Tyr Tyr Leu Cys
 115 120 125
 Thr Gln Gly Asp Val Tyr Lys Ala Ala Leu Pro Ser Gly Leu Lys Leu
 130 135 140
 Glu Ser Glu Thr Ile Val Glu Tyr Asn Pro Asp Phe Glu Ala Asp Ala
 145 150 155 160

Pro Leu Ser Glu Arg Glu Gln Leu Val Leu Asp Leu Leu Ala Lys Glu
 165 170 175
 Pro Glu Gln Cys Val Thr Lys Leu Glu Lys Glu Ser Gly Leu Lys Asn
 180 185 190
 Ile Leu Thr Val Ile Lys Ser Leu Leu Asp Lys Glu Ala Leu Phe Val
 195 200 205
 Lys Glu Glu Leu Arg Arg Thr Tyr Lys Pro Lys Thr Glu Ala Arg Val
 210 215 220
 Arg Leu Ala Ala Asp Ala Ser Gly Glu Glu Asn Leu Arg Arg Ile Phe
 225 230 235 240
 Asp Glu Leu Glu Arg Ala Pro Lys Gln Leu Ala Leu Leu Met Lys Tyr
 245 250 255
 Val Glu Leu Ser Gly Val Leu Gly Asp Gly Ala Ser Lys Glu Val Ser
 260 265 270
 Lys Lys Glu Leu Leu Gln Arg Ala Ser Ala Ser Pro Ala Ile Phe Asn
 275 280 285
 Gly Leu Val Glu Lys Gln Ile Phe Glu Val Tyr Tyr Gln Glu Ile Gly
 290 295 300
 Arg Leu Asn Arg Leu Val Gly Lys Thr Val Glu Leu Asn Val Leu Asn
 305 310 315 320
 Glu His Gln Gln Arg Ala Tyr His Glu Phe Met Gln Ser Phe Gln Glu
 325 330 335
 Lys Asn Val Cys Leu Leu His Gly Val Thr Ser Ser Gly Lys Thr Glu
 340 345 350
 Val Tyr Ile His Leu Ile Glu Glu Thr Leu Arg Gln Gly Arg Gln Val
 355 360 365
 Leu Tyr Leu Leu Pro Glu Ile Ala Leu Thr Thr Gln Ile Thr Glu Arg
 370 375 380
 Leu Lys Arg Val Phe Gly Ser Arg Val Gly Asn Leu Ser Leu Gln Val
 385 390 395 400
 Pro Arg Arg Arg Glu Ser Arg Asp Leu Ala Lys Ala Val Asp Gly Gly
 405 410 415
 Gly Leu Arg His His Ser Gly Gly Thr Leu Phe Gly Val Pro Pro Val
 420 425 430
 Ser Glu Ser Arg Thr Gly His Cys Gly Arg Gly Thr Arg Lys Tyr Val
 435 440 445

<210> 6457

<211> 328

<212> PRT

<213> B.fragilis

<400> 6457

Lys Thr Lys Glu Glu Tyr Ser Met Ile Lys Lys Leu Cys Ile Ile Leu
 1 5 10 15
 Leu Ser Val Cys Thr Val Ala Pro Val Met Ala Gln Gln Tyr Ser Ser
 20 25 30
 Ser Asp Asp Ala Ser Phe Ala Pro Lys Lys Gly Gln Trp Gln Val Ser
 35 40 45
 Met Val Met Gly Ser Ser Gln Met Phe Asn Asn Asn Thr Glu Asn Tyr
 50 55 60
 Leu Leu Pro Thr Tyr Trp Asn Gly Gln Asn Phe Ser Phe Pro Asn Val
 65 70 75 80
 Gly Leu Gly Asn Asn Thr Ser Gly Asn Gln Ser Ser Asp Pro Ala Thr
 85 90 95
 Tyr Leu Gln Leu Gly Asp Leu Asn Ser Asn Asn Leu Val Asn Ile Ile
 100 105 110
 Gly Ile Gln Gly Lys Tyr Phe Leu Thr Asp Arg Trp Asp Val Asn Leu
 115 120 125

Met Phe Ser Met Asn Ile Gly Val Thr Pro Lys Lys Asp Tyr Ile Glu
 130 135 140
 Gly Asp Lys Thr Val Thr Asp Met Gln Ile Pro Ala Leu Gln Tyr Leu
 145 150 155 160
 Glu Gly Arg Ile Lys Asn Asn Trp Ser Val Asn Ile Gly Ser Asn Tyr
 165 170 175
 Tyr Phe Asn Thr Lys Asn Glu Arg Ile Asn Leu Tyr Val Gly Gly Leu
 180 185 190
 Leu Gly Trp Gln Met Gly Arg Ile Glu Thr Thr Leu Pro Tyr Thr Gly
 195 200 205
 Ile Met Val Ser Asp Lys Asp Met Asn Thr Asp Gly Thr Asp Thr Asp
 210 215 220
 Leu Gln Pro Thr Pro Asp Glu Asn Gly Gln Asp Asn Gly Pro Val Val
 225 230 235 240
 Asp Asp Asn Asp Val Thr Gly Thr Pro Leu Glu Val Tyr Ile Pro Asn
 245 250 255
 Ser Arg Ala Gly Gln Ile Phe Gly Leu Arg Ala Ala Thr Val Ala Gly
 260 265 270
 Ile Glu Tyr Ser Ile Gly Lys Gly Leu Ile Leu Gly Phe Glu Val Gln
 275 280 285
 Pro Val Ala Tyr Arg Tyr Asp Met Ile Gln Ile Ile Pro Lys Gly Thr
 290 295 300
 Pro Val Tyr Lys Val Gly His His Asn Ile Asn Leu Phe Ala Leu Pro
 305 310 315 320
 Asn Leu Lys Leu Gly Phe Arg Phe
 325

<210> 6458

<211> 323

<212> PRT

<213> B.fragilis

<400> 6458

Val Met Lys Glu Leu Lys Arg Leu Ser Phe Val Val Val Thr Leu Leu
 1 5 10 15
 Leu Ser Thr Met Met Ala Phe Ala Gln Lys Pro Asn Ile His Ile Leu
 20 25 30
 Ala Thr Gly Gly Thr Ile Ala Gly Thr Gly Gly Ser Ala Thr Ser Thr
 35 40 45
 Asn Tyr Thr Ala Gly Gln Val Ala Ile Ser Thr Leu Leu Asp Ala Val
 50 55 60
 Pro Glu Leu Lys Asp Ile Ala Asn Val Thr Gly Glu Gln Ile Val Arg
 65 70 75 80
 Ile Ala Ser Gln Asp Met Ser Asp Glu Val Trp Leu Ile Leu Ala Lys
 85 90 95
 Lys Ile Asn Gln Leu Leu Lys Arg Pro Asp Ile Asp Gly Ile Val Ile
 100 105 110
 Thr His Gly Thr Asp Thr Met Glu Thr Ala Tyr Phe Leu Asn Leu
 115 120 125
 Thr Val Lys Ser Asn Lys Pro Val Val Leu Val Gly Ala Met Arg Pro
 130 135 140
 Ser Thr Ala Leu Ser Ala Asp Gly Pro Leu Asn Leu Tyr Asn Ala Val
 145 150 155 160
 Val Thr Ala Gly Ala Lys Glu Ser Ile Gly Lys Gly Val Leu Ile Ala
 165 170 175
 Met Asn Gly Leu Ile Leu Gly Ala Glu Ser Ala Ile Lys Met Asn Thr
 180 185 190
 Ile Asp Val Gln Thr Phe Gln Ala Pro Asn Ser Gly Ala Leu Gly Tyr
 195 200 205

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Ile Phe Asn Gly Lys Val Phe Tyr Asn Gln Ala Pro Leu Lys Lys His
  210                      215                      220
Thr Thr Gln Ser Val Phe Asp Val Thr Asn Leu Asn Ser Leu Pro Lys
225                      230                      235                      240
Val Gly Ile Val Tyr Ser Tyr Ser Asn Ile Asp Pro Asp Met Val Thr
                      245                      250                      255
Pro Leu Leu His His Asp Tyr Lys Gly Ile Ile His Ala Gly Val Gly
  260                      265                      270
Asn Gly Asn Phe His Lys Asn Ile Leu Pro Val Leu Leu Glu Ala Arg
  275                      280                      285
Lys Lys Gly Ile Leu Val Val Arg Ser Ser Arg Val Pro Thr Gly Pro
  290                      295                      300
Thr Thr Met Asp Ala Glu Val Asp Asp Thr Gln Tyr Gln Phe Leu Leu
305                      310                      315                      320
Leu Arg Asn

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<210> 6459
<211> 392
<212> PRT
<213> B.fragilis

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<400> 6459
Lys Lys Gly Glu Lys Lys Asn Lys Arg Ser His Lys His Phe Tyr Phe
1      5      10      15
Gln Arg Ile Asn Arg Ile Leu Ala Glu Thr Phe Lys Thr Val Asn Ile
  20      25      30
Met Thr Ser Lys Asp Asn Tyr Cys Val Ile Met Gly Gly Gly Ile Gly
  35      40      45
Ser Arg Phe Trp Pro Phe Ser Arg Lys Thr Met Pro Lys Gln Phe Leu
  50      55      60
Asp Phe Phe Gly Thr Gly Arg Ser Leu Leu Gln Gln Thr Phe Asp Arg
  65      70      75      80
Phe Asn Lys Ile Ile Pro Thr Glu Asn Ile Leu Ile Val Thr Asn Ala
  85      90      95
Ile Tyr Ala Asp Leu Val Lys Glu Gln Leu Pro Glu Leu Asp Pro Lys
  100     105     110
Gln Ile Leu Leu Glu Pro Ala Arg Asn Thr Ala Pro Cys Ile Ala
  115     120     125
Trp Ala Ser Tyr His Ile Arg Ala Leu Asn Pro Asn Ala Asn Ile Val
  130     135     140
Val Ala Pro Ser Asp His Leu Ile Leu Lys Glu Gly Glu Phe Leu Ala
  145     150     155     160
Ala Ile Glu Lys Gly Leu Asp Phe Val Ser Lys Ser Asp Lys Leu Leu
  165     170     175
Thr Leu Gly Ile Lys Pro Asn Arg Pro Glu Thr Gly Tyr Gly Tyr Ile
  180     185     190
Gln Ile Ala Glu Gln Glu Gly Asp Asn Phe Tyr Lys Val Lys Thr Phe
  195     200     205
Thr Glu Lys Pro Glu Leu Glu Leu Ala Lys Val Phe Val Glu Ser Gly
  210     215     220
Glu Phe Tyr Trp Asn Ser Gly Leu Phe Met Trp Asn Val Asn Thr Ile
  225     230     235     240
Ile Lys Ala Gly Glu Thr Leu Leu Pro Glu Leu Ala Ser Lys Leu Ala
  245     250     255
Pro Gly Arg Glu Ile Tyr Gly Thr Pro Glu Glu Lys Asp Phe Ile Glu
  260     265     270
Glu Asn Phe Pro Ala Cys Pro Asn Val Ser Ile Asp Phe Gly Ile Met
  275     280     285

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Glu Lys Ala Asp Asn Val Tyr Val Ser Leu Gly Asp Phe Gly Trp Ser
 290 295 300
 Asp Leu Gly Thr Trp Gly Ser Leu Tyr Asp Leu Ser Pro Lys Asp Glu
 305 310 315 320
 Gln Arg Asn Val Thr Leu Lys Cys Asp Ser Leu Ile Tyr Asn Ser Asn
 325 330 335
 Asp Asn Ile Val Val Leu Pro Lys Gly Lys Leu Ala Val Ile Glu Gly
 340 345 350
 Leu Glu Gly Phe Leu Val Ala Glu Ser Asp Asn Val Leu Leu Ile Cys
 355 360 365
 Lys Lys Asp Glu Glu His Ala Ile Arg Lys Tyr Val Asn Asp Ala Gln
 370 375 380
 Met Lys Leu Gly Glu Asp Tyr Ile
 385 390

<210> 6460

<211> 197

<212> PRT

<213> B.fragilis

<400> 6460

Leu Phe Met Glu Ser Glu Lys Glu Lys Met Gly Thr Gly Arg Leu Tyr
 1 5 10 15
 Asp Ala Asn Tyr Asp Thr Glu Leu Ile Ala Glu Arg Gln Ala Cys Lys
 20 25 30
 Glu Leu Cys Tyr Thr Leu Asn His Leu Pro Pro Ser Gln Ile Ala Glu
 35 40 45
 Arg Glu Ala Ile Ile Arg Arg Leu Phe Cys Lys Thr Lys Glu Arg Phe
 50 55 60
 Leu Leu Glu Gln Pro Phe Tyr Cys Asp Tyr Gly Tyr Asn Ile Glu Ile
 65 70 75 80
 Gly Glu Asn Phe Tyr Ala Asn Met Asn Cys Val Ile Leu Asp Glu Ala
 85 90 95
 Lys Val Thr Phe Gly Asp Asn Val Phe Ile Ala Pro Ser Cys Gly Phe
 100 105 110
 Tyr Thr Ala Gly His Pro Leu Asp Val Glu Gln Arg Asn Arg Gly Leu
 115 120 125
 Glu Tyr Ala Arg Pro Ile Arg Val Gly Asn Asn Val Trp Ile Gly Ala
 130 135 140
 Gln Val Cys Val Leu Pro Gly Val Thr Ile Gly Asp Asn Thr Val Ile
 145 150 155 160
 Gly Ala Gly Ser Val Val Asn Arg Asp Ile Pro Ala Asn Val Ile Ala
 165 170 175
 Ala Gly Asn Pro Cys Arg Val Ile Arg Glu Ile Thr Glu Glu Asp Lys
 180 185 190
 Thr Lys Tyr Leu Leu
 195

<210> 6461

<211> 462

<212> PRT

<213> B.fragilis

<400> 6461

Arg His Met Glu Lys Gln Asn Asn His Ile Asp Arg Arg Gly Phe Leu
 1 5 10 15
 Lys Ile Val Gly Ile Ser Ala Ala Thr Thr Thr Ala Ala Leu Tyr Gly
 20 25 30
 Cys Gly Ser Gly Thr Lys Ser Ser Gln Gly Arg Asn Ala Ser Ser Pro

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<210> 6462
<211> 61
<212> PRT
<213> B.fragilis
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<400> 6462

Lys Ala Met Glu Gln Gly Val Trp Gln Glu Ile Glu Gln Leu Tyr Gln
 1 5 10 15
 Lys Phe Gln Lys Leu Gly Ile Asn Glu Ala Val Asp Tyr Asp Ser Thr
 20 25 30
 Thr Cys Ile Leu Leu Leu Pro Ile Pro Gln Pro Leu Lys Ala Gln Arg
 35 40 45
 Leu Arg Asn Leu Ile Arg Ser Phe Phe Ser Thr Arg Glu
 50 55 60

<210> 6463

<211> 66

<212> PRT

<213> B.fragilis

<400> 6463

Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Leu Gln Lys Thr Leu Thr
 1 5 10 15
 Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly Ser Gly Gly
 20 25 30
 Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser Ala Gly Val Cys
 35 40 45
 Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn Leu Lys Ile
 50 55 60
 Lys Lys
 65

<210> 6464

<211> 385

<212> PRT

<213> B.fragilis

<400> 6464

Lys Asp Ser Arg Phe Ile Phe Gly Tyr Pro Leu Arg Trp Leu Arg Val
 1 5 10 15
 Arg Gly Gly Lys Lys Ala Val Asn Gln Ala Leu Pro Val Ile Asp Met
 20 25 30
 Asn Glu Asp Tyr Pro Glu Lys Glu Ile Val Leu Gln Asp Ile Ala Asp
 35 40 45
 Ile Ser Tyr Ile Pro Leu Glu Thr Asn Asp Glu Phe Leu Phe Asp Gly
 50 55 60
 Ser Val Glu Val Val Thr Asp Gln Tyr Val Ile Thr Lys Gly His Arg
 65 70 75 80
 Gly Asn Asp Val Cys Phe Phe Ser Arg Gln Gly Lys Ala Leu Asn Arg
 85 90 95
 Ile His Arg Val Gly Asn Gly Pro Gly Glu Tyr Lys Asp Ile Gly Ser
 100 105 110
 Met Asp Val Asn Pro Ala Asn Gly Glu Leu Tyr Leu Lys Glu Met Asn
 115 120 125
 Arg Gln Gln Ile His Val Tyr Ser Leu Asp Gly Lys Phe Lys His Ser
 130 135 140
 Phe Thr Phe Pro Glu Gly Lys Arg Met Ser Arg Met Cys Leu Phe Ser
 145 150 155 160
 Pro Asp Tyr Leu Ile Ala Glu Gln Glu Ser Lys Val Pro Asp Asp Gln
 165 170 175
 Asp Ala Asn Phe Tyr Pro Tyr Leu Leu Val Ser Thr Arg Asp Gly His
 180 185 190
 Leu Asp Ser Leu Asp Tyr Val Gln Lys Arg Asn Ile Leu Val Lys Leu
 195 200 205

Ile Val Asn Ala Glu Asn His Ser Tyr Ala Tyr Leu Leu Glu Pro Ser
 210 215 220
 Leu Ile Arg Asn Gly Ser Arg Phe Tyr Ile Gly Asn Pro Asp Ser Asp
 225 230 235 240
 Thr Leu Phe Ala Met Asn Pro Asp Arg Thr Leu Glu Pro Leu Leu Val
 245 250 255
 Arg Thr Pro Ser His Ser Glu Glu Gly Asn Lys Tyr Gly Leu Phe Leu
 260 265 270
 Arg Gly Ala Ala Gly Ala Tyr Phe Leu Thr Lys Gln Pro Met Glu
 275 280 285
 Val Pro Met Asn Ser Ile Glu Ser Leu Asp Leu Lys Ser Glu Glu Trp
 290 295 300
 Leu Tyr Asp Cys Arg Thr Gln Glu Val Cys Arg Tyr Leu Leu Lys Asn
 305 310 315 320
 Lys Asp Asp Ala Ser Lys Arg Val Asp Gly Ile Met Phe Phe Cys Tyr
 325 330 335
 Pro Glu Asp Cys Gly Leu Ala Val Leu Lys Ser Glu Asp Leu Met Asp
 340 345 350
 Ala Tyr Glu Ala Gly Gln Leu Ser Gly Glu Leu Lys Glu Ile Ala Ala
 355 360 365
 Gly Leu Lys Ala Asp Asp Asn Pro Val Leu Met Leu Ile His Phe Lys
 370 375 380

Lys
385

<210> 6465
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 6465
 Ile Arg Lys Leu Met Tyr Trp Thr Leu Glu Leu Ala Ser Lys Leu Glu
 1 5 10 15
 Asp Ala Pro Trp Pro Ala Thr Lys Asp Glu Leu Ile Asp Tyr Ala Met
 20 25 30
 Arg Ser Gly Ala Pro Leu Glu Val Ile Glu Asn Leu Gln Glu Met Glu
 35 40 45
 Asp Glu Gly Glu Ile Tyr Glu Ser Ile Glu Asp Ile Trp Pro Asp Tyr
 50 55 60
 Pro Ser Lys Glu Asp Phe Phe Phe Asn Glu Glu Glu Tyr
 65 70 75

<210> 6466
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 6466
 Ser Lys Ile Ser Phe Phe Thr Ser Arg Met Asp Ser Ser Gly Glu Ser
 1 5 10 15
 Arg Asp Thr Cys Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Leu Pro
 20 25 30
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Thr Thr Lys Phe
 35 40 45
 Glu Glu Glu Pro Leu Asn Phe Gly Thr Gly Met Trp Asn Val Gly Leu
 50 55 60
 Thr Pro Asn Val Cys Arg Cys Thr Leu Leu Leu Pro Thr Ser Cys Met
 65 70 75 80
 Thr Cys Leu Val Gly Thr Gly Arg Thr Thr Ser Gly Arg Trp Pro Ala


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<210> 6467
<211> 284
<212> PRT
<213> B.fragilis
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Leu	Leu	Pro	Ser	Leu	His	Arg	Gln	Leu	Tyr	Lys	Glu	Arg	Leu	Arg	Met
1				5					10					15	
Val	Gln	Ile	Ala	Leu	Ser	Arg	Phe	Lys	Asp	Phe	Leu	Lys	Glu	Gln	Tyr
			20					25					30		
Pro	Leu	Tyr	Glu	Cys	Asn	Ile	Lys	Pro	Lys	Phe	Ile	Thr	Lys	Asp	Met
		35					40					45			
Ile	Val	Gln	Phe	Val	Asp	Tyr	Leu	Gln	Ser	Arg	Ser	Val	Gly	Glu	Gly
	50					55					60				
Ala	Lys	Ser	Ile	Tyr	Gln	Arg	Phe	Lys	Lys	Val	Ile	Arg	Tyr	Ala	Ile
65				70						75					80
Glu	His	Asp	Val	Ile	Leu	Lys	Asp	Pro	Cys	Lys	Glu	Val	Ile	Cys	Lys
			85						90					95	
Val	Asp	Asp	Pro	Met	Leu	Arg	Lys	Asp	Val	Leu	Ser	Leu	Glu	Glu	Ile
			100					105					110		
Gln	Ser	Leu	Ile	Asn	Cys	His	Tyr	Glu	Asn	Glu	Asn	Pro	Met	Val	Arg
		115					120					125			
Arg	Ala	Phe	Ile	Phe	Cys	Leu	Tyr	Phe	Gly	Leu	Arg	Phe	Cys	Asp	Val
	130					135					140				
Lys	Asp	Leu	Thr	Tyr	Lys	Asn	Val	Asp	Tyr	Ser	Asn	Lys	Leu	Leu	Lys
145				150						155					160
Phe	Glu	Gln	Asn	Lys	Thr	Lys	Gly	His	Ser	Ser	Ala	Ser	Gly	Val	Val
			165						170					175	
Ile	Pro	Leu	Asn	Asp	Gly	Leu	Leu	Ser	Ile	Ile	Gly	Glu	Ala	Pro	Ala
			180					185					190		
Asn	Gly	Asn	Lys	Asp	Val	Leu	Ile	Phe	Asp	Leu	Pro	Thr	Tyr	Glu	Ser
		195					200					205			
Cys	Ser	Lys	Ser	Leu	Arg	Arg	Trp	Val	Lys	Arg	Ala	Gly	Ile	Asp	Lys
	210					215					220				
His	Ile	Ser	Trp	His	Cys	Ala	Arg	His	Ser	Phe	Ala	Val	Asn	Ile	Leu

225		230		235		240
Asn Asn Gly Ala	Asn Ile Lys Thr Ile	Ala Gly Leu Leu Gly His Ser				
	245	250	255			
Gly Leu Lys His Thr Lys Lys Tyr Thr Arg Ala Val Asp Lys Leu Lys						
	260	265	270			
Glu Glu Ala Ile Asn Ser Leu Pro Glu Leu Lys Leu						
	275	280				

<210> 6468

<211> 808

<212> PRT

<213> B.fragilis

<400> 6468

Ile Ala Thr Ser Gln Ser Leu His Arg Met Gln Pro Met Tyr Pro Ala
1 5 10 15
Leu Ser Ala Ile His Pro His Thr Gly Arg Thr Ala Ser His Arg Ser
20 25 30
Phe Cys Arg Thr Ala Gln Ala Gly Asp Thr Met Met Glu Lys Ile Ile
35 40 45
Asp Leu Leu His Ser Gly Gly Tyr Ser Cys Val Ile Gly Asn Gly Thr
50 55 60
Glu Ile Arg Thr Phe Thr Gln Arg Gly Val Ala Asp Leu Tyr Asp Leu
65 70 75 80
Phe Arg Gln Asp Pro Ser Phe Met Lys Gly Ala Gly Ile Ala Asp Lys
85 90 95
Val Ile Gly Lys Ala Ala Ala Ser Leu Met Val Leu Gly Gly Ile Arg
100 105 110
Gln Val Tyr Ala Asp Val Ile Ser Gln Pro Ala Leu Ala Leu Leu Cys
115 120 125
Asn Ala Asn Ile Glu Val Ser Tyr Val Arg Leu Val Pro Phe Ile Glu
130 135 140
Asn Arg Asp Lys Ser Gly Trp Cys Pro Leu Glu Thr Ala Cys Tyr Gly
145 150 155 160
Ile Glu Ser Ile Gln Glu Ile Phe Arg Ile Ile Glu Asn Phe Leu Ser
165 170 175
Lys Ile Arg Ile Lys Lys Asn Leu Leu Gly Ile Leu Leu Val Cys Ala
180 185 190
Phe Leu Ser Ser Ser Leu Gln Ala Gln Val Arg Lys Asp Thr Thr Gln
195 200 205
Ala Gly His Asn Tyr Glu Ile Asp Gly Val Val Val Thr Gly Thr Arg
210 215 220
Asn Glu Thr Asp Ile Arg His Leu Pro Met Thr Ile Ser Val Val Asn
225 230 235 240
Arg Glu Thr Ile Gly Gln Arg Ser Glu Pro Ser Leu Leu Pro Thr Leu
245 250 255
Thr Glu Gln Val Pro Gly Leu Phe Thr Thr Ser Arg Gly Val Met Gly
260 265 270
Tyr Gly Val Ser Asn Gly Ala Ala Gly Gly Ile Ser Leu Arg Gly Ile
275 280 285
Gly Gly Ser Pro Thr Thr Gly Leu Leu Val Leu Ile Asp Gly His Pro
290 295 300
Gln Tyr Met Gly Leu Met Gly His Pro Ile Ala Asp Ala Tyr Gln Ser
305 310 315 320
Met Leu Ala Glu Lys Val Glu Val Val Arg Gly Pro Ala Ser Val Leu
325 330 335
Tyr Gly Ser Asn Ala Met Gly Gly Val Ile Asn Ile Val Thr Arg Arg
340 345 350
Gln Arg Glu Asp Gly Val Arg Thr Gly Val Arg Leu Gly Tyr Gly Ser

<210> 6469

<211> 166
 <212> PRT
 <213> B.fragilis

<400> 6469

His	Lys	Arg	Ser	Ile	Ile	Tyr	Thr	Leu	Asn	Leu	Asn	Asn	Lys	Lys	Met
1			5					10					15		
Asn	Lys	Val	Ile	Val	Thr	Phe	Leu	Leu	Ile	Gly	Ile	Val	Ala	Ser	
		20					25					30			
Ser	Cys	Thr	Thr	Ser	Lys	Ser	Val	Ile	Ser	Gln	Lys	Ala	Asp	Leu	Ser
		35				40					45				
Arg	Tyr	Glu	Tyr	Ala	Ser	Ile	Ile	Asn	Asn	Asp	Thr	Tyr	His	Ile	Pro
	50					55					60				
Ala	Gln	Leu	Met	Glu	Tyr	Glu	Ile	Gln	Leu	Phe	Asp	Ala	Ile	Glu	Ser
65				70						75				80	
Ser	Arg	Leu	Lys	Leu	Val	Asn	Asp	Ile	Arg	Ile	Asp	Glu	Leu	Ser	Pro
			85					90						95	
Asn	Gln	Gln	Ser	Lys	Leu	Leu	Met	Val	Lys	Tyr	Gly	Val	Asp	Ile	Leu
			100					105					110		
Glu	Glu	Glu	Ser	Val	Val	Thr	Val	Asn	Phe	Ile	Asp	Tyr	Leu	Thr	Gly
		115				120						125			
Arg	Pro	Ile	Ala	Ser	Cys	Arg	Gly	Ala	Tyr	Thr	Thr	Leu	Gly	Phe	Ser
	130					135						140			
Val	Ser	Ala	Asp	Ile	Arg	Gly	Ala	Ile	Lys	Arg	Val	Ala	Lys	Gln	Ile
145				150						155					160
Ala	Glu	Thr	Phe	Pro	Lys										
				165											

<210> 6470
 <211> 716
 <212> PRT
 <213> B.fragilis

<400> 6470

Ser	Asn	Tyr	Gly	Met	Asn	Thr	Lys	Ser	Lys	His	Pro	Leu	Leu	Ser	Phe
1			5						10					15	
Pro	Lys	Pro	Gln	Phe	Thr	Thr	Gly	Met	Ile	Arg	Leu	Ser	Ile	Thr	Leu
		20					25					30			
Leu	Phe	Ser	Thr	Leu	Cys	Ile	Gly	Ser	Phe	Gly	Gln	Lys	Lys	Ser	Pro
		35				40					45				
Ile	Thr	Val	Glu	Thr	Leu	Leu	Glu	Glu	Met	Thr	Ser	Tyr	Asp	Glu	Met
	50					55					60				
Thr	Arg	Tyr	Pro	Thr	Leu	Pro	Tyr	Arg	Ser	Met	Gln	Gln	Ser	Ser	Tyr
65				70						75				80	
Asp	Arg	Arg	Ser	Val	Ser	Pro	Asp	Arg	Pro	Gly	Trp	Phe	Ala	Asn	Asp
			85					90						95	
Asp	Gly	Glu	Gly	Phe	Ile	Arg	Leu	Glu	Glu	His	Asn	Gly	Arg	Lys	Glu
		100					105						110		
Lys	Val	Leu	Phe	Glu	Asp	Glu	Gly	Pro	Gly	Ala	Ile	Thr	Arg	Ile	Trp
		115				120						125			
Leu	Thr	Thr	Phe	Gly	Ser	Ile	His	Thr	Ile	Leu	Arg	Phe	Tyr	Phe	Asp
	130					135					140				
Gly	Lys	Asp	Glu	Pro	Gly	Trp	Val	Val	Pro	Ser	Tyr	Asp	Leu	Gln	Lys
145				150						155					160
Phe	Gly	Val	Arg	Gly	Leu	Lys	Lys	Gly	Leu	Ile	Glu	Pro	Asp	Asp	Lys
			165					170						175	
Trp	Ile	Arg	Gly	Ser	Leu	Ile	Tyr	Leu	Pro	Val	Thr	Tyr	Ala	Asp	Gly
		180					185					190			
Cys	Lys	Val	Thr	Met	Glu	Glu	Leu	Thr	Pro	Glu	Arg	Thr	Asn	Arg	His

		195					200					205				
Phe	Leu	Phe	Asn	Tyr	Arg	Lys	Tyr	Pro	Thr	Gly	Thr	Pro	Val	Glu	Thr	
	210					215					220					
Phe	Ser	Arg	Lys	Val	Ala	Glu	Arg	Ile	Pro	Gln	Ser	Val	Glu	Lys	Thr	
225					230					235					240	
Ser	Ala	Thr	Leu	Tyr	Arg	Asn	Ile	Asp	Lys	Gly	Val	Asp	Pro	Gln	Ala	
				245					250					255		
Arg	Tyr	Gly	Lys	Gly	Ala	Leu	Ile	His	Arg	Gln	Asn	Leu	Ser	Leu	Asn	
			260					265					270			
Lys	Gly	Glu	Lys	Gln	Gln	Leu	Asn	Leu	His	Lys	Gly	Lys	Arg	Ala	Ile	
		275					280					285				
Ser	Leu	Leu	Gln	Phe	Asn	Val	Lys	Thr	Asp	Pro	Asp	Leu	Lys	Pro	Gly	
	290					295					300					
Thr	Asp	Asp	Phe	Ala	Arg	Leu	Met	Arg	Ser	Leu	Ile	Ile	Ser	Ile	Ser	
305					310					315					320	
Phe	Asp	Gly	Gln	Gln	Thr	Val	Trp	Ala	Pro	Leu	Ser	Asp	Phe	Ala	Gly	
				325					330					335		
Ser	Gly	Met	Gly	Ala	Phe	Ala	Ser	Arg	Ser	Phe	Phe	Phe	Tyr	Ser	Asp	
			340					345					350			
Gly	Lys	Gly	Ile	Val	Cys	Ser	Lys	Trp	Leu	Met	Pro	Tyr	Arg	Gln	Asn	
		355					360					365				
Cys	Glu	Ile	Ser	Val	Leu	Asn	Leu	Ser	Pro	Tyr	Lys	Thr	Asp	Val	His	
	370					375					380					
Ile	Asp	Ile	Val	Ser	Gln	Pro	Tyr	Lys	Trp	Asp	Asn	Arg	Ser	Leu	Tyr	
385					390					395					400	
Phe	His	Thr	Ala	Trp	Lys	Gln	Glu	Arg	Arg	Leu	Pro	Val	Val	Thr	Trp	
				405					410					415		
Met	Glu	His	Glu	Lys	Cys	Met	Asp	Trp	Asn	Phe	Thr	Thr	Ile	Ser	Gly	
			420					425					430			
Arg	Gly	Val	Tyr	Arg	Gly	Asp	Leu	Leu	Ser	Leu	Phe	Asn	His	Thr	Thr	
		435					440					445				
Glu	Trp	Tyr	Gly	Glu	Gly	Asp	Glu	Lys	Ile	Thr	Val	Asp	His	Glu	Ala	
	450					455					460					
Phe	Pro	Ser	His	Phe	Gly	Thr	Gly	Thr	Glu	Asp	Tyr	Tyr	Ser	Phe	Asp	
465					470					475					480	
Gly	Tyr	Phe	Lys	Ser	Gln	Thr	Pro	Phe	Ala	Gly	Gln	Pro	Arg	Gln	Asp	
				485					490					495		
Met	Lys	Asp	Phe	Tyr	Gly	Tyr	Asn	Ser	Phe	Phe	Arg	Val	Arg	Cys	Leu	
			500					505					510			
Asp	Gly	Ile	Pro	Phe	Asn	Gln	Gln	Leu	Lys	Phe	Asp	Phe	Glu	Leu	Leu	
		515					520					525				
Gly	Trp	Glu	Asn	Gly	Thr	Val	Asp	Tyr	Ser	Ser	Thr	Val	Phe	Trp	Tyr	
	530					535					540					
Gly	Asp	Leu	Asn	Ser	Gln	Ala	Ala	Gly	Phe	Ser	Gly	Ile	Glu	Glu	Ile	
545					550					555		</				

Glu Ala Thr Gly Ala Ile Asn Leu Gly Met His Lys Pro Ile Asp Gly
 675 680 685
 Lys Phe Ile Leu Arg Ile Glu Leu Thr Gly Gln Asn Ala Leu Ser Thr
 690 695 700
 Gly Thr Leu Phe Gly Leu Asp Cys Ile Arg Ile Glu
 705 710 715

<210> 6471
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 6471
 His Asp Tyr Gly Phe Cys Lys Ile Ser Gly Arg Ser Leu Asn Asn Arg
 1 5 10 15
 Pro Phe Asp Lys Phe Pro Ile Glu Glu Cys Thr Tyr Gly Thr Pro His
 20 25 30
 Tyr Ile Thr Leu Glu Glu Lys Asp Lys Ile Phe Asn Ala Asp Leu Ser
 35 40 45
 Ala Thr Pro Gln Leu Ala Ile Gln Arg Asp Ile Phe Ile Phe Gln Thr
 50 55 60
 Leu Ile Gly Cys Arg Val Ser Asp Leu Tyr Arg Met Thr Gln Ser Arg
 65 70 75 80
 Pro Thr His Ala Thr Arg Thr Ser Asp Arg Lys Ala
 85 90

<210> 6472
 <211> 480
 <212> PRT
 <213> B.fragilis

<400> 6472
 Arg Tyr Ile Met Lys Glu Glu Leu Ser Lys Ala Thr Arg Thr Glu Ser
 1 5 10 15
 Asp Leu Ile Gly Glu Arg Glu Val Pro Glu Thr Ala Leu Tyr Gly Val
 20 25 30
 Gln Thr Leu Arg Gly Ile Glu Asn Phe Arg Ile Ser Lys Tyr His Leu
 35 40 45
 Cys Glu Tyr Pro Leu Phe Ile Asn Ala Leu Ala Ile Thr Lys Met Gly
 50 55 60
 Ala Ala Met Ala Asn Phe Glu Leu Gly Leu Leu Thr Glu Glu Gln Ala
 65 70 75 80
 Asn Ala Ile Leu Arg Ala Cys Lys Glu Ile Leu Glu Gly Lys His His
 85 90 95
 Asp Gln Phe Pro Val Asp Met Ile Gln Gly Gly Ala Gly Thr Thr Thr
 100 105 110
 Asn Met Asn Ala Asn Glu Val Ile Ala Asn Arg Ala Leu Glu Leu Met
 115 120 125
 Gly His Lys Arg Gly Glu Tyr Gln Tyr Cys Ser Pro Asn Asp His Val
 130 135 140
 Asn Arg Ser Gln Ser Thr Asn Asp Ala Tyr Pro Thr Ala Ile His Ile
 145 150 155 160
 Gly Met Tyr Tyr Thr His Leu Lys Leu Val Lys His Phe Lys Glu Val
 165 170 175
 Ile Asp Ala Phe Arg Arg Lys Gly Glu Glu Phe Ala His Val Ile Lys
 180 185 190
 Met Gly Arg Thr Gln Leu Glu Asp Ala Val Pro Met Thr Leu Gly Gln
 195 200 205
 Thr Phe Asn Gly Phe Ala Ser Ile Leu Gln Asp Glu Val Lys Asn Leu

210	215	220
Asp Phe Ala Ala Gln Asp Phe Leu Thr Val Asn Met Gly Ala Thr Ala		
225	230	235
Ile Gly Thr Gly Ile Thr Ala Glu Pro Glu Tyr Ala Ser Lys Cys Ile		240
	245	250
Ala Ala Leu Arg Lys Ile Thr Gly Leu Asp Ile Arg Leu Ala Asp Asp		255
	260	265
Leu Ile Gly Ala Thr Ser Asp Thr Ser Cys Leu Val Gly Tyr Ser Ser		270
	275	280
Ala Met Arg Arg Ile Ala Val Lys Met Asn Lys Ile Cys Asn Asp Leu		285
	290	295
Arg Leu Leu Ala Ser Gly Pro Arg Cys Gly Leu Gly Glu Ile Asn Leu		300
305	310	315
Pro Ala Met Gln Pro Gly Ser Ser Ile Met Pro Gly Lys Val Asn Pro		320
	325	330
Val Ile Pro Glu Val Met Asn Gln Ile Asp Tyr Lys Val Ile Gly Asn		335
	340	345
Asp Leu Cys Val Ala Met Ser Gly Glu Ala Ala Gln Met Glu Leu Asn		350
	355	360
Ala Met Glu Pro Val Met Ala Gln Cys Cys Phe Glu Ser Ala Asp Leu		365
370	375	380
Leu Met Asn Gly Phe Asp Thr Leu Arg Thr Leu Cys Ile Asp Gly Ile		385
385	390	395
Thr Ala Asn Glu Glu Lys Cys Arg Lys Asp Val His Asn Ser Ile Gly		400
	405	410
Val Val Thr Ala Leu Asn Pro Val Ile Gly Tyr Lys Asn Ser Thr Lys		415
	420	425
Ile Ala Lys Glu Ala Gln Glu Thr Gly Lys Gly Val Tyr Glu Leu Val		430
	435	440
Leu Glu His Asp Ile Leu Ser Lys Glu Asp Leu Asp Thr Ile Leu Lys		445
	450	455
Pro Glu Asn Met Ile His Pro Val Lys Leu Asp Ile Lys Pro Asn His		460
465	470	475
		480

<210> 6473

<211> 355

<212> PRT

<213> B.fragilis

<400> 6473

Gly Ile Ile Ile Leu Leu Phe Phe Ala Val Arg Lys Lys Ser Ile Met	
1	5
Asp Ser Phe Asp Lys Tyr Ile Ser Arg Asn Leu Pro Leu Val Ser Leu	
	20
Ile Ser Ala Val Phe Ile Ile Tyr Pro Asn Ile Ala Cys Thr Pro Trp	
	35
Glu Leu Asn Ser Leu Glu Pro Ser Glu Tyr Leu Gly Phe Phe Ser Tyr	
	50
Phe Ile Tyr Arg Phe Leu Phe Phe Trp Gly Met Ile Gly Phe Leu Ile	
65	70
Asn Tyr Asn Leu Arg Gln Ile Pro Thr Ala Leu Phe Arg Lys Arg Leu	
	85
Thr His Asn Phe Leu Phe Ala Leu Thr Gly Tyr Leu Phe Phe Ala Ser	
	100
Val Ser Tyr Thr Ile Ser Ser His Gly Phe His Thr Asp Phe Leu Gly	
	115
Ser Thr Leu Ile Ser Gln Phe Phe Thr Leu Cys Phe Leu Cys Thr Leu	
	130
Val Gly Tyr Ile Ser Met Leu Tyr Thr Arg Gln Arg Glu Lys Glu Gln	
	135
	140

145		150		155		160									
Glu	Ile	Glu	Arg	Leu	Arg	Phe	Glu	Asn	Leu	Gln	Ser	Arg	Cys	Asp	Ala
		165							170					175	
Leu	Ala	Asn	Gln	Val	Asn	Pro	His	Phe	Phe	Phe	Asn	Ser	Leu	Asn	Gly
		180							185					190	
Ile	Ser	Ser	Leu	Ile	Arg	Lys	Lys	Asn	Asp	Glu	Asn	Thr	Leu	Thr	Tyr
		195						200				205			
Val	Asn	Gln	Leu	Ser	Asp	Ile	Phe	Arg	Tyr	Ile	Leu	Gln	Ser	Asp	Arg
		210					215					220			
Lys	Gly	Val	Val	Thr	Leu	Arg	Glu	Glu	Leu	Glu	Phe	Ile	Gln	Ser	Phe
225					230					235					240
Arg	Tyr	Val	Met	Glu	Val	Arg	Phe	Ala	Asn	Lys	Leu	Ser	Phe	Thr	Ile
			245						250					255	
Asp	Val	Asp	Glu	Ala	Gln	Lys	Asp	Val	Leu	Thr	Leu	Pro	Val	Leu	Ser
			260					265					270		
Leu	Leu	Pro	Leu	Val	Asp	Asn	Val	Thr	Val	His	Asn	Arg	Ile	Asp	Ser
		275					280					285			
Glu	His	Lys	Met	Asp	Ile	Ser	Ile	Arg	Leu	Asn	Glu	Gln	Tyr	Glu	Leu
290					295						300				
Val	Val	Ser	Asn	Pro	Ile	Tyr	Pro	Lys	Leu	Ser	Pro	Pro	Asp	Thr	Asn
305				310						315					320
Gly	Thr	Gly	Leu	Ser	Asn	Leu	Glu	Asn	Arg	Phe	Asn	Leu	Leu	Met	Asn
			325					330						335	
Lys	Gln	Ile	Arg	Ile	Glu	Thr	Asp	Glu	Lys	Val	Phe	Arg	Val	Tyr	Leu
			340					345					350		
Pro	Leu	Ile													
		355													

<210> 6474

<211> 301

<212> PRT

<213> B.fragilis

<400> 6474

Val	Thr	Pro	Met	Lys	Glu	Arg	Ile	Leu	Asn	Ile	Glu	Thr	Val	His	Gln
1			5					10					15		
Cys	Asn	Cys	Cys	Leu	Gly	Cys	Lys	Thr	Leu	His	Pro	Leu	Val	Ser	Val
		20						25				30			
Ile	Asp	Leu	Ser	Lys	Ser	Asp	Leu	Glu	Gln	Gln	Ile	Ile	Lys	Phe	Asp
		35					40					45			
Phe	Tyr	Thr	Ile	Leu	Met	Met	Glu	Gly	Glu	Ile	Asp	Asp	Ile	Leu	Tyr
		50				55					60				
Gly	Arg	Lys	Tyr	Tyr	Asp	Tyr	Ser	Asn	Ala	Ser	Leu	Val	Phe	Leu	Thr
65				70						75				80	
Pro	Gly	Glu	Ser	Ile	Lys	Ile	Asn	Lys	Ser	Lys	Ala	Leu	Pro	Ser	Lys
			85					90					95		
Gly	Trp	Leu	Leu	Ala	Phe	His	Pro	Asp	Leu	Ile	Ser	Gln	Thr	Ser	Leu
		100						105					110		
Gly	Glu	His	Ile	Lys	Asp	Tyr	Ser	Phe	Phe	Phe	Tyr	Asn	Pro	Glu	Glu
		115					120					125			
Ala	Leu	His	Leu	Ser	Gln	Arg	Glu	Lys	Ala	Lys	Ala	Val	Glu	Cys	Ile
		130				135					140				
Cys	Asn	Ile	Glu	Glu	Glu	Leu	Arg	His	Ala	Ile	Asp	Cys	His	Ser	Gln
145				150						155					160
Ile	Leu	Ile	Ser	Arg	Tyr	Ile	Glu	Leu	Leu	Leu	Asp	His	Cys	Asn	Arg
			165					170						175	
Phe	Tyr	Glu	Arg	Gln	Phe	Ile	Thr	Arg	Cys	Glu	Ala	Asn	Lys	Lys	Ile
			180					185					190		
Met	Lys	Lys	Thr	Asp	Val	Leu	Leu	Lys	Asp	Tyr	Ile	Leu	Ser	Gly	Lys

195	200	205
Leu Lys Tyr Asn Thr Ser Pro Ser Leu Gly Tyr Cys Ala Lys Ile Leu		
210	215	220
Gln Leu Ser Ser His Tyr Phe Asn Asp Leu Leu Lys Phe Glu Ser Gly		
225	230	235
Lys Asn Ile Asp Glu Tyr Phe Glu Ser Lys Arg Leu Glu Met Ala Lys		240
	245	250
Ser Met Leu Leu Asp Ser Asn Asn Thr Val Ser Val Val Thr Glu Lys		255
	260	265
Leu Gly Tyr Pro Asn Ile Arg Tyr Phe Ser Arg Leu Phe Lys Arg Ile		270
	275	280
Thr Gly Val Ala Pro Asn Asn Tyr Arg Leu Ser Gln Asn		285
290	295	300

<210> 6475
 <211> 587
 <212> PRT
 <213> B.fragilis

<400> 6475

Lys Met Tyr Ile Glu Lys Ile Asn Ser Pro Lys Asp Ile Lys Glu Leu		
1	5	10
Ser Val Glu Gln Leu Ser Val Leu Ala Glu Glu Val Arg Thr Ala Leu		15
	20	25
Ile Arg Lys Leu Ser Glu His Gly Gly His Ile Gly Pro Asn Leu Gly		30
	35	40
Met Val Glu Thr Thr Ile Ala Leu His Tyr Val Phe Asn Ser Pro Ile		45
	50	55
Asp Lys Ile Val Phe Asp Val Ser His Gln Ser Tyr Val His Lys Met		60
65	70	75
Leu Thr Gly Arg Met Ala Ala Phe Leu Asp Pro Ala Lys Tyr Asp Asp		80
	85	90
Val Thr Gly Tyr Thr Asn Pro Asp Glu Ser Glu His Asp Phe Phe Thr		95
	100	105
Ile Gly His Thr Ser Thr Ser Val Ser Leu Ala Met Gly Leu Ala Lys		110
	115	120
Gly Arg Asp Leu Thr Gly Gly Lys Glu Asn Ile Ile Ala Val Ile Gly		125
	130	135
Asp Gly Ser Leu Ser Gly Gly Glu Ala Leu Glu Gly Leu Asn Asn Ala		140
145	150	155
Ala Met Leu Gly Ser Asn Met Ile Ile Ile Val Asn Asp Asn Asp Gln		160
	165	170
Ser Ile Ala Glu Asn His Gly Gly Leu Tyr Lys Gly Leu Lys Glu Leu		175
	180	185
Arg Asp Thr Asn Gly Glu Ser Pro Asp Asn Ile Phe Lys Ala Met Gly		190
	195	200
Leu Glu Tyr Tyr Tyr Leu Gly Asp Gly His Asp Val Ser Ala Leu Ile		205
	210	215
Lys Leu Phe Thr Pro Val Lys Asp Ile Asp Arg Ala Val Val Leu His		220
225	230	235
Ile His Thr Ile Lys Gly Lys Gly Leu Lys Tyr Ala Glu Glu Asn Lys		240
	245	250
Glu Tyr Trp His Ala Gly Gly Pro Phe His Ile Glu Asp Gly Ser Pro		255
	260	265
Lys Gly Pro Gly Trp Pro Val Asn Glu Thr Val Arg Glu Ser Val Leu		270
	275	280
Asp Leu Ile Glu Lys Arg Ser Asp Val Val Ala Ile Thr Ala Gly Thr		285
290	295	300
Pro Ser Val Ile Gly Phe Thr Glu Asp Tyr Arg Lys Arg Ala Gly Lys		

305 310 315 320
 Gln Phe Val Asp Val Gly Ile Ala Glu Glu His Ala Val Ala Met Ala
 325 330 335
 Ser Gly Ile Ala Arg Asn Gly Gly Thr Pro Ile Phe Gly Val Phe Ser
 340 345 350
 Pro Phe Leu Gln Arg Thr Tyr Asp Gln Leu Ser Ser Asp Leu Cys Leu
 355 360 365
 Asn Asn Asn Pro Ala Val Ile Met Val Phe Met Ala Ser Val Tyr Gly
 370 375 380
 Met Asn Ser Asn Thr His Leu Gly Ile Tyr Asp Ile Pro Met Ile Ser
 385 390 395 400
 His Ile Pro Asn Leu Val Tyr Leu Ala Pro Thr Ser Lys Glu Glu Tyr
 405 410 415
 Leu Ala Met Phe Lys Tyr Ala Thr Thr Gln Lys Ala His Pro Ile Ala
 420 425 430
 Ile Arg Ile Pro Met Met Met Pro Glu Thr Gly Ile Glu Asp Thr Thr
 435 440 445
 Asp Tyr Ser Leu Leu Asn Lys Tyr Gln Val Val Arg Lys Gly Ser Gly
 450 455 460
 Val Ala Ile Ile Ala Leu Gly Asp Phe Phe Glu Leu Gly Val Gln Ile
 465 470 475 480
 Ala Asp Lys Tyr Lys Ile Leu Thr Gly Asn Asp Val Thr Leu Ile Asn
 485 490 495
 Pro Lys Phe Ile Thr Gly Ile Asp Glu Glu Leu Leu Glu Cys Leu Lys
 500 505 510
 Thr Asp His Glu Leu Val Leu Thr Leu Glu Asp Gly Ile Val Glu Gly
 515 520 525
 Gly Phe Gly Gln Thr Ile Ala Ser Phe Tyr Gly Leu Ser Asp Met Lys
 530 535 540
 Val Lys Asn Tyr Gly Ile Lys Lys Ser Phe Pro Thr Asp Phe Arg Pro
 545 550 555 560
 Glu Glu Leu Met Arg Glu Asn Gly Leu Ser Val Glu Gln Ile Val Glu
 565 570 575
 Asp Ile Lys Ser Val Cys Arg Glu His Val Met
 580 585

<210> 6476
 <211> 221
 <212> PRT
 <213> B.fragilis

<400> 6476
 Asn Tyr Ile Phe Val Pro Asn Phe Lys His Asn Leu Val Met Lys Lys
 1 5 10 15
 Ile Ile Ser Ala Leu Met Met Ala Val Cys Ile Gly Met Ala Met Pro
 20 25 30
 Ala Gln Ala Gln Leu Ile Lys Phe Gly Val Lys Gly Gly Val Asn Leu
 35 40 45
 Ala Lys Ala Asp Leu Asn Thr Ser Asp Phe Lys Thr Asp Asn Phe Thr
 50 55 60
 Gly Phe Phe Ile Gly Pro Met Ala Glu Val Thr Ile Pro Leu Ile Gly
 65 70 75 80
 Leu Gly Val Asp Ala Ser Leu Leu Phe Ser Gln Arg Gly Val Lys Val
 85 90 95
 Ser Ser Arg Asp Phe Ile Asp Pro Leu Ala Asp Ser Asp Pro Ile Ile
 100 105 110
 Gly Asn Arg Thr Ile Arg Gln Asn Gly Leu Asp Ile Pro Ile Asn Leu
 115 120 125
 Lys Tyr Thr Ile Gly Leu Gly Ser Ser Leu Gly Ile Tyr Val Ala Ala

130		135		140
Gly Pro Asp Phe Tyr Phe Asn Phe Ser Gly Asp Lys Val Tyr Glu Asn				
145		150		155
Tyr Gly Arg Leu Asn Lys Lys Asn Ala Gln Ile Gly Ile Asn Val Gly				160
		165		170
Ala Gly Val Lys Leu Leu Arg His Leu Gln Val Gly Ala Asn Tyr Asn				175
		180		185
Ile Pro Leu Asn Lys Thr Ala Glu Trp Lys Glu Ala Asp Phe Ser Tyr				190
		195		200
Lys Thr Lys Met Trp Gln Ile Ser Ala Ala Tyr Ile Phe				205
		210		215
				220

<210> 6477

<211> 401

<212> PRT

<213> B.fragilis

<400> 6477

Lys Asn Val Met Phe Gln His Gln Phe Ile Asp Ser Leu Thr Gly Leu				
1	5		10	15
Leu Cys Phe Phe Gly Asn Leu Gly Arg Val Phe Ile Ser Asp Asn Arg				
	20		25	30
Ile Gln Cys Ser His His Thr Asp Thr Val Val Asn Ile Phe Pro Ala				
	35		40	45
Phe Phe Leu Ile Gly Arg Asp Ala Val Tyr Thr Gln Gly Thr Gln Arg				
	50		55	60
Ile Glu Thr Ile His Gln Gln Ile Gly Arg Phe Glu Thr Ala Leu Gly				
65	70		75	80
His Asp Arg Phe His Arg Ile Gln Phe His Leu Gly Arg Phe Thr Thr				
	85		90	95
His Ser Tyr Thr Lys Val Val Thr Tyr Tyr Phe Ile Val Asn Leu Ile				
	100		105	110
His His Phe Gly Asn Asn Arg Ile Asp Leu Thr Arg His Asn Gly Arg				
	115		120	125
Thr Gly Leu His Gly Arg Gln Ile Asp Phe Ala Gln Pro Ala Thr Arg				
	130		135	140
Ala Gly Cys Gln Lys Ala Gln Val Ile Thr Tyr Leu Ile His Phe Tyr				
145	150		155	160
Ser Tyr Thr Ala His Ser Arg Arg Val Thr Tyr Gln Thr Arg Ser Val				
	165		170	175
Gly Ser Ser Ser Tyr Gln Ile Ile Gly Gln Thr Asp Ile Gln Ser Gly				
	180		185	190
Asn Leu Pro Glu Ser Arg Tyr Ala Phe Ala Cys Ile Phe Arg Leu Gly				
	195		200	205
Gly Asp Ser Gly Ser Asp Gly Ser Ser Ser His Ile Asp Gly Gln Glu				
	210		215	220
Val Leu Ser Ser Lys Val Gln Val Leu Asp Phe Ile Leu Lys Asp Thr				
225	230		235	240
Gly Lys Thr Ile Glu Arg Leu Ser Glu Arg His Arg His Arg Ile Phe				
	245		250	255
Gln Leu Gly Ala Pro His Leu Asp His Val Cys Lys Phe Phe Ala Leu				
	260		265	270
Ser Ser Glu Ser Ile Asp His Leu Leu Lys Met Phe His Gln Phe Glu				
	275		280	285
Val Arg Ile Ile His Thr Asp Met Asp Ser Gly Arg Ile Ser Val Ile				
	290		295	300
Gly Arg Leu Arg Thr Val Asn Met Ile Ile Gly Arg Thr Ile Leu Ile				
305	310		315	320
Phe Pro Thr Phe Met Ser His Gln Leu Glu Cys Ala Val Gly Tyr His				

				325					330				335			
Leu	Val	Gly	Ile	His	Val	Gly	Gly	Ser	Ser	Gly	Ser	Thr	Leu	Asp	His	
			340					345					350			
Val	Tyr	Arg	Glu	Leu	Val	Met	Met	Phe	Pro	Phe	Gln	Asn	Phe	Phe	Thr	
		355					360					365				
Cys	Thr	Lys	Asn	Gly	Ile	Cys	Leu	Leu	Phe	Gly	Gln	Gln	Ser	Lys	Phe	
	370					375					380					
Lys	Val	Ser	His	Ser	Gly	Ser	His	Leu	Gly	Asn	Gly	Gln	Cys	Ile	Asp	
385					390					395					400	
Lys																

<210> 6478

<211> 806

<212> PRT

<213> B.fragilis

<400> 6478

Phe	Thr	Tyr	Ile	Thr	Phe	Phe	Leu	Leu	Thr	Leu	Lys	Asn	Arg	Gly	Met	
1			5						10					15		
Arg	Lys	Trp	Thr	Tyr	Leu	Val	Ala	Ala	Leu	Leu	Val	Gly	Gly	Ala	Thr	
		20					25						30			
Thr	Thr	Phe	Thr	Gly	Cys	Ile	Asp	Asn	Asp	Glu	Pro	Ala	Gly	Ile	Glu	
		35				40					45					
Gln	Leu	Arg	Gly	Ala	Lys	Ala	Glu	Phe	Ile	Lys	Ala	Lys	Ala	Ala	Tyr	
	50					55					60					
Glu	Asp	Ala	Leu	Thr	Gln	Ile	Gln	Leu	Val	Lys	Val	Glu	Arg	Glu	Lys	
65					70					75					80	
Val	Lys	Leu	Glu	Lys	Asp	Gln	Val	Asn	Leu	Glu	Leu	Lys	Lys	Cys	Ser	
				85					90					95		
Leu	Glu	Val	Glu	Gln	Ala	Lys	Thr	Ala	Glu	Gln	Lys	Ala	Phe	Trp	Glu	
			100					105					110			
Ala	Glu	Ala	Gln	Lys	Arg	Thr	Glu	Glu	Phe	Lys	Ala	Lys	Ile	Leu	Asp	
	115						120					125				
Leu	Gln	Thr	Leu	Thr	Ala	Gln	Ala	Glu	Tyr	Asn	Asn	Lys	Lys	Ala	Leu	
	130					135					140					
Met	Asp	Ile	Glu	Val	Ala	Leu	Leu	Thr	Met	Lys	Asp	Asp	Ala	Tyr	Thr	
145				150						155					160	
Ala	Glu	Ile	Asn	Lys	Tyr	Arg	Ala	Ala	Leu	Val	Gly	Tyr	Thr	Phe	Lys	
			165						170					175		
Ser	Glu	Ser	Thr	Thr	Asn	Gly	Glu	Thr	Thr	Ile	Thr	Thr	Asn	Ser	Ser	
			180					185					190			
Tyr	Gly	Ala	Leu	Ala	Asp	Leu	Ala	Glu	Ala	Lys	Ser	Ser	Leu	Met	Lys	
	195						200					205				
Ala	Glu	Val	Ala	Arg	Ile	Asn	Phe	Leu	Ser	Lys	Asn	Lys	Tyr	Tyr	Pro	
	210					215						220				
Glu	Glu	Leu	Gln	Leu	Glu	Arg	Thr	His	Ala	Ala	Lys	Thr	Leu	Glu	Ile	
225					230						235				240	
Gln	Met	Ala	Leu	Met	Glu	Glu	Tyr	Lys	Ala	Leu	Asp	Ala	Thr	Gly	Thr	
			245						250					255		
Asp	Ser	Lys	Ala	Leu	Ala	Asp	Lys	Leu	Lys	Gly	Tyr	Lys	Thr	Asp	Leu	
			260					265					270			
Gln	Ala	Leu	Asp	Ala	Lys	Glu	Asp	Glu	Ala	Tyr	Thr	Lys	Ile	Glu	Glu	
	275						280					285				
Met	Arg	Lys	Pro	Ile	Phe	Pro	Ile	Asn	Gln	Gln	Ile	Ile	Glu	Glu	Lys	
	290					295					300					
Ile	Lys	Leu	Asp	Ala	Thr	Ser	Ser	Ala	Tyr	Thr	Leu	Ala	Lys	Ala	Asp	
305					310					315					320	
Val	Asp	Pro	Ala	Leu	Val	Asn	Gly	Leu	Tyr	Ser	Ala	Leu	Ser	Thr	Gly	

																325																	330																	335
Glu	Asp	Glu	Glu	Lys	Leu	Val	Glu	Asp	Leu	Asp	Lys	Ile	Phe	Val	Gln																																			
																340																	345																	350
Asp	Ser	Trp	Asn	Ala	Glu	Leu	Leu	Asn	Tyr	Gln	Tyr	Thr	Met	Lys	Lys																																			
																355																	360																	365
Asp	Val	Val	Ile	Asn	Asp	Leu	Ser	Leu	Asn	Asn	Lys	Ala	Thr	Lys	Ile																																			
																370																	375																	380
Gly	Ala	Ile	Ala	Asp	Ala	Ile	Lys	Ala	Tyr	Tyr	Gln	Gly	Glu	Asn	Ser																																			
																385																	390																	400
Glu	Ala	Phe	Asp	Ala	Ser	Gly	Lys	Leu	Leu	Asp	Ala	Tyr	Lys	Thr	Lys																																			
																405																	410																	415
Phe	Glu	Asn	Glu	Leu	Lys	Arg	Leu	Glu	Ile	Asp	Lys	Lys	Pro	Ala	Tyr																																			
																420																	425																	430
Asp	Gln	Phe	Lys	Ser	Asp	Ser	Thr	Ala	Trp	Ile	Asn	Ala	Tyr	Val	Ala																																			
																435																	440																	445
Tyr	Val	Ala	Ala	Leu	Lys	Ala	Tyr	Asn	Asn	Tyr	Lys	Gly	Thr	Asn	Thr																																			
																450																	455																	460
Tyr	Gln	Ala	Ile	Thr	Lys	Glu	Val	Thr	Thr	Tyr	Asn	Ser	Leu	Lys	Ala																																			
																465																	470																	480
Glu	Asp	Lys	Lys	Leu	Glu	Thr	Ala	Asn	Ala	Leu	Arg	Thr	Ser	Ile	Leu																																			
																485																	490																	495
Gly	Tyr	Leu	Gly	Lys	Arg	Lys	Ala	Val	Asp	Gly	Phe	Asn	Ala	Glu	Phe																																			
																500																	505																	510
Ala	Thr	Thr	Tyr	Lys	Asp	Ala	Leu	Thr	Asp	Ala	Asn	Leu	Ala	Thr	Phe																																			
																515																	520																	525
Asn	Glu	Ala	Ile	Ala	Thr	Ala	Val	Ser	Asp	Gly	Ile	Ser	Ser	Leu	Ile																																			
																530																	535																	540
Gly	Asn	Glu	Thr	Leu	Ala	Thr	Ser	Phe	Asn	Asp	Lys	Val	Glu	Gly	Ser																																			
																545																	550																	560
Thr	Leu	Phe	Ala	Phe	Leu	Glu	Ala	Asn	Gln	Ala	Leu	Phe	Gly	Gly	Ser																																			
																565																	570																	575
Glu	Leu	Asn	Leu	Glu	Lys	Ser	Ile	Glu	Pro	Lys	Glu	Ile	Ser	Ala	Asn																																			
																580																	585																	590
Lys	Tyr	Asp	Met	Pro	Lys	Asn	Val	Ser	Gln	Leu	Ile	Asp	Asn	Pro	Glu																																			
																595																	600																	605
Asn	Asn	Ser	Gly	Ser	Phe	Val	Lys	Tyr	Thr	Tyr	Leu	Ala	Gln	Glu	Ser																																			
																610																	615																	620
Asn	Tyr	Leu	Val	Asn	Leu	Asp	Lys	Trp	Gln	Ala	Leu	Tyr	Ala	Lys	Ile																																			
																625																	630																	640
Lys	Ala	Glu	Ala	Asp	Pro	Val	Leu	Ala	Glu	Val	Asp	Ala	Ile	Asn	Glu																																			
																645																	650																	655
Lys	Ile	Ala	Thr	Leu	Glu	Ser	Gln	Ile	Lys	Asp	Glu	Asn	Ala	Ala	Leu																																			
																660																	665																	670
Trp	Gln	Ala	Glu	Leu	Ala	Cys	Tyr	Leu	Ile	Lys	Gly	Asp	Lys	Ser	Lys																																			
																675																	680																	685
Arg	Gln	Asn	Glu	Ile	Phe	Ser	Glu	Ser	Asn	Pro	Tyr	Lys	Asn	Tyr	Tyr																																			
																690																	695																	700
Thr	Ser	Asn	Glu	Gln	Glu	Pro	Leu	Leu	Gly	Asn	Val	Val	Thr	Glu	Tyr																																			
																705																	710																	720
Ser	Lys	Leu	Glu	Ala	Glu	Ile	Ala	Le																																										

Glu Tyr Leu Asp Leu Ser
805

<210> 6479

<211> 523

<212> PRT

<213> B.fragilis

<400> 6479

Lys	Thr	Arg	Ile	Met	Asn	Val	Ile	Ile	Tyr	Cys	Arg	Val	Ser	Ser	Asp
1				5					10					15	
Glu	Gln	Thr	Leu	Gly	Ala	Ser	Leu	Asp	Val	Gln	Glu	Glu	Arg	Leu	Arg
			20					25					30		
Lys	Tyr	Cys	Asn	Gln	Met	Gly	Tyr	Asn	Ile	Ile	Asn	Asn	Ile	Pro	Tyr
		35					40					45			
Arg	Glu	Asp	Glu	Ser	Ala	Lys	Thr	Phe	Glu	Lys	Arg	Pro	Val	Ile	Gln
	50					55					60				
Gly	Ile	Met	Ser	Tyr	Ile	Arg	Lys	Asn	Lys	Gly	Lys	Val	Asn	Lys	Leu
65					70					75					80
Leu	Phe	Leu	Arg	Trp	Asp	Arg	Tyr	Ser	Arg	Asp	Ile	Ile	Ser	Ala	Ser
				85					90					95	
Glu	Asn	Leu	Lys	Glu	Leu	Leu	Lys	Leu	Gly	Val	Glu	Pro	Asn	Ala	Ile
			100					105					110		
Glu	Ala	Pro	Leu	Asp	Phe	Asn	Ser	Asp	Thr	Trp	Pro	Leu	Leu	Leu	Gly
	115						120						125		
Val	His	Ile	Gly	Ser	Ala	Gln	Cys	Asp	Asn	Ile	Lys	Arg	Ser	Lys	Ala
	130					135					140				
Thr	Met	Asp	Gly	Ile	His	Gly	Thr	Leu	Ala	Lys	Gly	Lys	Cys	Ala	Asn
145					150					155					160
Lys	Ala	Pro	Arg	Gly	Tyr	Lys	Asn	Val	Arg	Ile	Ser	Lys	His	Glu	Thr
				165					170					175	
His	Val	Glu	Ile	Asp	Thr	Asn	Thr	Ala	Pro	Phe	Ile	Gln	Ala	Met	Phe
			180					185						190	
Lys	Glu	Val	Ala	Lys	Gly	Ile	Glu	Thr	Pro	Cys	Tyr	Ile	Arg	Arg	Lys
	195						200						205		
Phe	Ala	Arg	Lys	Gly	Tyr	Asn	Ile	Pro	Glu	Ser	Ser	Phe	Leu	Glu	Met
	210					215					220				
Leu	Arg	Asn	Lys	Phe	Tyr	Ile	Gly	Lys	Ile	Arg	Val	Pro	Ala	Tyr	Lys
225					230					235					240
Gly	Glu	Pro	Glu	Tyr	Tyr	Val	Asn	Gly	Glu	His	Glu	Ala	Ile	Ile	Asp
			245					250						255	
Glu	Glu	Thr	Phe	Tyr	Lys	Val	Gln	Glu	Ile	Leu	Asp	Gly	Lys	Arg	Lys
			260					265					270		
Lys	Thr	Pro	Lys	Leu	Ser	Lys	Ala	Ile	Asn	Pro	Asp	Leu	Tyr	Leu	Arg
		275					280					285			
Lys	Phe	Leu	Ile	Cys	Pro	Val	Cys	Gly	Cys	Ala	Leu	Thr	Gly	Ala	Thr
	290					295					300				
Ser	Ser	Gly	Asn	Gly	Gly	Lys	Tyr	Thr	Tyr	Tyr	Phe	Cys	Cys	Asn	Asn
305					310					315					320
Gln	Lys	His	Ile	Arg	Met	Arg	Ala	Glu	Asn	Val	Asn	Glu	Glu	Phe	Ala
			325						330					335	
Arg	Tyr	Thr	Ala	Gln	Leu	Lys	Pro	Asn	Lys	Thr	Val	Leu	Asn	Leu	Tyr
			340					345					350		
Asn	Glu	Ile	Leu	Lys	Asp	Leu	Gln	Asn	Glu	Arg	Lys	Gly	Glu	Ser	Lys
	355						360					365			
Lys	Glu	Val	Val	Ala	Leu	Gln	Asn	Glu	Leu	Ser	Thr	Val	Gln	Lys	Arg
	370					375					380				
Ile	Asn	Ser	Ile	Glu	Asp	Lys	Tyr	Leu	Asp	Gly	Asp	Leu	Thr	Lys	Glu
385					390					395					400

Glu	Tyr	Asn	Arg	Met	Leu	Glu	Arg	Tyr	Thr	Lys	Glu	Ala	Ser	Thr	Ile
				405					410					415	
Gln	Gln	Gln	Val	Glu	Met	Arg	Glu	Asn	Pro	Asn	Arg	Ser	Asn	Ile	Glu
			420					425					430		
Pro	Lys	Leu	Asn	Tyr	Ser	Ile	Asn	Leu	Ile	Asn	Asn	Ile	Asp	Ser	Tyr
			435					440					445		
Ile	Arg	Asn	Ala	Ser	Val	Gly	Val	Lys	Ile	Lys	Leu	Ile	Ser	Ser	Met
						450		455			460				
Phe	Pro	Glu	Lys	Ile	Glu	Phe	Asp	Gly	Lys	Thr	Tyr	Arg	Thr	Asn	Ser
465						470				475					480
Tyr	Asn	Lys	Val	Leu	Asp	Leu	Ile	Tyr	Gln	Gln	Thr	Asn	Glu	Leu	Arg
				485					490					495	
Gly	Val	Glu	Lys	Lys	Ser	Gly	Glu	Ser	Phe	Ser	Thr	Phe	Ser	Ala	Ser
			500					505						510	
Val	Pro	Arg	Pro	Gly	Val	Glu	Pro	Gly	Trp	Lys					
		515						520							

<210> 6480

<211> 339

<212> PRT

<213> B.fragilis

<400> 6480

Lys	Asn	Asn	Phe	Asn	Phe	Leu	Met	Lys	Ser	Gln	Tyr	Glu	Lys	Lys	Arg
1				5					10					15	
Leu	Ile	Thr	Phe	Asp	Arg	Ile	Lys	Ile	Lys	Ser	Asn	Tyr	Lys	Tyr	Leu
			20					25					30		
Leu	Asn	Thr	Lys	Val	Lys	Phe	Asn	Glu	Met	Phe	His	Ser	Arg	Ser	Gly
			35					40				45			
Glu	Lys	Ile	Gly	Ile	Phe	Tyr	Ser	Ser	Lys	Asp	Asp	Ile	Asn	Ile	Pro
			50			55					60				
Tyr	Asn	Leu	Tyr	Ile	Ala	Val	Ser	Tyr	Ile	Lys	Gln	Thr	Leu	Thr	Leu
65					70					75					80
Glu	Phe	Ser	Ser	Lys	Ile	Leu	Lys	Glu	Lys	Tyr	Pro	Asp	Leu	Ile	Ser
				85					90					95	
Arg	Asp	Thr	Ile	Lys	Glu	Cys	Leu	Thr	Asn	Ile	Asn	Gln	Leu	His	Ile
			100					105					110		
Cys	Asp	Ile	Asp	Val	Asp	Ser	Ile	Leu	Ser	Asn	Gly	Ala	Ile	Thr	Ser
			115				120					125			
Val	Asp	Val	Thr	Tyr	Asp	Ala	Asn	Leu	Ile	Leu	Ser	Asp	Asn	Leu	Leu
			130			135					140				
Asn	Ile	Leu	Asn	Ser	Gln	Val	Thr	Asn	Tyr	Arg	Arg	Phe	Lys	Trp	Ala
145					150					155					160
His	Tyr	Asp	Lys	Glu	Gly	Ile	Thr	Phe	Thr	Lys	Asp	Val	Lys	Ser	Lys
				165					170					175	
Asp	Cys	Thr	Glu	Thr	Ile	Thr	Leu	Tyr	Asn	Lys	Glu	Lys	Glu	Ile	Cys
			180					185					190		
Thr	Ser	His	Asn	Lys	Asp	Phe	Leu	Asn	Ser	Leu	Ser	Gln	Pro	Gln	Ser
			195				200					205			
Val	Ile	Asp	Tyr	Phe	Lys	Gly	Lys	Thr	Arg	Phe	Glu	Ile	Thr	Leu	Asn
			210			215					220				
Thr	Val	Lys	Lys	Ile	Met	Asn	Tyr	Leu	Asn	Leu	Thr	Asp	Thr	Lys	Ile
225					230					235					240
Phe	Ser	Val	Leu	Asn	Ser	Asp	Thr	Asn	Pro	Ile	Leu	Thr	Gln	Phe	Asp
				245					250					255	
Lys	Val	Phe	Gly	Asn	Ser	Thr	Ala	Asn	Met	Pro	Asn	Thr	Thr	Phe	Asp
			260					265					270		
Asp	Tyr	Glu	Asn	Trp	Ala	Met	Lys	Ile	Ile	Leu	Glu	Arg	Tyr	Asn	Gly
			275				280					285			

Asp Leu Lys Leu Leu Glu Gln Asp Ile Arg Ser Lys Phe Asn Ser Arg
 290 295 300
 Ser Gly Ala Ser Lys Arg Met Lys Lys Phe Glu Thr Val Tyr His Ala
 305 310 315 320
 Met Thr Ser Ala Ser Thr Ser Glu Asn Pro Ile Glu Lys Ile Arg Asn
 325 330 335
 Leu Leu Leu

<210> 6481
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 6481
 Met Met Ser Val Leu Leu Leu Pro Leu Arg Trp Arg Leu Leu Ser Ala
 1 5 10 15
 Lys Ser Met Pro Pro Thr Lys Phe Phe His Leu Tyr Ile Leu Leu Leu
 20 25 30
 Phe Arg Glu Gly Val Val Ala Leu Arg Phe Ala Thr Phe Ala Val Pro
 35 40 45
 Phe Ala Gly Gly Pro Asn Ala Gly Phe Leu His Tyr Pro Lys Ala Val
 50 55 60
 Gln Ser Gln Pro Ile Tyr Trp Pro Ile Ser Thr Val Tyr Arg Ile Ile
 65 70 75 80
 Tyr Leu Ser Cys Pro Val Lys
 85

<210> 6482
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 6482
 Glu Arg Ser Leu Val Phe Ala Arg Ile Leu Ile Thr Phe Val Arg Asn
 1 5 10 15
 His Tyr Gln Leu Ser Asn Gly Lys Lys Asp Glu Val Trp Gln Val Val
 20 25 30
 Ser Ser Lys Tyr Leu Phe Arg Arg Pro Trp Leu Thr Val Arg Cys Asp
 35 40 45
 Asp Met Leu Leu Pro Asn Gly Asn His Ile Pro Glu Tyr Tyr Ile Leu
 50 55 60
 Glu Tyr Pro Asp Trp Val Asn Thr Ile Ala Ile Thr Lys Glu Gly Lys
 65 70 75 80
 Phe Val Phe Val Arg Gln Phe Arg Pro Gly Ile Gly Lys Gln Leu Tyr
 85 90 95
 Glu Leu Cys Ala Gly Val Cys Glu Lys Glu Asp Ala Ser Pro Leu Val
 100 105 110
 Ser Ala Gln Arg Glu Leu Leu Glu Glu Thr Gly Tyr Gly Lys Gly Asn
 115 120 125
 Trp Lys Glu Tyr Met Val Ile Ser Ala Asn Pro Ser Thr His Thr Asn
 130 135 140
 Leu Thr His Cys Phe Leu Ala Thr Asp Val Glu Gln Ile Asp Thr Gln
 145 150 155 160
 His Leu Glu Asp Thr Glu Ala Leu Thr Val His Leu Leu Ser Leu Glu
 165 170 175
 Glu Val Lys Glu Leu Leu Glu Asn Gly Gln Ile Met Gln Ser Leu His
 180 185 190
 Ala Ala Pro Leu Trp Lys Tyr Met Ala Glu His Lys Gln Ile

195

200

205

<210> 6483
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6483
 Arg Val Ile Ser Ser Tyr Glu Val Ile Ser Ser Lys Arg Val Ser Thr
 1 5 10 15
 Val Ile Gly Asp Phe Phe Cys Pro Asn Glu Pro Met His Arg Val Glu
 20 25 30
 Lys Ser Lys Val Met Leu Asn Leu Ile Ile Pro Val Val Asn Trp Gly
 35 40 45
 Phe Gly Asn Asp Ser Lys Gly Cys Phe Asp Phe Val Phe Met Pro
 50 55 60

<210> 6484
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 6484
 Ile Met Glu Leu Gln Val Ile Gln Asn Lys Ile Tyr Glu Val Arg Gly
 1 5 10 15
 Gln Lys Val Met Leu Asp Phe Asp Leu Ala Glu Leu Tyr Gly Ser Glu
 20 25 30
 Thr Lys Arg Leu Lys Glu Ala Val Arg Arg Asn Leu Lys Arg Phe Pro
 35 40 45
 Ser Asp Phe Met Phe Glu Leu Thr Lys Glu Glu Phe Glu Ser Leu Arg
 50 55 60
 Ser Gln Ile Ala Ser Ser Asn Lys Arg Gly Gly Thr Arg Tyr Met Pro
 65 70 75 80
 Phe Ala Phe Thr Glu Gln Gly Val Ala Met Leu Ser Ser Val Leu Asn
 85 90 95
 Ser Glu Ser Ala Ile Glu Ile Asn Ile Ser Ile Met Arg Ala Phe Val
 100 105 110
 Thr Val Arg Gln Tyr Leu Ser Ser Leu Asn Ser Thr Thr Lys Glu Ile
 115 120 125
 Glu Glu Leu Lys Gln Arg Met Lys Met Leu Glu Glu Gly Asn Glu Asp
 130 135 140
 Ile Ile Ala Ala Val Asn Asp Leu Ser Glu Asp Thr Arg Lys Glu Leu
 145 150 155 160
 Asp Asp Ile Tyr Leu Ala Leu Ser Gln Leu Ala Glu Lys Gln Lys His
 165 170 175
 Val Asn Lys Gln Thr Glu Arg Arg Pro Ile Gly Phe Ala His Tyr Lys
 180 185 190
 Glu Asn Asn Lys Lys
 195

<210> 6485
 <211> 812
 <212> PRT
 <213> B.fragilis

<400> 6485
 Leu Ser Pro Ser Pro Asn Lys Glu Thr Pro Thr Met Lys Glu Asp Leu
 1 5 10 15
 Tyr Asp Asp Leu Tyr Glu Glu Lys Glu Glu Lys Ile Asp Phe His Ala

			20					25					30			
Leu	Leu	Phe 35	Arg	Tyr	Val	Ile	Arg 40	Trp	Pro	Trp	Phe	Val 45	Ala	Ser	Val	
Ile	Ile 50	Cys	Leu	Ala	Gly	Ala 55	Trp	Leu	His	Leu	Arg 60	Gln	Thr	Thr	Pro	
Val 65	Tyr	Asn	Ile	Ser	Ala 70	Ser	Val	Ile	Ile	Lys 75	Asp	Asp	Lys	Lys	Gly 80	
Gly	Asn	Ser	Gly	Gly 85	Asn	Leu	Ala	Ala 90	Leu	Glu	Gly	Leu	Gly	Leu 95	Val	
Asn	Ser	Val	Ser	Asn 100	Ile	Asp	Asn	Glu 105	Ile	Glu	Ile	Leu	Arg	Ser	Lys	
Thr	Leu	Val 115	Lys	His	Val	Val	Ser 120	Glu	Leu	Asn	Leu	Tyr 125	Thr	Thr	Tyr	
Ser	Val 130	Lys	Gly	Ser	Phe	Asn 135	Glu	Val	Glu	Leu	Tyr 140	Lys	Ser	Ser	Pro	
Val 145	Leu	Val	Gly	Leu	Thr 150	Pro	Gln	Glu	Ala	Asp 155	Arg	Leu	Pro	Gly	Pro 160	
Ala	Val	Phe	Glu	Leu 165	Thr	Leu	Ser	Pro	Gly 170	Asn	Arg	Leu	Asp	Val 175	Lys	
Ala	Thr	Val 180	Gly	Glu	Thr	Ser	Tyr 185	Asn	Lys	Lys	Phe	Ser	Lys	Leu	Pro	
Gly	Leu 195	Leu	Val	Thr	Pro	Ala	Gly 200	Thr	Phe	Thr	Phe 205	Thr	Leu	Ala	Gly	
Asp	Ser 210	Ala	Gly	Val	Ser	Glu 215	Pro	Gln	Thr	Leu	Thr 220	Ala	Val	Val	Ser	
Asn 225	Pro	Met	Gln	Thr 230	Ala	Lys	Arg	Tyr	Ala	Ala 235	Ala	Leu	Ser	Val	Glu 240	
Pro	Thr	Ser	Lys	Thr 245	Thr	Ser	Ile	Val	Ile 250	Val	Ser	Leu	Lys	Asn 255	Thr	
Asn	Lys	Arg	Arg 260	Gly	Glu	Asp	Phe 265	Ile	Asn	Arg	Leu	Ile 270	Glu	Val	Tyr	
Asn	Arg	Asn 275	Thr	Asn	Asn	Asp	Lys 280	Asn	Glu	Val	Ala 285	Glu	Lys	Thr	Glu	
Glu	Phe 290	Ile	Ala	Gly	Arg	Ile 295	Arg	Ile	Ile	Asn 300	Asp	Glu	Leu	Phe	Ser	
Thr 305	Glu	Lys	Glu	Leu 310	Glu	Thr	Phe	Lys	Arg	Asp 315	Ala	Gly	Leu	Thr	Asp 320	
Leu	Ala	Ser	Asp 325	Ala	Gln	Leu	Ala	Val	Ser 330	Glu	Asn	Ser	Ala	Tyr 335	Glu	
Lys	Gln	Arg	Val 340	Glu	Asn	Gly	Thr 345	Gln	Leu	Asn	Leu 350	Val	Arg	Tyr	Leu	
Ala	Glu 355	Tyr	Ile	Ser	Ala	Pro	Asp 360	Lys	Ile	Asn	Ala 365	Val	Leu	Pro	Val	
Asn	Val 370	Gly	Leu	Thr	Asp	Gln 375	Ser	Leu	Ser	Ser 380	Leu	Ile	Gly	Gln	Tyr	
Asn 385	Glu	Met	Val	Leu 390	Gln	Arg	Asn	Arg	Leu	Leu 395	Arg	Asn	Ser	Ser	Glu 400	
Ser	Asn	Pro	Val 405	Ile	Val	Asn	Leu	Asp	Ser 410	Gly	Ile	Arg	Ala	Met 415	Arg	
Glu	Asn	Ile	Leu 420	Thr	Thr	Ile	His 425	Ser	Val	Gln	Lys 430	Gly	Leu	Leu	Ile	
Thr	Lys 435	Ala	Asp	Leu	Asp	Arg	Gln 440	Ala	Asn	Lys	Phe 445	Asn	Arg	Arg	Ile	
Ser	Asn 450	Ala	Pro	Ala	Gln	Glu 455	Arg	Gln	Phe	Val 460	Ser	Ile	Ser	Arg	Gln	
Gln 465	Glu	Ile	Lys	Ala 470	Gly	Leu	Tyr	Leu	Met	Leu 475	Leu	Gln	Lys	Arg	Glu 480	
Glu	Asn	Ser	Ile 485	Ala	Leu	Ala	Ala 490	Thr	Ala	Asn	Asn 495	Ala	Lys	Ile	Val	

Asp Glu Ala Met Ala Asp Asn Gly Pro Val Ser Pro Lys Thr Lys Thr
 500 505 510
 Ile Tyr Met Ile Ala Leu Val Met Gly Met Gly Ile Pro Val Ala Ile
 515 520 525
 Ile Tyr Val Met Gly Leu Leu Gln Phe Arg Ile Glu Gly Arg Ala Asp
 530 535 540
 Val Glu Lys Leu Thr Ser Ala Pro Ile Ile Gly Asp Ile Pro Leu Ala
 545 550 555 560
 Glu Glu Gly Asn Gly Lys Ala Gly Gly Ile Ala Val Arg Glu Asn Glu
 565 570 575
 Asn Ser Leu Met Ala Glu Thr Phe Arg Gly Ile Arg Thr Asn Leu Gln
 580 585 590
 Phe Met Leu Gly Glu Glu Asn Lys Val Ile Leu Val Thr Ser Thr Ile
 595 600 605
 Ser Gly Glu Gly Lys Thr Phe Val Ala Thr Asn Leu Ala Ile Ser Leu
 610 615 620
 Ser Leu Leu Gly Lys Arg Val Val Ile Val Gly Leu Asp Ile Arg Lys
 625 630 635 640
 Pro Gly Leu Asn Lys Val Phe Asn Leu Ser Gln Lys Glu Lys Gly Ile
 645 650 655
 Thr Gln Phe Leu Ala Gly Pro Gln Thr Thr Asp Leu Met Ser Met Val
 660 665 670
 Gln Pro Ser Gly Ile Ser Arg Thr Leu Ser Ile Leu Pro Gly Gly Thr
 675 680 685
 Val Pro Pro Asn Pro Thr Glu Leu Leu Ala Arg Gln Ala Leu Val Glu
 690 695 700
 Ala Ile Asp Ile Leu Lys Lys His Phe Asp Tyr Ile Val Leu Asp Thr
 705 710 715 720
 Ala Pro Ile Gly Met Val Thr Asp Thr Gln Ile Ile Ala Arg Val Ala
 725 730 735
 Asp Leu Ser Val Tyr Val Cys Arg Ala Asp Tyr Thr His Lys Ala Asp
 740 745 750
 Tyr Thr Leu Leu Glu Asp Leu Arg Leu Gly Asn Lys Leu Pro Asn Leu
 755 760 765
 Cys Thr Val Ile Asn Gly Leu Asp Met Lys Lys Arg Lys Tyr Gly Tyr
 770 775 780
 Tyr Tyr Gly Tyr Gly Lys Tyr Gly Arg Tyr Tyr Gly Tyr Gly Lys Lys
 785 790 795 800
 Tyr Gly Tyr Gly Tyr Gly Tyr Gly Gln Lys His Asn
 805 810

<210> 6486

<211> 101

<212> PRT

<213> B.fragilis

<400> 6486

Asp Tyr Val Ser Leu Cys Gly Glu Leu His Glu Glu Val His Thr Cys
 1 5 10 15
 Tyr Asn Gly Gly Tyr Arg Arg Gln Leu Ala Gly Asp Arg Met Leu Ile
 20 25 30
 Pro Lys Ala Ser Leu Ser Ser Asp Arg Ser Leu Gln Pro Asp Phe Val
 35 40 45
 Lys Leu Asp Ser Leu Val Ile Ala His Gln Pro Arg Arg Gly Gly Ile
 50 55 60
 Arg Ser Arg Ala Leu Tyr Thr Pro Pro Val Lys Pro Trp Glu Pro Gly
 65 70 75 80
 Val Pro Glu Val Arg Asn Arg Lys Asp Arg Pro Arg Val Lys Leu Val
 85 90 95

Thr Gly Ala Lys Ser
100

<210> 6487
<211> 588
<212> PRT
<213> B.fragilis

<400> 6487
Leu Arg Ala Phe Ile Ile Met Thr Asp Met Thr Asp Ile Lys Asn Glu
1 5 10 15
Glu Ala Gly Glu Lys Lys Ser Leu Asn Phe Ile Glu Gln Ala Val Glu
20 25 30
Asn Asp Leu Lys Ala Gly Lys Asn Gly Gly Lys Val Gln Thr Arg Phe
35 40 45
Pro Pro Glu Pro Asn Gly Tyr Leu His Ile Gly His Ala Lys Ala Ile
50 55 60
Cys Leu Asp Phe Gly Ile Ala Ala Ala His Gly Gly Val Cys Asn Leu
65 70 75 80
Arg Phe Asp Asp Thr Asn Pro Thr Lys Glu Asp Met Glu Tyr Val Glu
85 90 95
Ala Ile Gln Glu Asp Ile Arg Trp Leu Gly Phe Gln Trp Gly Asn Val
100 105 110
Tyr Tyr Ala Ser Asp Tyr Phe Gln Leu Trp Asp Phe Ala Val Thr
115 120 125
Leu Ile Lys Glu Gly Lys Ala Tyr Val Asp Glu Gln Thr Ser Glu Gln
130 135 140
Ile Ala Gln Gln Lys Gly Thr Pro Thr Gln Pro Gly Val Glu Ser Pro
145 150 155 160
Tyr Arg Asn Arg Pro Ile Glu Glu Ser Leu Ala Leu Phe Glu Lys Met
165 170 175
Asn Ser Asp Glu Ala Lys Glu Gly Ser Met Val Leu Arg Ala Lys Ile
180 185 190
Asp Met Ala Ser Pro Asn Met His Phe Arg Asp Pro Ile Met Tyr Arg
195 200 205
Ile Leu His Val Ala His His Arg Thr Gly Thr Gln Trp Lys Ala Tyr
210 215 220
Pro Met Tyr Asp Phe Ala His Gly Gln Ser Asp Tyr Phe Glu Gly Val
225 230 235 240
Thr His Ser Leu Cys Thr Leu Glu Phe Val Pro His Arg Pro Leu Tyr
245 250 255
Asp Leu Phe Ile Asp Trp Leu Lys Glu Gly Lys Asp Leu Asp Asp Asn
260 265 270
Arg Pro Arg Gln Thr Glu Phe Asn Lys Leu Asn Leu Asn Tyr Thr Leu
275 280 285
Met Ser Lys Arg Asn Leu Leu Ile Leu Val Lys Glu Gly Leu Val Asn
290 295 300
Asp Trp Asp Asp Pro Arg Met Pro Thr Leu Cys Gly Phe Arg Arg Arg
305 310 315 320
Gly Tyr Ser Pro Glu Ser Ile Arg Lys Phe Ile Asp Lys Ile Gly Tyr
325 330 335
Thr Thr Tyr Asp Ala Leu Asn Asp Phe Ala Leu Leu Glu Ser Ala Val
340 345 350
Arg Glu Asp Leu Asn Ala Arg Ala Thr Arg Val Ser Ala Val Leu Asn
355 360 365
Pro Val Lys Leu Ile Ile Thr Asn Tyr Pro Glu Gly Gln Val Glu Glu
370 375 380
Leu Glu Ala Ile Asn Asn Pro Glu Asp Pro Thr Ala Gly Ser His Thr
385 390 395 400

Ile Glu Phe Ser Arg Glu Leu Trp Met Glu Arg Asp Asp Phe Met Glu
 405 410 415
 Asp Ala Pro Lys Lys Tyr Phe Arg Met Thr Pro Gly Gln Glu Val Arg
 420 425 430
 Leu Lys Asn Ala Tyr Ile Val Lys Cys Thr Gly Cys Lys Lys Asp Glu
 435 440 445
 Asn Gly Thr Val Thr Glu Val Tyr Cys Glu Tyr Asp Pro Asn Thr Arg
 450 455 460
 Ser Gly Met Pro Asp Ala Asn Arg Lys Val Lys Gly Thr Leu His Trp
 465 470 475 480
 Leu Ser Cys Asn His Cys Leu Pro Ala Glu Val Arg Leu Tyr Asp Arg
 485 490 495
 Leu Trp Lys Val Glu Asn Pro Arg Asp Glu Met Ala Ala Ile Arg Glu
 500 505 510
 Ala Lys Gly Cys Asp Ala Leu Glu Ala Met Lys Glu Met Ile Asn Pro
 515 520 525
 Asp Ser Leu Thr Val Leu Pro His Cys Tyr Ile Glu Lys Tyr Val Ala
 530 535 540
 Asp Met Pro Ala Leu Ser Tyr Leu Gln Phe Gln Arg Ile Gly Tyr Phe
 545 550 555 560
 Asn Ile Asp Lys Asp Ser Thr Pro Gly His Leu Val Phe Asn Arg Thr
 565 570 575
 Val Gly Leu Lys Asp Thr Trp Gly Lys Ile Asn Lys
 580 585

<210> 6488

<211> 224

<212> PRT

<213> B.fragilis

<400> 6488

Ala Leu Gln Leu Phe Asp Glu Lys Ala Ile Tyr Val Thr Asn Leu Met
 1 5 10 15
 Phe Lys Lys Met Lys Lys Asp Phe Asn Leu Thr Lys Leu Phe Tyr Ser
 20 25 30
 Phe Ala Ile Ala Phe Ser Val Val Thr Leu Ser Ser Cys Asn Asn Asp
 35 40 45
 Asp Asn Ser Pro Leu Pro Pro Pro Ser Thr Asn Asp Val Ala Gly Thr
 50 55 60
 Tyr Asn Gly Lys Val Leu Ile Thr Gln Val Thr Pro Ala Thr Val Lys
 65 70 75 80
 Glu Asn Ala Gly Glu Ala Pro Gln Gly Gln Asp Val Asn Ala Thr Val
 85 90 95
 Lys Asn Asp Thr Val Phe Phe Asp Lys Leu Pro Val Thr Glu Leu Ile
 100 105 110
 Thr Ser Ile Val Gly Asp Lys Asp Lys Ala Glu Ala Ile Val Lys Ala
 115 120 125
 Ile Gly Asp Val Lys Tyr Lys Val Gly Tyr Lys Pro Ala Leu Asn Thr
 130 135 140
 Glu Lys Asp Ser Ile Tyr Leu Ala Phe Asp Pro Lys Pro Leu Thr Leu
 145 150 155 160
 Gln Leu Pro Ala Ala Val Glu Gly Gln Glu Gly Gln Thr Val Thr Val
 165 170 175
 Thr Ile Ser Ser Pro Asp Lys Gly Ser Phe Ala Tyr Lys Lys Asn Gln
 180 185 190
 Leu Lys Leu Lys Leu Ser Ala Asp Lys Val Glu Leu Ala Gly Val Ala
 195 200 205
 Val Pro Val Pro Gln Thr Leu Phe Asn Phe Asp Met Thr Lys Lys Lys
 210 215 220

<210> 6489
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 6489
 Asn Leu Glu Leu Ser Ile Met Ala Thr Thr Asn Phe Lys Gly Gln Pro
 1 5 10 15
 Val Lys Leu Ile Gly Glu Phe Ile Gln Val Gly Lys Val Ala Pro Asp
 20 25 30
 Phe Glu Leu Val Lys Ser Asp Leu Ser Ser Phe Ala Leu Lys Asp Leu
 35 40 45
 Lys Gly Lys Asn Ile Val Leu Asn Ile Phe Pro Ser Leu Asp Thr Gly
 50 55 60
 Val Cys Ala Thr Ser Val Arg Lys Phe Asn Lys Met Ala Ala Gly Met
 65 70 75 80
 Lys Asp Thr Val Val Leu Ala Ile Ser Lys Asp Leu Pro Phe Ala Gln
 85 90 95
 Gly Arg Phe Cys Thr Thr Glu Gly Ile Glu Asn Val Ile Pro Leu Ser
 100 105 110
 Asp Phe Arg Phe Ser Asp Phe Asp Glu Ser Tyr Gly Val Arg Met Ala
 115 120 125
 Asp Gly Pro Leu Ala Gly Leu Leu Ala Arg Ala Val Val Val Ile Gly
 130 135 140
 Lys Asp Gly Lys Val Ala Tyr Thr Glu Leu Val Pro Glu Ile Thr Gln
 145 150 155 160
 Glu Pro Asp Tyr Glu Lys Ala Leu Ala Ala Val Lys
 165 170

<210> 6490
 <211> 379
 <212> PRT
 <213> B.fragilis

<400> 6490
 Met Ile Asn Thr Pro Arg Lys Asn Gly Tyr Ser Phe Lys Tyr Gly Thr
 1 5 10 15
 Leu Phe Tyr Val Pro Phe Phe Ser Cys His Leu Gly Ile Ser Glu Thr
 20 25 30
 Phe Ile Arg Leu Tyr Ile Tyr Ala Ile Asp Phe Leu Leu Ile Ser Ser
 35 40 45
 Ile Phe Ser Asn Leu Ser Leu Lys Ile Phe Phe Ile Ile Asn Arg Val
 50 55 60
 Leu Glu His Thr Lys Lys Asn Lys Lys Met Glu Ile Glu Lys Phe Ile
 65 70 75 80
 Lys Ser Leu Ala Arg Lys Ala Lys Leu Gly Gly Arg Tyr Ser Thr Ala
 85 90 95
 Asn Thr Tyr Leu Tyr Thr Leu His Ser Phe Gln Lys Phe Ala Gly Lys
 100 105 110
 Ala Ser Leu Thr Phe Glu Glu Ile Thr Pro Glu Ser Ile Lys Glu Tyr
 115 120 125
 Glu Gln Tyr Leu Ile Leu Asn Gly Lys Arg Tyr Asn Thr Ile Ser Leu
 130 135 140
 Tyr Met Arg Met Leu Arg Ser Ile Cys Asn Gln Ala Ser Glu Gln Asn
 145 150 155 160
 Ile Ala Ser Leu Asn Thr Arg Glu Leu Phe Glu Asn Val Phe Ile Gly
 165 170 175
 Asn Glu Pro Thr Ala Lys Arg Ala Ile Ser Pro Val Leu Ile Ser Arg

	180		185		190											
Leu	Leu	Glu	Ala	Asp	Phe	Ser	Lys	Asn	Ser	Arg	Leu	Asp	Phe	Ala	Arg	
	195						200					205				
Asp	Leu	Phe	Leu	Leu	Ser	Phe	Tyr	Leu	Arg	Gly	Ile	Pro	Phe	Val	Asp	
	210						215					220				
Leu	Val	His	Leu	Arg	Lys	Thr	Asp	Val	Gln	Gly	Asn	Met	Leu	Val	Tyr	
225						230					235				240	
Phe	Arg	Gln	Lys	Thr	Gly	Gln	Gln	Leu	Thr	Val	Ile	Ile	Glu	Asn	Cys	
			245						250				255			
Ala	Lys	Val	Ile	Leu	Arg	Lys	Tyr	Ala	Ser	Leu	Cys	Lys	Glu	Ser	Val	
	260							265				270				
Tyr	Leu	Leu	Pro	Val	Ile	Ser	Ala	Ala	Gly	Glu	Glu	Gly	His	Lys	Gln	
	275						280				285					
Tyr	Arg	Ser	Ala	Leu	Arg	Val	Tyr	Asn	Lys	Arg	Leu	Asn	Gln	Ile	Ser	
	290					295				300						
Gly	Ile	Leu	Lys	Leu	Lys	Thr	Pro	Leu	Thr	Ser	Tyr	Val	Ala	Arg	His	
305					310				315				320			
Ser	Trp	Ala	Thr	Thr	Ala	Leu	Gln	Lys	Gly	Val	Pro	Val	Ser	Val	Ile	
			325					330				335				
Ser	Ala	Gly	Met	Gly	His	Ala	Ser	Glu	Lys	Val	Thr	Tyr	Ile	Tyr	Leu	
	340					345				350						
Ala	Ser	Phe	Asp	Asn	Lys	Thr	Leu	Ser	Asn	Ala	Asn	Lys	Lys	Val	Ile	
	355				360				365							
Ala	Ala	Val	Arg	Phe	Lys	Lys	Glu	Glu	Glu	Glu						
	370				375											

<210> 6491
 <211> 155
 <212> PRT
 <213> B.fragilis

Lys	Glu	Ser	Thr	Ile	Met	Ser	Lys	Glu	Val	Thr	Tyr	Ser	Val	Val	Ala
1			5						10					15	
Arg	Lys	Asn	Met	Leu	Lys	Lys	Asp	Asp	Pro	Ala	Lys	Tyr	Tyr	Ala	Gln
		20						25				30			
Ala	Gln	Ala	Ser	Gly	Asp	Val	Gly	Leu	Asp	Glu	Ile	Ser	Thr	Arg	Val
	35				40			45				50			
Glu	Lys	Ala	Cys	Thr	Val	His	Ser	Ala	Asp	Val	Val	Ala	Val	Leu	Lys
	50				55			60				65			
Ala	Leu	Glu	Asp	Glu	Met	Val	Asp	Gly	Leu	Ser	Arg	Gly	Glu	Ile	Val
	65				70			75				80			
Arg	Leu	Gly	Asn	Ile	Gly	Thr	Phe	Gln	Val	Gly	Leu	Arg	Ser	Arg	Gly
			85			90			95				100		
Ala	Glu	Lys	Ala	Glu	Asp	Phe	Lys	Ala	Ala	Asn	Ile	Ser	Lys	Ala	Arg
	100				105			110				115			
Val	Asn	Phe	Arg	Pro	Gly	Pro	Val	Leu	Ala	Asp	Ala	Met	Lys	Thr	Leu
	115				120			125				130			
Asn	Phe	Ser	Lys	Val	Ser	Thr	Arg	Ala	Ala	Gln	Lys	Gly	Asp	Gly	Gly
	130				135			140							
Gly	Asp	Gly	Asp	Ile	Val	Asp	Asp	Pro	Thr	Ala					
	145			150			155								

<210> 6492
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 6492

Lys His Thr Ala Phe Arg Ile Phe Phe Arg Thr Phe Thr Val Cys Asn
 1 5 10 15
 Asn Gln Ile Ile Lys Ala Met Asn Gln Arg Lys Glu Glu Asp Thr Thr
 20 25 30
 Glu Ala Asp Phe Ile Ile Arg Ser Tyr Thr Lys Ala Glu Leu Ala Gln
 35 40 45
 Leu Tyr Cys Pro Gly Leu Asp Pro Val Leu Ala Leu Gln Lys Leu Tyr
 50 55 60
 Arg Trp Met Arg Lys Asn Thr Ala Leu Thr Gln Ala Leu Ser Glu Val
 65 70 75 80
 Asn Tyr Asn Lys Tyr Arg His Ser Phe Leu Lys Arg Glu Val Arg Leu
 85 90 95
 Ile Val Tyr Tyr Leu Gly Glu Pro
 100

<210> 6493
 <211> 212
 <212> PRT
 <213> B.fragilis

<400> 6493
 Thr Ile Gly Ala Arg Thr Leu Phe Thr Met Asp Asn Asn Leu Lys Asn
 1 5 10 15
 Lys Ile Asp Met Lys Thr Leu Phe Asp Glu Met Glu His Ala Val Lys
 20 25 30
 Asn Trp Trp Leu Ser Leu Ile Leu Gly Ile Leu Tyr Ile Ile Val Ala
 35 40 45
 Leu Cys Leu Leu Phe Ala Pro Gly Ser Ser Tyr Ile Ala Leu Ser Val
 50 55 60
 Ile Phe Ser Ile Ser Met Leu Ile Ser Gly Ile Ile Glu Ile Ile Phe
 65 70 75 80
 Ser Ile Ser Asn Arg Arg Gly Ile Ser Ser Trp Gly Trp Tyr Leu Ala
 85 90 95
 Gly Gly Ile Ile Asp Leu Ile Leu Gly Ile Tyr Leu Val Ala Tyr Pro
 100 105 110
 Leu Leu Ser Met Glu Val Ile Pro Phe Ile Val Ala Phe Trp Met Met
 115 120 125
 Phe Arg Gly Phe Ser Ala Thr Gly Tyr Ser Met Asp Leu Lys Arg Tyr
 130 135 140
 Gly Thr Arg Glu Trp Gly Trp Tyr Met Gly Phe Gly Ile Leu Ala Ile
 145 150 155 160
 Ile Cys Ser Leu Ile Ile Leu Trp Gln Pro Ala Val Gly Ala Leu Tyr
 165 170 175
 Val Ile Tyr Met Leu Ala Phe Thr Phe Leu Ile Ile Gly Phe Phe Arg
 180 185 190
 Val Met Leu Ser Phe Glu Leu Lys Ser Leu His Lys Arg Ser Thr Val
 195 200 205
 Met Asn Gly Lys
 210

<210> 6494
 <211> 482
 <212> PRT
 <213> B.fragilis

<400> 6494
 Leu Leu Ile Lys Leu Gly Arg Lys Asn Ser Pro Ser Glu Arg Glu Arg
 1 5 10 15
 Glu Leu Gln Asn Leu Ile Ala Gln Tyr Glu Ala Val Lys Ala Lys Asn

			20					25					30				
Glu	Ser	Leu	Tyr	Leu	Asp	Gly	Asp	Gln	Leu	Ala	Asp	Ile	Ala	Asp	Leu		
		35					40					45					
Tyr	Ala	Ser	Glu	Arg	Lys	Phe	Lys	Glu	Ala	Gln	Glu	Val	Ile	Thr	Tyr		
	50					55					60						
Gly	Leu	Gly	Leu	His	Pro	Gly	His	Thr	Asp	Leu	Met	Val	Glu	Gln	Ala		
65					70					75				80			
Tyr	Leu	Phe	Leu	Asp	Leu	Asn	Gln	Pro	Gln	Lys	Ala	Lys	Glu	Val	Ala		
				85				90					95				
Glu	Leu	Ile	Thr	Asp	Thr	Tyr	Ser	Ser	Asn	Val	Lys	Leu	Leu	Leu	Ala		
			100					105					110				
Glu	Leu	Leu	Leu	Asn	Glu	Gly	Lys	Leu	Asp	Ala	Ala	Asp	Gln	Met	Leu		
		115				120						125					
Asp	Ser	Ile	Glu	Glu	Glu	Glu	Lys	Asn	Asp	Leu	Gly	Ile	Leu	Val	Asp		
	130					135					140						
Ile	Val	Tyr	Leu	Tyr	Thr	Asp	Leu	Gly	Tyr	Pro	Glu	Lys	Gly	Val	Gln		
145					150					155					160		
Trp	Leu	Lys	Arg	Gly	Ala	Glu	Met	Tyr	Lys	Asp	Asp	Glu	Asp	Phe	Leu		
			165					170						175			
Ala	Ala	Thr	Ala	Asp	Cys	Tyr	Gly	Ala	Ala	Gly	Ala	Glu	Tyr	Ile	Glu		
			180					185					190				
Gln	Ala	Ile	Val	Val	Phe	Asn	Lys	Leu	Ile	Asp	Lys	Asn	Pro	Tyr	Asn		
		195				200						205					
Pro	Ala	Tyr	Trp	Val	Gly	Leu	Ala	Lys	Cys	Gln	Phe	Ala	Thr	Lys	Asp		
	210				215						220						
Phe	Asp	Lys	Ala	Ile	Glu	Ser	Cys	Asp	Phe	Ala	Ile	Ala	Ala	Asp	Glu		
225					230				235						240		
Glu	Phe	Gly	Glu	Ala	His	Ile	Ile	Lys	Ala	His	Ser	Leu	Phe	His	Leu		
				245				250						255			
Glu	Asn	Ile	Glu	Gly	Ala	Ile	Val	Glu	Tyr	Arg	Lys	Ala	Leu	Lys	Tyr		
			260					265					270				
Lys	Thr	Leu	Ser	Pro	Glu	Phe	Thr	Tyr	Met	Phe	Ile	Gly	Leu	Ala	Tyr		
		275					280					285					
Thr	Gln	Gln	Glu	Asn	Trp	Ala	Glu	Ala	Asn	Glu	Ser	Tyr	Ser	Met	Ala		
	290					295					300						
Leu	Arg	Ala	Ile	Glu	Glu	Asn	Gly	Asn	Gly	Ser	Ser	Pro	Leu	Leu	Ser		
305					310					315					320		
Asp	Ile	Tyr	Ser	Asn	Lys	Ala	Leu	Cys	Ala	Ser	Arg	Gln	Gly	Asp	Ser		
				325				330						335			
Glu	Glu	Ala	His	Arg	Leu	Cys	Arg	Leu	Ala	Lys	Glu	Leu	Ala	Pro	Gln		
			340					345					350				
Asp	Ala	Glu	Pro	Tyr	Leu	Leu	Glu	Gly	Arg	Ile	Tyr	Met	Glu	Glu	Asp		
		355					360					365					
Asn	Phe	Asp	Leu	Ala	Arg	Ala	Glu	Trp	Ala	Leu	Ala	Leu	Arg	Tyr	Ala		
	370																

<210> 6495
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 6495

His	Arg	Cys	Lys	Leu	Lys	Met	Ser	Leu	Met	Lys	Arg	Ser	Pro	Thr	Gly
1			5						10					15	
Lys	Ser	Trp	Gly	Val	Lys	Ile	Ser	Arg	Ser	Gly	Val	Phe	Arg	Leu	Glu
			20					25					30		
Asp	Ile	Thr	His	Tyr	Tyr	Ser	Glu	Glu	Glu	Leu	Gly	Glu	Ala	Tyr	Glu
		35					40					45			
Asn	Ala	Gly	Glu	Lys	Ile	Met	Glu	Leu	Ile	Gln	Lys	Thr	Pro	Gly	Ile
	50					55					60				
Val	Ala	Phe	Ile	Pro	Gln	Lys	Phe	Val	Val	Arg	Pro	Asp	Ala	Val	His
65					70					75				80	
Phe	Ile	Lys	Asp	Asn	Thr	Ile	Ser	Val	Lys	Glu	Val	Phe	Ala	Gly	Ala
			85						90					95	
Glu	Trp	Phe	Pro	Thr	Ala	Thr	Pro	Ala	Pro	Leu	Phe	Gly	Phe	Leu	Pro
			100					105					110		
Leu	Ile	Thr	Gly	Thr	Leu	Trp	Val	Ser	Leu	Phe	Ala	Ile	Leu	Ile	Ala
		115					120						125		
Leu	Pro	Phe	Gly	Leu	Ser	Val	Ser	Ile	Tyr	Met	Ser	Glu	Val	Ala	Asp
	130					135					140				
Ser	Lys	Val	Arg	Ser	Trp	Leu	Lys	Pro	Val	Ile	Glu	Leu	Leu	Ser	Gly
145					150					155					160
Ile	Pro	Ser	Val	Val	Tyr	Gly	Phe	Phe	Gly	Leu	Ile	Val	Ile	Val	Pro
				165					170					175	
Leu	Ile	Gln	Lys	Val	Phe	Asp	Leu	Pro	Val	Gly	Glu	Ser	Gly	Leu	Ala
			180					185						190	
Gly	Ser	Ile	Val	Leu	Ala	Ile	Met	Ala	Leu	Pro	Thr	Ile	Ile	Thr	Val
		195					200						205		
Thr	Glu	Asp	Ala	Met	Arg	Asn	Cys	Pro	Arg	Ala	Met	Arg	Glu	Ala	Ser
	210					215						220			
Leu	Ala	Leu	Gly	Ala	Ser	Gln	Trp	Gln	Thr	Ile	Tyr	Lys	Val	Val	Ile
225					230					235					240
Arg	Leu	His	His	Gly	Ala	Gly	Arg	Ile	Arg	Arg	Leu	Asp	Leu		
				245					250						

<210> 6496
 <211> 424
 <212> PRT
 <213> B.fragilis

<400> 6496

Asn	His	Arg	Asp	Ala	Phe	Leu	Ile	Met	Leu	Leu	Ser	Val	Ala	Val	Ala
1			5						10					15	
Ile	Thr	Val	Leu	Leu	Ser	Val	Ser	Val	Ile	Ala	Ala	Val	Phe	Ser	Val
			20					25					30		
Ser	Ile	Val	Ile	Ala	Val	Phe	Pro	Leu	Phe	His	Val	Gln	Ala	Val	Asp
		35					40					45			
Tyr	Gly	Thr	Gln	Val	Gly	Glu	Leu	Val	Ala	Gln	Ala	Glu	Ile	Phe	Glu
	50					55					60				
Gln	Gly	Ile	Val	Gly	Phe	Val	Gly	Ile	Val	Gly	Ala	Ala	Asp	Ile	Asn
65					70					75				80	
Arg	Glu	Val	Gly	His	Pro	Cys	Asp	Asp	Leu	Cys	Val	Gly	His	His	Ser
				85					90					95	
Asp	Gly	Ser	Gly	Val	Glu	His	Asp	Ile	Val	Glu	Val	Leu	Phe	Glu	Asp

	100		105		110										
Ile	Asp	Gly	Phe	His	Gln	Cys	Leu	Ala	Cys	Gln	Gln	Phe	Gly	Arg	Val
	115						120					125			
Gly	Arg	Tyr	Gly	Ser	Ala	Gly	Glu	Asp	Ala	Gln	Gly	Ala	Gly	Tyr	Pro
	130					135					140				
Gly	Gly	Leu	His	His	Arg	His	Gln	Val	Gly	Gly	Leu	Arg	Ala	Gly	Gln
145					150					155					160
Glu	Leu	Gly	Asp	Ser	Phe	Phe	Phe	Leu	Arg	Glu	Val	Glu	Asp	Leu	Val
			165						170					175	
Glu	Ser	Arg	Leu	Ala	Asp	Val	Glu	Pro	Tyr	Asp	Asp	Tyr	Ser	Phe	Ala
	180							185					190		
Gln	Gln	Arg	Glu	Ala	Asp	Gly	Glu	Val	Gly	Gly	Tyr	Lys	Cys	Phe	Ser
	195						200					205			
Phe	Ala	Ala	Asp	Gly	Arg	Gly	Asp	Gln	Asp	Asp	Phe	Ile	Leu	Phe	Ala
	210					215					220				
Gln	His	Lys	Leu	Gln	Val	Gly	Ala	Asp	Ala	Pro	Glu	Gly	Phe	Arg	His
225					230					235					240
Gln	Ala	Val	Phe	Val	Phe	Ala	Asp	Ser	Asp	Ala	Ser	Arg	Phe	Pro	Val
			245						250					255	
Thr	Leu	Phe	Gly	Gln	Gly	Asp	Val	Ser	Asp	Asp	Gly	Gly	Gly	Gly	Gln
	260							265					270		
Leu	Phe	His	Ile	Gly	Pro	Ser	Phe	Tyr	Pro	Glu	Leu	Glu	Gln	Pro	His
	275						280					285			
Asp	Val	Asp	Asp	Gly	Tyr	Gly	Asp	Ala	His	Pro	His	Asp	Glu	Gly	Tyr
	290					295					300				
His	Ile	Asp	Arg	Phe	Gly	Leu	Gly	Arg	Asn	Gly	Thr	Val	Val	Arg	His
305					310					315					320
Gly	Leu	Val	Tyr	Asp	Leu	Gly	Val	Val	Gly	Ser	Gly	Gly	Gln	Cys	Asp
			325						330					335	
Gly	Val	Phe	Phe	Pro	Phe	Leu	Gln	Gln	His	Gln	Val	Glu	Ser	Gly	Phe
	340							345					350		
Asp	Leu	Leu	Leu	Pro	Gly	Asp	Ala	Asp	Glu	Leu	Ala	Phe	Leu	Arg	Gly
	355						360					365			
Arg	Ile	Ala	Asp	Ala	Ala	Val	Glu	Leu	Val	Gly	Leu	Thr	Val	Glu	Val
	370					375					380				
Gly	Leu	Gly	Asp	Gln	Gln	Ser	Phe	Leu	Asn	Ala	Val	Asp	Gly	Gly	Gln
385					390					395					400
Asp	Val	Phe	Ala	His	Gly	Thr	Asp	Ala	Ala	Ile	Gln	Val	His	Asp	His
			405						410					415	
Arg	Val	Ala	Phe	Arg	Gly	Val	Ala								
	420														

<210> 6497

<211> 62

<212> PRT

<213> B.fragilis

<400> 6497

Glu	Met	Arg	Trp	Lys	Glu	Lys	Lys	Lys	Leu	Ile	Lys	Ile	Lys	Lys	Met
1				5					10					15	
Asn	Lys	Arg	Asn	Tyr	Thr	Thr	Glu	Glu	His	Arg	Val	Ser	Gln	Arg	Ile
			20					25					30		
Phe	Phe	Pro	His	His	Thr	Lys	Asp	Glu	Asn	Pro	Val	Lys	Leu	Cys	Val
		35					40					45			
Leu	Cys	Gly	Glu	Pro	Pro	His	Ser	Asn	Ile	Leu	Lys	Leu	Arg		
	50					55					60				

<210> 6498

<211> 153

<212> PRT

<213> B.fragilis

<400> 6498

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Arg His Pro Cys His Ala Arg Lys His Pro Asp His His Pro Gln Arg
1      5      10      15
Ser Glu Arg Ile Ala Asp His Gln Gly Arg Pro Arg Pro Ser Gly Gln
20     25     30
Gln Val Gln Pro Pro His Gln Gln Cys Ala Arg Ala Gly Thr Pro Val
35     40     45
Arg Gln His Leu Pro Ala Ala Gly Asp Gln Ser Arg Thr Leu Pro Asp
50     55     60
Ala Val Ala Glu Thr Gly Arg Lys Leu His Arg Thr Gly Arg His Cys
65     70     75     80
Gln Gln Arg Gln Asp Arg Arg Arg Gly His Gly Gly Gln Arg Ser Arg
85     90     95
Phe Ser Gln Asp Gln Asn Asp Leu Tyr Asp Ser Pro Arg His Gly Asp
100    105    110
Gly His Pro Arg Ser His His Leu Arg His Gly Ala Ala Pro Val Pro
115    120    125
Asp Arg Arg Thr Gly Arg Cys Gly Lys Ala Asp Leu Arg Pro His His
130    135    140
Arg Arg His Pro Pro Gly Arg Arg Gly
145    150

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<210> 6499

<211> 262

<212> PRT

<213> B.fragilis

<400> 6499

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Met Thr Lys Arg Leu Leu Phe Phe Thr Leu Thr Cys Ile Leu Leu Ala
1      5      10      15
Ser Cys Gln Ser Tyr Lys Lys Val Pro Tyr Leu Gln Asp Pro Gly Glu
20     25     30
Ala Gln Arg Ala Val Ala Glu Ala Lys Leu Tyr Asp Ala Arg Ile Leu
35     40     45
Pro Lys Asp Leu Leu Thr Ile Val Val Ser Cys Ser Asp Pro Glu Leu
50     55     60
Ala Glu Pro Phe Asn Leu Thr Val Ser Thr Pro Val Ser Asn Thr Gln
65     70     75     80
Lys Ser Leu Thr Ser Gln Pro Ala Leu Gln Gln Tyr Leu Val Asp Asn
85     90     95
Arg Gly Asn Ile Asp Phe Pro Val Leu Gly Thr Leu His Ile Gly Gly
100    105    110
Leu Thr Lys Gly Glu Ala Glu Ser Leu Ile Arg Glu Lys Leu Lys Gly
115    120    125
Tyr Ile Lys Glu Asn Thr Ile Val Thr Val Arg Met Ala Asn Tyr Lys
130    135    140
Ile Ser Val Ile Gly Glu Val Asn Arg Pro Gly Thr Phe Thr Ile Ser
145    150    155    160
Asn Glu Lys Val Asn Leu Phe Glu Ala Leu Ala Met Ala Gly Asp Met
165    170    175
Thr Val Tyr Gly Leu Arg Asp Asn Val Arg Leu Ile Arg Glu Asp Ala
180    185    190
Asp Gly His Gln His Ile Ile Thr Leu Asn Met Asn Arg Ala Asp Ile
195    200    205
Ile Gln Ser Pro Tyr Tyr Tyr Leu Gln Gln Asn Asp Ile Leu Tyr Val
210    215    220

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Thr Pro Asn Lys Thr Lys Ala Lys Thr Ala Asp Ile Ser Ala Ser Thr
 225 230 235 240
 Thr Ile Trp Phe Ser Val Val Gly Thr Leu Val Ser Leu Ala Ser Leu
 245 250 255
 Ile Ile Thr Ile Ala Lys
 260

<210> 6500

<211> 149

<212> PRT

<213> B.fragilis

<400> 6500

Lys Ser Lys Gly Met Lys Lys Val Phe Glu Arg Ile Ile Glu Gly Ile
 1 5 10 15
 Leu Thr Cys Ser Gly Phe Val Thr Ser Ile Thr Ile Leu Leu Ile Val
 20 25 30
 Leu Phe Leu Phe Thr Glu Ala Phe Gly Leu Phe Ser Ser Lys Val Ile
 35 40 45
 Glu Glu Gly Tyr Val Leu Ala Leu Asn Lys Asp Asn Lys Val Ser Glu
 50 55 60
 Leu Thr Pro Met Gln Ile Lys Asp Val Phe Asp Glu Glu Ile Thr Asn
 65 70 75 80
 Trp Lys Glu Leu Gly Gly Glu Asp Leu Pro Ile Arg Gly Val Pro Ser
 85 90 95
 Gly Arg His His Ala Leu Leu Leu Gly Arg Arg Thr Gly Arg Ser Leu
 100 105 110
 Arg Glu Cys Arg Gly Lys Asp Tyr Gly Ala Asp Ser Glu Asn Thr Arg
 115 120 125
 Tyr Arg Cys Phe Tyr Ser Ser Glu Val Cys Gly Thr Ala Gly Cys Gly
 130 135 140
 Thr Phe His Lys Gly
 145

<210> 6501

<211> 470

<212> PRT

<213> B.fragilis

<400> 6501

Lys Tyr Ser Met Lys Gln Val Leu Arg Phe Asn Lys Val Ile Lys Arg
 1 5 10 15
 Ile Val Phe Thr Gly Asp Leu Ile Leu Leu Asn Gly Thr Phe Leu Ser
 20 25 30
 Leu Tyr Thr Leu Leu Gly Ser Lys Phe Phe Ala Asp Pro Phe Ile His
 35 40 45
 Ser Leu Pro Gln Val Leu Val Leu Leu Asn Leu Cys Tyr Leu Val Ser
 50 55 60
 Asn Met Ser Ser Gly Ile Ile Leu His Arg Arg Val Val Arg Pro Glu
 65 70 75 80
 Gln Ile Val Trp Arg Ala Leu Arg Asn Ser Ala Gly His Ala Leu Phe
 85 90 95
 Phe Ser Cys Ala Leu Thr Phe Gly Asn Phe Gly Ile Leu Ser Ala Arg
 100 105 110
 Phe Phe Leu Leu Phe Tyr Ile Ala Phe Thr Leu Leu Leu Val Cys Tyr
 115 120 125
 Arg Leu Leu Phe Arg Lys Ile Leu Lys Ser Tyr Arg Lys His Gly Gly
 130 135 140
 Asn Ser Arg Ser Ile Ile Leu Val Gly Ser Asn Ser Asn Ile Ile Glu

145 150 155 160
 Leu Tyr His Gln Met Thr Asp Asp Val Thr Ser Gly Phe Arg Val Ile
 165 170 175
 Gly Tyr Phe Asp Asp Gln Pro Gly Ser Arg Phe Pro Glu Lys Val Asn
 180 185 190
 Tyr Leu Gly Lys Pro Gly Lys Ile Val Asp Arg Leu Lys Gln Gly Gly
 195 200 205
 Val Glu Gln Val Tyr Cys Cys Leu Pro Ser Ala Arg Ser Glu Glu Ile
 210 215 220
 Leu Pro Ile Ile Asp Tyr Cys Glu Asn His Leu Ile Arg Phe Phe Ser
 225 230 235 240
 Val Pro Asn Val Arg Ser Tyr Leu Lys Arg Arg Met Tyr Phe Glu Leu
 245 250 255
 Leu Gly Asn Val Pro Val Leu Cys Ile Arg Gln Glu Pro Leu Ser Phe
 260 265 270
 Ala Glu Asn Arg Phe Arg Lys Arg Val Phe Asp Ile Ala Phe Ser Leu
 275 280 285
 Leu Phe Leu Cys Thr Leu Phe Pro Ile Ile Tyr Val Ile Val Gly Leu
 290 295 300
 Thr Ile Lys Ile Thr Ser Pro Gly Pro Ile Phe Phe Lys Gln Lys Arg
 305 310 315 320
 Ser Gly Glu Asp Gly Arg Glu Phe Trp Cys Tyr Lys Phe Arg Ser Met
 325 330 335
 Lys Val Asn Thr Gln Ser Asp Thr Leu Gln Ala Thr Leu His Asp Pro
 340 345 350
 Arg Lys Thr Arg Phe Gly Asn Phe Leu Arg Lys Ser Ser Ile Asp Glu
 355 360 365
 Leu Pro Gln Phe Ile Asn Val Leu Met Gly Asp Met Ser Val Val Gly
 370 375 380
 Pro Arg Pro His Met Leu Lys His Thr Glu Gln Tyr Ser Gln Leu Ile
 385 390 395 400
 Asn Lys Tyr Met Val Arg His Phe Val Lys Pro Gly Val Thr Gly Trp
 405 410 415
 Ala Gln Val Thr Gly Phe Arg Gly Glu Thr His Glu Leu Trp Gln Met
 420 425 430
 Glu Gly Arg Val Gln Arg Asp Ile Trp Tyr Ile Glu His Trp Thr Phe
 435 440 445
 Met Leu Asp Leu Tyr Ile Ile Tyr Lys Thr Val Arg Asn Ala Leu Glu
 450 455 460
 Gly Glu Lys Glu Ala Tyr
 465 470

<210> 6502

<211> 198

<212> PRT

<213> B.fragilis

<400> 6502

Ile Met Val Ile Ala Tyr Leu Arg Val Ser Thr Glu Lys Gln Phe Leu
 1 5 10 15
 Ala Asn Gln Lys Glu Glu Ile Met Arg Phe Ala Glu Lys Asn Gly Leu
 20 25 30
 Ser Ile Asp Lys Trp Tyr Thr Glu Thr Val Ser Gly Ser Val Ser Thr
 35 40 45
 Lys Asp Arg Lys Leu Ser Glu Leu Leu Lys Arg Met His Pro Gly Asp
 50 55 60
 Thr Leu Ile Val Thr Glu Ile Ser Arg Leu Ser Arg Thr Leu Leu Glu
 65 70 75 80
 Ile Met Thr Ile Leu Asn Phe Cys Ile Lys Lys Gln Val Val Leu Tyr

				85					90				95				
Ser	Thr	Lys	Glu	Gly	Tyr	Val	Phe	Gln	Asp	Asp	Ile	Asn	Ser	Lys	Val		
			100					105					110				
Leu	Gly	Phe	Ala	Phe	Gly	Leu	Met	Ala	Glu	Ile	Glu	Arg	Asn	Leu	Ile		
		115					120					125					
Ser	Met	Arg	Thr	Lys	Glu	Ala	Leu	Ala	Arg	Arg	Lys	Gln	Glu	Gly	Met		
	130						135					140					
Thr	Leu	Gly	Arg	Lys	Lys	Gly	Asp	Thr	Pro	Lys	Ile	Lys	Leu	Leu	Arg		
145					150						155				160		
Ala	Asn	Lys	Arg	Val	Leu	Thr	Lys	Glu	Leu	Asp	Lys	Gly	Thr	Thr	Tyr		
				165					170						175		
Ser	Glu	Leu	Ala	Glu	Lys	Met	Gly	Val	Ser	Arg	Thr	Thr	Leu	Phe	Arg		
			180					185						190			
Phe	Met	Lys	Thr	Met	Tyr												
			195														

<210> 6503
 <211> 216
 <212> PRT
 <213> B.fragilis

Ile	Lys	Gln	Met	Glu	Ser	Val	Ala	Phe	Ile	Gln	Trp	Cys	Leu	Asp	His		
1				5					10					15			
Leu	Asn	Tyr	Trp	Thr	Ile	Thr	Leu	Leu	Met	Thr	Ile	Glu	Ser	Ser	Phe		
			20					25					30				
Ile	Pro	Phe	Pro	Ser	Glu	Val	Val	Val	Pro	Pro	Ala	Ala	Tyr	Lys	Ala		
		35					40					45					
Ala	Val	Asn	Glu	Glu	Leu	Asn	Ile	Tyr	Leu	Val	Val	Leu	Phe	Ala	Thr		
	50					55					60						
Leu	Gly	Ala	Asn	Leu	Gly	Ala	Ile	Ile	Asn	Tyr	Tyr	Leu	Ala	Arg	Trp		
65					70					75					80		
Leu	Gly	Arg	Pro	Ile	Val	Tyr	Lys	Phe	Ala	Asn	Ser	Arg	Phe	Gly	His		
				85					90					95			
Met	Cys	Leu	Ile	Asp	Glu	Ala	Lys	Val	Gln	His	Ala	Glu	Glu	Tyr	Phe		
		100						105					110				
Asp	Lys	His	Gly	Ala	Leu	Ser	Thr	Phe	Ile	Gly	Arg	Leu	Ile	Pro	Ala		
		115					120					125					
Val	Arg	Gln	Leu	Ile	Ser	Ile	Pro	Ala	Gly	Leu	Ala	Arg	Met	Lys	Leu		
	130					135						140					
His	Thr	Phe	Leu	Ile	Tyr	Thr	Thr	Leu	Gly	Ala	Gly	Leu	Trp	Asn	Thr		
145					150						155				160		
Ile	Leu	Ala	Ala	Ile	Gly	Tyr	Tyr	Leu	Ser	Thr	Val	Pro	Gly	Ile	Glu		
				165						170				175			
Ser	Glu	Glu	Gln	Leu	Leu	Ala	Lys	Val	Thr	Glu	Tyr	Ser	His	Glu	Leu		
			180					185					190				
Gly	Tyr	Cys	Phe	Ile	Val	Ile	Gly	Val	Phe	Ile	Val	Gly	Phe	Leu	Val		
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Tyr	Lys	Gly	Met	Lys	Lys	Lys	Lys										
			210				215										

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 <212> PRT
 <213> B.fragilis

Cys	Phe	Ser	Val	Gly	Gly	Met	Ser	Lys	Asn	Glu	Gly	Gly	Ser	Met	Arg		
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Lys Ile Asp Leu Ile Val Ile His Cys Ser Ala Thr Arg Glu Asp Arg
 20 25 30
 Cys Phe Thr Glu Phe Asp Leu Asp Val Cys His Arg Arg Arg Gly Phe
 35 40 45
 Asn Gly Pro Gly Tyr His Phe Tyr Ile Arg Lys Asp Gly Arg Ile Val
 50 55 60
 Ser Thr Arg Pro Val Glu Lys Ile Gly Ala His Ala Lys Gly His Asn
 65 70 75 80
 Ala Thr Ser Ile Gly Ile Cys Tyr Glu Gly Leu Asp Ala Arg Gly
 85 90 95
 Arg Pro Lys Asp Thr Arg Thr Glu Trp Gln Val His Ser Met Arg Val
 100 105 110
 Leu Val Lys Thr Leu Leu Lys Gln Tyr Pro Gly Ser Arg Val Cys Gly
 115 120 125
 His Arg Asp Leu Ser Pro Asp Leu Asn Ala Asn Gly Glu Ile Glu Pro
 130 135 140
 Glu Glu Trp Ile Lys Gln Cys Pro Cys Phe Asn Val Ile Glu Asp Lys
 145 150 155 160
 Lys Leu His

<210> 6505

<211> 285

<212> PRT

<213> B.fragilis

<400> 6505

Asn Ser Gly Val Leu Cys Gly Glu Ser Asn Ser Lys Leu Asn His Met
 1 5 10 15
 Lys Ile Arg Thr Ile Leu Phe Gly Arg Leu Ser Leu Ala Ala Leu His
 20 25 30
 Ala Asn Ala Gln Arg Ile Lys Gly Ser Asp Thr Val Leu Pro Val Ala
 35 40 45
 Gln Gln Thr Ala Glu Arg Phe Met Asn Arg Glu Pro Asp Ala Arg Val
 50 55 60
 Thr Val Thr Gly Gly Gly Thr Gly Val Gly Ile Ser Ala Leu Met Asp
 65 70 75 80
 Asn Thr Thr Asp Ile Ala Met Ala Ser Arg Pro Ile Lys Phe Ser Glu
 85 90 95
 Lys Met Lys Ala Lys Ala Ala Lys Arg Asp Ile Asp Glu Val Ile Val
 100 105 110
 Ala Tyr Asp Ala Leu Ala Val Val Val His Pro Ser Asp Pro Val Lys
 115 120 125
 Lys Leu Thr Arg Arg Gln Leu Glu Asp Ile Phe Arg Gly Lys Ile Thr
 130 135 140
 Asn Trp Lys Gln Val Gly Gly Asp Asp Arg Lys Ile Val Val Tyr Ser
 145 150 155 160
 Arg Glu Thr Ser Ser Gly Thr Tyr Glu Phe Lys Glu Ser Val Leu
 165 170 175
 Lys Asn Lys Asn Tyr Met Ser Ser Ser Leu Ser Met Pro Ala Thr Gly
 180 185 190
 Ala Ile Ile Gln Ser Val Ser Gln Thr Lys Gly Ala Ile Gly Tyr Val
 195 200 205
 Gly Leu Ala Tyr Val Ser Pro Arg Ile Lys Thr Leu Ser Ile Ser Tyr
 210 215 220
 Asp Gly Glu His Tyr Ala Thr Pro Thr Val Glu Asn Ala Thr Asn Lys
 225 230 235 240
 Thr Tyr Pro Ile Val Arg Pro Leu Tyr Tyr Tyr Tyr Asp Ala Lys Asn
 245 250 255

Lys Thr Gln Ile Ala Pro Leu Leu Glu Phe Ile Leu Ser Pro Glu Gly
 260 265 270
 Gln Asp Ile Ile Lys Lys Ser Gly Tyr Ile Pro Val Lys
 275 280 285

<210> 6506
 <211> 147
 <212> PRT
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<400> 6506
 Leu Met Met Phe Leu Ile Phe Lys Tyr Tyr Thr Ile Met Lys Thr Met
 1 5 10 15
 Ile Ile Ser Ile Ile Ala Val Leu Ala Ser Val Ala Val Ser Gly Gln
 20 25 30
 Ser Leu Thr Leu Thr Val Lys Asp Val Glu His Val Glu Gly Thr Leu
 35 40 45
 Tyr Val Ala Ile Tyr Ser Ser Lys Glu Asn Phe Met Lys Lys Pro Leu
 50 55 60
 Phe Gly Phe Arg Val Ala Val Lys Asp Arg Thr Met Thr Ile Pro Cys
 65 70 75 80
 Lys Gly Ile Pro Ala Gly Thr Tyr Ala Ile Ser Leu Phe Gln Asp Glu
 85 90 95
 Asn Gly Asn Gly Lys Leu Asp Thr Gly Ser Phe Gly Arg Pro Leu Glu
 100 105 110
 Lys Phe Gly Phe Ser Asn Asp Ala Glu Gly Ile Met Gly Ala Pro Ser
 115 120 125
 Tyr Glu Lys Cys Cys Phe Glu Phe Lys Arg Asp Thr Thr Val Val Ile
 130 135 140
 His Leu Lys
 145

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 20 25 30
 Ser Phe Met Phe Ala Asp Glu Asn Val Ser Lys Gln Ile Thr Met Lys
 35 40 45
 Gly Phe Tyr Val Pro Ala Ala Leu Ser Leu Met Leu Leu Ser Leu Pro
 50 55 60
 Ile Ala Ala Gln Ser Val Ala Thr Asp Thr Ile Leu Leu Ala Thr Phe
 65 70 75 80
 Asn Asp Ser Ile Ser Leu Asp Glu Val Val Ile Lys Ala His Lys Thr
 85 90 95
 Pro Arg Ala Asn Ser Arg Trp Ser Asp Leu Gln Pro Val Asp Leu Val
 100 105 110
 Thr Val Gly Gly Ser Asn Gly Asp Leu Tyr Arg Ala Leu Gln Thr Leu
 115 120 125
 Pro Gly Ala Gln Leu Gln Gly Glu Ser Gly Arg Leu Leu Val Arg Gly
 130 135 140
 Gly Asn Ser Asn Glu Thr Gln Thr Tyr Ile Asp Gly Met His Val Leu
 145 150 155 160
 Asn Pro Tyr Thr Thr Thr Gly Thr Asp Thr Pro Ala Arg Gly Arg Tyr

				165				170					175				
Ser	Thr	Phe	Met	Phe	Ser	Gly	Val	Asn	Leu	Ala	Ser	Gly	Gly	Gln	Ser		
			180					185					190				
Gln	Glu	Tyr	Gly	Glu	Ala	Leu	Ser	Ala	Val	Leu	Pro	Leu	Glu	Thr	Lys		
		195					200					205					
Asp	Tyr	Ser	Thr	Val	Asn	Lys	Phe	Gly	Met	Asn	Val	Ser	Thr	Val	Gly		
	210					215					220						
Met	Gly	Gly	Gly	Gly	Thr	Arg	Ala	Phe	Asn	Arg	Ser	Ser	Leu	Ser	Leu		
225					230					235					240		
Asn	Leu	Asp	Tyr	Gln	Asn	Leu	Ala	Pro	Tyr	Asp	Arg	Val	Tyr	Pro	Ser		
			245						250					255			
Arg	Thr	Asp	Phe	Lys	Arg	Pro	Tyr	Arg	Met	Leu	Ser	Gly	Ala	Thr	Gln		
		260						265					270				
Phe	Arg	Tyr	Thr	Pro	Asn	Glu	Lys	Ile	Leu	Phe	Lys	Phe	Tyr	Ala	Gly		
	275						280					285					
Tyr	Asp	Arg	Thr	Asp	Phe	Ser	Asn	Tyr	Thr	Asp	Ile	Asp	Arg	His	Leu		
	290					295					300						
Phe	Gly	Leu	Gly	Glu	Asn	Asn	Ile	Tyr	Leu	Asn	Thr	Thr	Phe	Arg	Lys		
305					310					315					320		
Arg	Thr	Ala	Ser	Asp	Trp	Asn	Trp	Phe	Ile	Gly	Thr	Ala	Tyr	Ser	Phe		
			325					330					335				
Tyr	Asp	Arg	Lys	Val	Lys	Gly	Ala	Val	Lys	Asp	Arg	Asp	Val	Trp	Asn		
		340						345					350				
Glu	Arg	Gln	Glu	Glu	Phe	His	Leu	Lys	Ala	Lys	Phe	Ser	Lys	Leu	Phe		
	355						360					365					
Thr	Ser	Arg	Leu	Arg	Leu	Asp	Met	Gly	Val	Glu	Thr	Phe	Val	Arg	Ser		
	370					375					380						
Tyr	Arg	Asn	Asp	Tyr	Gln	Leu	Glu	Thr	Leu	Arg	Asp	Thr	His	Gln	Met		
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Tyr	Pro	Thr	Ile	Tyr	Ala	Gly	Phe	Leu	Ser	Ser	Ala	Phe	Tyr	Leu	Ser		
			405					410					415				
Glu	Asn	Leu	Lys	Thr	Glu	Ile	Ser	Leu	Arg	Pro	Glu	Tyr	Thr	Ser	Leu		
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Asn	Arg	Thr	Met	Asn	Trp	Ser	Pro	Arg	Ala	Ala	Val	Ser	Tyr	Thr	Trp		
	435						440					445					
Asn	His	Leu	Leu	Val	Ser	Val	Val	Ala	Gly	Gln	Tyr	Thr	Gln	Leu	Pro		
	450					455					460						
Glu	Asn	Asp	Tyr	Leu	Ile	Arg	Asn	Ile	Ser	Leu	Pro	Ser	Asn	Val	Cys		
465					470					475					480		
Arg	Gln	Val	Leu	Phe	Ser	Leu	Gln	Tyr	Glu	Gln	Gly	Gly	Arg	Phe	Tyr		
			485					490					495				
Lys	Ala	Glu	Phe	Tyr	Tyr	Lys	Asn	Tyr	Lys	Lys	Leu	Glu	Leu	Ser	Val		
		500						505					510				
Pro	Asp	Gly	Ile	Thr	Pro	Asp	Gly	Tyr	Gly	Tyr	Ser	Lys	Gly	Ile	Asp		
	515						520					525					
Leu	Tyr	Phe	Cys	Asp	Asn	Val	Leu	Trp	Lys	Asn	Phe	Glu	Tyr	Arg	Leu		
	530					535					540						
Ser	Tyr	Ser	Tyr	Asn	Leu	Ser	Lys	Arg	Lys	Tyr	Arg	Glu	Tyr	Thr	Glu		
545					550					555					560		
Leu	Thr	Val	Pro	Gln	Tyr	Ala	Thr	Arg	His	His	Ala	Ser	Leu	Val	Leu		
			565					570					575				
Lys	Tyr	Ser	Val	Pro	Arg	Leu	Arg	Thr	Ile	Phe	Ser	Val	Thr	Asp	Gly		
		580						585					590				
Val	Ala	Ser	Gly	Arg	Pro	Tyr	His	Asn	Pro	Glu	Leu	Ser	Gly	Leu	Met		
	595						600					605					
Asn	Asp	Glu	Val	Lys	Ser	Tyr	His	Ser	Leu	Asp	Leu	Gly	Ile	Thr	Val		
	610					615					620						
Leu	Ala	Gly	Lys	Lys	Val	Ile	Val	His	Ala	Ser	Ala	Thr	Asn	Leu	Leu		
625					630					635					640		

165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620
 625 630 635 640

Gly Arg Lys Asn Glu Tyr Gly Arg Ile Asp Gly Glu Ala Val Arg Thr
 645 650 655
 Ser Ser Asp His Phe Phe Tyr Leu Gly Val Tyr Ile Thr Leu Gly Lys
 660 665 670
 Lys Val Ala Tyr Asp Val Ser Asn Phe
 675 680

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 <212> PRT
 <213> B.fragilis

<400> 6508
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 20 25 30
 Asn Thr Phe Asp Glu Thr Ile Ile Ala Ile Leu Met Ile Phe Ile Ala
 35 40 45
 Val Gly Leu Asp Tyr Leu Cys Gln Ala Ile Phe Val Gly Gly Met Lys
 50 55 60
 Arg Leu Ala Arg Lys Thr Ser Tyr Lys Trp Asp Thr Leu Met Val Lys
 65 70 75 80
 His Lys Val Ile His His Leu Ile His Ile Leu Pro Gly Ile Leu Met
 85 90 95
 Tyr Met Leu Leu Pro Met Ala Phe Val His Gly Lys Thr Leu Leu Leu
 100 105 110
 Val Ser Gln Lys Ile Cys Val Ile Tyr Met Ile Phe Ala Leu Leu Leu
 115 120 125
 Ala Leu Asn Ser Ser Leu Leu Met Leu Leu Asp Ile Leu Ser Ala Lys
 130 135 140
 Glu Lys Leu Lys Asp Arg Pro Met Lys Gly Phe Ile Gln Val Leu Gln
 145 150 155 160
 Val Leu Val Phe Phe Ile Gly Gly Ile Val Ile Val Ala Ile Ile Val
 165 170 175
 Asp Lys Ser Pro Ala Thr Leu Phe Ala Gly Leu Gly Ala Ser Ala Ala
 180 185 190
 Ile Leu Met Leu Val Phe Lys Asp Ser Ile Leu Gly Phe Val Ala Gly
 195 200 205
 Ile Gln Leu Ser Ala Asn Asp Met Ile Arg Pro Gly Asp Trp Val Thr
 210 215 220
 Ile Pro Ser Thr Asn Ala Asn Gly Ile Val Glu Glu Ile Thr Leu Asn
 225 230 235 240
 Thr Val Lys Ile Gln Asn Phe Asp Asn Thr Ile Ser Thr Val Pro Pro
 245 250 255
 Tyr Ser Leu Val Asn Gly Ser Phe Gln Asn Trp Arg Gly Met Thr Glu
 260 265 270
 Ser Gly Gly Arg Arg Val Met Lys Ser Ile Phe Leu Asp Leu Thr Thr
 275 280 285
 Leu Lys Phe Cys Thr Pro Glu Met Leu Asp Thr Phe Arg Lys Glu Ile
 290 295 300
 Pro Leu Leu Ala Asp Tyr Gln Pro Glu Glu Gly Val Ile Pro Thr Asn
 305 310 315 320
 Ser Gln Val Phe Arg Val Tyr Val Glu Arg Tyr Leu Cys Ser Leu Pro
 325 330 335
 Val Val Asn Gln Asp Leu Asp Leu Ile Ile Ser Gln Lys Glu Ala Thr
 340 345 350
 Glu Tyr Gly Val Pro Ile Gln Ile Tyr Phe Phe Ser Arg Asn Lys Ile
 355 360 365

GenBank accession number: F01001.1
 B.fragilis, complete genome sequence

Trp Lys Glu Tyr Glu Arg Ile Gln Ser Asp Ile Phe Asp His Phe Phe
 370 375 380
 Ala Met Ile Pro Lys Phe Glu Leu Lys Val Tyr Gln Tyr Ser Asp
 385 390 395

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<212> PRT

<213> B.fragilis

<400> 6509

Asn Thr Asn Gln Ser Ile Ser Pro Gln Lys His Asn Asn Thr Phe Met
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 Lys Lys Leu Ile Leu Ser Thr Ala Leu Leu Ala Ala Ile Cys Thr Ala
 20 25 30
 Gly Gln Ala Gln Glu Thr Asn Asp Tyr Tyr Val Lys His Val Glu Phe
 35 40 45
 Pro Gln Gly Ala Thr Leu Glu Gln Lys Val Asp Met Ala Ala Arg Leu
 50 55 60
 Val Pro Thr Pro Gln Gln Leu Glu Trp Gln Gln Met Glu Leu Thr Ala
 65 70 75 80
 Phe Leu His Phe Gly Ile Asn Thr Phe Thr Gly Arg Glu Trp Gly Asp
 85 90 95
 Gly Lys Glu Asn Pro Ala Leu Phe Asn Pro Thr Asp Phe Asp Ala Glu
 100 105 110
 Gln Trp Val Arg Ser Leu Lys Glu Ala Gly Phe Lys Met Ala Ile Leu
 115 120 125
 Thr Ala Lys His His Asp Gly Phe Cys Leu Trp Pro Thr Lys Thr Thr
 130 135 140
 Gly His Ser Val Ala Ala Ser Pro Trp Lys Asp Gly Lys Gly Asp Val
 145 150 155 160
 Val Arg Glu Leu Arg Asp Ala Cys Asp Lys Tyr Gly Ile Lys Phe Gly
 165 170 175
 Val Tyr Leu Ser Pro Trp Asp Arg Asn Ala Ser Cys Tyr Gly Asp Ser
 180 185 190
 Pro Lys Tyr Asn Glu Phe Phe Ile Glu Gln Leu Thr Glu Leu Leu Thr
 195 200 205
 Asn Tyr Gly Glu Val His Glu Val Trp Phe Asp Gly Ala Asn Gly Glu
 210 215 220
 Gly Pro Asn Gly Lys Lys Gln Glu Tyr Asp Trp Thr Ala Ile Leu Ser
 225 230 235 240
 Thr Ile Arg Arg Leu Gln Pro Arg Ala Val Thr Ala Ile Met Gly Asp
 245 250 255
 Asp Val Arg Trp Val Gly Asn Glu Arg Gly Leu Gly Arg Glu Thr Glu
 260 265 270
 Trp Ser Ala Thr Val Leu Thr Pro Gly Thr Tyr Ala Arg Cys Glu Glu
 275 280 285
 Gln Asn Lys Ala Leu Gly Val Lys Ala Thr Ser Lys Asp Leu Gly Gly
 290 295 300
 Arg Asp Met Leu Val Asn Ala Lys Glu Leu Phe Trp Tyr Pro Ser Glu
 305 310 315 320
 Val Asp Val Ser Ile Arg Pro Gly Trp Phe Tyr His Gln Gln Glu Asp
 325 330 335
 Asn Gln Val Lys Ser Leu Lys His Leu Thr Asp Ile Tyr Phe Lys Ser
 340 345 350
 Val Gly Tyr Asn Ser Val Leu Leu Leu Asn Ile Pro Pro Asp Gln Arg
 355 360 365
 Gly Arg Ile Ser Asp Ala Asp Val Asn Arg Leu Lys Glu Phe Ala Asp
 370 375 380

Tyr Arg Lys Glu Ile Phe Ala Asp Asn Arg Val Lys Gly Gly Leu Lys
 385 390 395 400
 Ala Trp Thr Ala Arg Pro Gly Asp Thr Arg Val Tyr Gln Leu Lys Pro
 405 410 415
 Lys Ser Glu Ile Asn Val Val Met Leu Arg Glu Asp Ile Ser Lys Gly
 420 425 430
 Gln Arg Met Glu Ala Phe Thr Val Glu Ala Leu Thr Ala Asp Gly Trp
 435 440 445
 Lys Glu Ile Ala Lys Gly Thr Val Gly Tyr Lys Arg Leu Ile Arg
 450 455 460
 Ile Pro Ala Val Glu Ala Arg Gln Leu Arg Val Lys Val Asp Ala Cys
 465 470 475 480
 Arg Leu Ala Ala Asn Ile Ser Glu Val Ala Ala Tyr Tyr Ala Arg Pro
 485 490 495
 Leu Glu Glu Ser Ala Ala Lys Glu Asn Trp Asn Asp Leu Pro Arg Thr
 500 505 510
 Ala Trp Lys Gln Val Thr Ala Ala Pro Leu Val Ile Asp Leu Gly Lys
 515 520 525
 Ala Val Asp Met Thr Gly Phe Val Tyr Ala Pro Ala Asn Ala Glu Ala
 530 535 540
 Lys Pro Thr Met Ala Phe Arg Tyr Lys Phe Tyr Ile Ser Thr Asn Gly
 545 550 555 560
 Arg Asp Trp Lys Glu Val Pro Thr Thr Gly Glu Phe Ser Asn Ile Met
 565 570 575
 His Asn Pro Val Pro Gln Thr Val Ser Phe Gly Asn Lys Val Ser Ala
 580 585 590
 Arg Tyr Ile Lys Leu Asp Ala Thr Thr Pro Asp Thr Thr Pro Ala Arg
 595 600 605
 Val Asp Leu Lys Glu Ile Gly Ile Arg Leu Gln Lys
 610 615 620

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<212> PRT

<213> B.fragilis

<400> 6510

Ser Pro Cys Leu Ser Tyr Leu Ser Asp Ile Leu Tyr Tyr Phe Ala Gly
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 20 25 30
 Arg Arg Tyr Leu Gln Ser Leu Tyr Pro Val Ala Tyr Gln Arg Trp Lys
 35 40 45
 Val Val Leu Ile Ser Ser Leu Val Val Phe Leu Ile Leu Leu Val Leu
 50 55 60
 Gln Pro Phe Gly Ile Ser Gly Ile Arg Gln His Lys Phe Trp Ile Leu
 65 70 75 80
 Val Gly Phe Met Gly Val Thr Ala Val Ser Leu Ser Ile Pro Met Tyr
 85 90 95
 Val Phe Gly Lys Leu Phe Pro Lys Phe Tyr Lys Glu Glu Thr Trp Thr
 100 105 110
 Val Trp Lys Gln Ile Val Asn Leu Leu Gln Ile Leu Phe Phe Ile Ala
 115 120 125
 Ile Gly Asn Trp Ile Tyr Ser Thr Leu Val Phe Gly Trp Gly Leu Arg
 130 135 140
 Trp Asp Val Phe Cys Ala Phe Ala Leu Phe Thr Leu Val Ile Gly Leu
 145 150 155 160
 Phe Pro Thr Val Leu Phe Ile Leu Leu Asn Gln Asn Arg Leu Leu Ala
 165 170 175

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Ile His Leu Lys Glu Ala Thr Glu Met Asn Leu His Leu Gln Arg Ser
      180      185      190
Val Leu Leu Ala Glu Ser Val Glu Thr Thr Gln Asp Ser Pro Phe Leu
      195      200      205
Leu Phe Gln Gly Gly Ile Arg Glu Ser Leu Glu Leu Asp Ser Lys Asp
      210      215      220
Leu Leu Tyr Val Glu Ser Asn Gly Asn Tyr Ile Arg Val Asn Tyr Gln
      225      230      235      240
Lys Ala Gly Lys Asn Val Gln Cys Leu Leu Arg Ala Thr Met Lys Gln
      245      250      255
Ala Glu Glu Val Thr Ala Val Cys Pro Leu Val Leu Lys Cys His Arg
      260      265      270
Ala Phe Leu Val Asn Val Arg Lys Val Val Lys Val Asn Gly Asn Ser
      275      280      285
Gln Gly Tyr Arg Leu Leu Leu Glu Gly Cys Pro Glu Glu Ile Pro Val
      290      295      300
Ser Arg Gly Tyr Ser Lys Gln Val Lys Glu Leu Ile Glu Gly Ile Ser
      305      310      315      320
Gly Asp

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<210> 6511

<211> 91

<212> PRT

<213> B.fragilis

<400> 6511

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Ser Val Gln Lys Ser Ile Phe Ala Pro Thr Lys Leu Ile Glu Met Leu
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Tyr Thr Ile Leu Ile Thr Leu Leu Ile Val Ala Ile Cys Leu Gly Leu
      20      25      30
Leu Gly Ile Lys Val Phe Phe Thr Lys Gly Gly Lys Phe Pro Asn Gly
      35      40      45
His Val Ser Gly Asn Lys Ala Leu Arg Glu Arg Gly Ile Ser Cys Ala
      50      55      60
Gln Ser Gln Asp Arg Glu Ala Gln Lys Lys Arg Arg Phe Ser Ile Asp
      65      70      75      80
Glu Ile Glu Lys Ala Leu Asn Asp Ser Met Asn
      85      90

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<210> 6512

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<212> PRT

<213> B.fragilis

<400> 6512

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Leu Ile Lys Lys Leu Tyr Phe Thr Ser Met Lys Arg Met Asn Tyr Leu
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Ile Asn Gly Phe Ala Ala Leu Ala Phe Leu Phe Leu Phe Ser Gln Cys
      20      25      30
Ala Gly Lys Ala Asp Asn Ala Ala Pro Ala Ala Ser Gly Asn Ala Asn
      35      40      45
Gly Thr Ser Gly Leu Lys Ile Ala Tyr Val Glu Val Asp Thr Leu Leu
      50      55      60
Ser Gln Tyr Asn Phe Cys Lys Asp Leu Asn Ala Asp Met Ile Ser Lys
      65      70      75      80
Glu Glu Asn Ser Arg Met Val Leu Asn Gln Lys Ala Asn Glu Leu Arg
      85      90      95
Lys Ser Gln Gln Glu Phe Gln Lys Lys Tyr Glu Ser Asn Ala Phe Ile

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<210> 6513
<211> 288
<212> PRT
<213> B.fragilis
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Gln	Ile	Ile	Glu	Ser	Ile	Leu	Leu	Ile	Tyr	Lys	Ser	Leu	Leu	Phe	Met
1				5					10					15	
Met	Arg	Ile	Arg	Ile	Ile	Ile	Thr	Leu	Leu	Ile	Ala	Leu	Phe	Val	Glu
			20					25					30		
Ser	Arg	Gln	Glu	Ala	Phe	Gly	Gln	Thr	Val	Asp	Thr	Leu	Ser	Leu	Ser
		35				40						45			
Asp	Lys	Val	Ile	Arg	Thr	Ala	Ser	Phe	Ala	Thr	Gly	Phe	Arg	Gly	Glu
	50					55					60				
Val	Trp	Arg	Asn	Pro	Ala	Leu	Tyr	Tyr	Tyr	Tyr	Thr	Pro	Tyr	Thr	Trp
65				70						75					80
Thr	Arg	Leu	Asp	Val	Asn	Gly	Ala	Tyr	His	Asp	Lys	Gly	Lys	Ala	Ser
				85					90					95	
Leu	Lys	Gln	Glu	Gly	Asp	Lys	Asp	Thr	His	Ile	Gly	Val	Asp	Val	His
			100					105					110		
Ser	Phe	Val	Ile	Leu	Ser	Gly	Arg	Asp	Arg	Val	Phe	Gly	Ser	Ala	Gly
		115				120						125			
Tyr	Arg	Ser	Glu	Lys	Gln	Glu	Asn	Val	Leu	Trp	Asn	Glu	Asn	Ile	Asp
	130					135					140				
Trp	Lys	Leu	Ile	Ala	Pro	Tyr	Val	Thr	Gly	Asp	Ser	Ile	Gly	Gly	Phe
145				150						155				160	
Leu	Lys	Gly	Glu	Thr	Tyr	Tyr	Phe	Asn	Gly	Gly	Tyr	Ala	Ser	Glu	Ser
				165					170					175	
Gly	Ser	Trp	Thr	Trp	Gly	Ile	Thr	Gly	Gly	Tyr	Arg	Ala	Ser	His	Asn
			180					185					190		
Tyr	Arg	Asp	Lys	Asp	Pro	Arg	Pro	Arg	Asn	Thr	Ala	Ser	Asp	Leu	Ser
		195				200						205			
Phe	Ala	Leu	Gly	Ala	Gly	Tyr	Arg	Leu	Gly	Ala	Tyr	Arg	Leu	Gly	Val
	210					215					220				
Ser	Thr	Asp	Phe	Arg	Leu	Tyr	Gln	Gln	Lys	Ser	Glu	Ile	Ser	Phe	Leu
225				230						235				240	
Ala	Asp	Lys	Gly	Ser	Thr	Ser	Val	Tyr	His	Met	Leu	Gly	Leu	Gly	Met
				245					250					255	
Asp	Tyr	Val	Arg	Phe	Ala	Gly	Asn	Gln	Thr	Gly	Thr	Lys	His	Gln	Gly
		260						265					270		
Thr	Ser	Ser	Pro	Arg	Gly	Trp	Met	Gly	Ser	Ala	Leu	Cys	Thr	Leu	Ala
		275					280					285			

<210> 6514
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 <213> B.fragilis

<400> 6514

Thr	Ser	Thr	Glu	Gln	His	Leu	Lys	Gly	Ile	Gln	Ser	Met	Leu	Arg	Leu
1			5					10					15		
Phe	Phe	Ile	Leu	Ile	Ser	Leu	Ser	Ser	Leu	Phe	Leu	Ser	Ala	Gln	
		20					25				30				
Asn	Arg	Pro	Pro	Phe	Arg	Val	Val	Phe	Trp	Asn	Thr	Glu	Asn	Phe	Phe
	35					40					45				
Asp	Thr	Arg	His	Asp	Ser	Leu	Lys	Asn	Asp	Met	Glu	Phe	Leu	Pro	His
	50				55					60					
Ser	Met	Arg	His	Trp	Asn	His	Arg	Arg	Tyr	Lys	Lys	Lys	Leu	Asp	Asn
65					70					75				80	
Val	Ala	Arg	Thr	Leu	Thr	Ala	Ile	Gly	Glu	Trp	Asn	Phe	Pro	Ala	Leu
			85					90					95		
Ile	Gly	Leu	Cys	Glu	Val	Glu	Asn	Asp	Thr	Val	Met	Arg	Asp	Leu	Thr
		100						105					110		
Leu	Tyr	Ser	Pro	Leu	Lys	Glu	Ala	Gly	Tyr	Arg	Tyr	Val	Met	Thr	His
	115						120					125			
Cys	Ser	Asp	Leu	Arg	Gly	Ile	Asp	Val	Ala	Leu	Leu	Tyr	Gln	Arg	Asp
	130					135					140				
Arg	Phe	Lys	Leu	Leu	Ser	Tyr	Ser	Ala	Leu	Ser	Val	Gly	Asn	Phe	Lys
145					150					155					160
Gly	His	Arg	Pro	Thr	Arg	Asp	Ile	Leu	His	Val	Ser	Gly	Leu	Leu	Leu
			165					170					175		
Thr	Gly	Asp	Thr	Leu	Asp	Ile	Met	Val	Ala	His	Leu	Pro	Ser	Arg	Ser
		180						185					190		
Gly	Gly	Val	Arg	Gln	Ser	Glu	Pro	Tyr	Arg	Leu	Tyr	Ala	Ala	Gln	Lys
	195						200					205			
Leu	Lys	Asp	Ala	Ala	Asp	Ser	Leu	Ile	Asn	Val	Arg	Pro	Ser	Ala	Lys
	210					215					220				
Leu	Ile	Ile	Met	Gly	Asp	Phe	Asn	Asp	Tyr	Pro	Thr	Asp	Lys	Ser	Val
225					230					235					240
Val	Gln	Val	Leu	Gln	Ala	Leu	Ser	Pro	Glu	Val	Ser	Thr	His	His	Asp
			245						250				255		
Arg	Leu	Tyr	His	Leu	Leu	Ala	Arg	Lys	Ala	Lys	Asp	Arg	Asn	Phe	Gly
		260						265					270		
Ser	Tyr	Lys	Tyr	Gln	Gly	Glu	Trp	Gly	Leu	Leu	Asp	His	Leu	Ile	Val
	275						280					285			
Ser	Gly	Thr	Leu	Leu	Asp	Ile	Ser	Gly	Thr	Leu	Phe	Thr	Glu	Glu	Lys
	290					295					300				
Lys	Ala	Asn	Val	Ala	Arg	Leu	Pro	Phe	Leu	Leu	Thr	Lys	Asp	Glu	Lys
305					310						315				320
Tyr	Gly	Gly	Met	Gln	Pro	Phe	Arg	Thr	Tyr	Val	Gly	Met	Lys	Tyr	Gln
			325						330					335	
Glu	Gly	Tyr	Ser	Asp	His	Leu	Pro	Val	Tyr	Val	Asp	Phe	Glu	Thr	Asn
			340					345					350		
Gln	Ser	Glu	Tyr												
		355													

<210> 6515
 <211> 408
 <212> PRT
 <213> B.fragilis

<400> 6515

Asn Lys Ile Glu Met Lys Met Lys Lys Asn Gln Leu Thr Met Ala Ile
 1 5 10 15
 Leu Phe Ala Thr Met Leu Gly Phe Thr Ala Cys Ser Asp Asp Asp Lys
 20 25 30
 Val Asn Ile Ser Thr Val Ser Ile Thr Thr Thr Val Asp Thr Thr Ile
 35 40 45
 Glu Gly Leu Gln Leu Thr Gly Gly Thr Tyr Thr Phe Glu Asn Ile Asn
 50 55 60
 Thr Ser Val Lys Thr Asp Val Ala Tyr Pro Leu Gln Ser Ile Glu Leu
 65 70 75 80
 Ala Asp Gly Leu Tyr Asn Val Thr Phe Ile Gly Lys Gly Thr Tyr Ser
 85 90 95
 Gln Asn Gly Thr Ser Val Glu Val Asp Val Gln Gly Val Gln Gln Asn
 100 105 110
 Val Thr Val Ser Gly Gly Ser Cys Lys Leu Glu Leu Thr Val His Val
 115 120 125
 Leu Asn Thr Gly Glu Pro Gly Phe Val Ile Ala Glu Ile Phe Ile Pro
 130 135 140
 Gly Thr Tyr Asn Glu Ala Gly Lys Gln Tyr Asn Gly Asp Gln Tyr Val
 145 150 155 160
 Arg Ile Tyr Asn Asn Ser Asp Lys Val Leu Tyr Ala Asp Gly Leu Ile
 165 170 175
 Phe Met Glu Ser Gln Phe Gln Thr Thr Gln Lys Tyr Gln Ser Val Asp
 180 185 190
 Pro Asp Ile Met Asn Glu Ala Ile Ala Val Gly Ser Val Val Ala Val
 195 200 205
 Pro Gly Ser Gly Thr Asp His Pro Val Gln Pro Gly Glu Ser Phe Ile
 210 215 220
 Leu Cys Asp Asn Ala Ile Asn His Lys Glu Ala Asn Pro Asn Ser Ile
 225 230 235 240
 Asp Leu Ser Lys Ala Asn Phe Glu Trp Tyr Ile Glu Ser Lys Gln Asp
 245 250 255
 Val Asp Asn Pro Ala Val Pro Asn Leu Asp Ile Tyr Tyr Cys Tyr Ser
 260 265 270
 Lys Thr Ile Trp Val Leu Asn Lys Gln Gly Asn Arg Ala Tyr Ala Ile
 275 280 285
 Gly Arg Leu Pro Gln Gly Met Thr Lys Glu Lys Tyr Ile Ser Asp Tyr
 290 295 300
 Ala Tyr Asn Tyr Thr Tyr Ile Met Gln Asn Gly Thr Ala Ser Lys Pro
 305 310 315 320
 Gln Ser Lys Tyr Lys Phe Pro Asn Glu Trp Ile Ile Asp Ala Val Asn
 325 330 335
 Val Gly Ala Ser Asn Glu Trp Gln Trp Asn Val Thr Ser Thr Gly Leu
 340 345 350
 Asp Met Gly His Thr Tyr Val Gly Val Asn Asn Thr Ile Ala Glu Asn
 355 360 365
 Ile Gly Lys Cys Val Met Arg Lys Val Ala Tyr Lys Asp Gly Glu Arg
 370 375 380
 Glu Val Leu Gln Asp Thr Asn Asn Ser Thr Val Asp Phe Thr Pro Ala
 385 390 395 400
 Ala Thr Pro Ser Leu Phe Asn Lys
 405

<210> 6516

<211> 114

<212> PRT

<213> B.fragilis

<400> 6516

Val Ile Ser Phe Ile Phe Ala Thr Gly Ile Asn Glu Lys Ile Met Gly
 1 5 10 15
 Lys Leu Ile Thr Ile Trp Glu Phe Ile Gly Arg His Lys Tyr Trp Ile
 20 25 30
 Thr Val Val Ala Phe Gly Val Ile Ile Gly Phe Leu Asp Glu Asn Ser
 35 40 45
 Met Ile Arg Arg Ile Gly Tyr Ala Arg Glu Ile Ser Arg Leu Gln Gly
 50 55 60
 Glu Ile Asp Lys Tyr Arg Ala Glu Tyr Glu Glu Asn Thr Glu Arg Leu
 65 70 75 80
 Asn Glu Leu Ser Thr Asn Pro Glu Ala Ile Glu Gln Ile Ala Arg Glu
 85 90 95
 Lys Tyr Leu Met Lys Lys Pro Asn Glu Asp Ile Tyr Val Phe Asp Glu
 100 105 110
 Glu Glu

<210> 6517

<211> 939

<212> PRT

<213> B.fragilis

<400> 6517

Ile Asp Thr Leu Leu Tyr Leu Ile Phe Gly Ile Ala Ser Ala Ala Asp
 1 5 10 15
 Ile Leu Tyr Phe Cys Glu Leu Ile Glu Ser Lys Met Ile Arg Lys Ile
 20 25 30
 Ala Tyr Thr Phe Phe Ser Phe Leu Ile Cys Cys Asn Val Ser Leu Ala
 35 40 45
 Trp Gly Gln Thr Phe Ala Phe Arg Gly Thr Val Leu Asp Glu Gln Thr
 50 55 60
 His Lys Ala Leu Asp Tyr Ala Thr Ile Gln Leu Phe Val Glu Lys Gln
 65 70 75 80
 Phe Ala Tyr Gly Gly Ile Thr Asp Ala Asn Gly His Phe Glu Leu Leu
 85 90 95
 His Ile His Pro Gly Thr Tyr Arg Ile Ile Ile Ser Tyr Leu Gly Tyr
 100 105 110
 Asp Ser Thr Glu Lys Glu Ile Lys Val Val Gly Asn Thr Ser Asp Ile
 115 120 125
 Phe Tyr Leu Lys Pro Ser Asn Met Ala Leu Asn Glu Val Val Val Thr
 130 135 140
 Ala Ser Glu Ser Lys Arg Ala Thr Ser Ala Ser Ile Val Asp Arg Thr
 145 150 155 160
 Ala Met Lys His Leu Gln Pro Ser Ser Phe Ser Asp Leu Met Glu Leu
 165 170 175
 Val Pro Gly Gly Lys Ser Ala Asp Pro Gln Met Gly Gln Ala Asn Leu
 180 185 190
 Ile Arg Ile Arg Glu Thr Gly Lys Thr Glu Asp Ile Ser Ser Leu Gly
 195 200 205
 Val Gly Phe Tyr Ile Asp Gly Ile Phe Gln Asn Thr Asp Ala Asn Leu
 210 215 220
 Gln Tyr Met Pro Ser Ser Thr Ser Ala Val Asn Ala Thr Ser Thr Met
 225 230 235 240
 Ser Lys Gly Val Asp Met Arg Thr Ile Pro Thr Asp Asn Ile Glu Lys
 245 250 255
 Val Glu Ile Ile Arg Gly Ile Pro Ser Val Ala Tyr Gly Asn Val Ala
 260 265 270
 Asn Gly Ala Val Ile Ile Gln Arg Lys Thr Ser Glu Ser Pro Leu Ser
 275 280 285

Ala	Arg	Phe	Lys	Ala	Asp	Lys	Thr	Ser	Lys	Leu	Phe	Ser	Val	Gly	Lys
290						295					300				
Gly	Phe	Arg	Leu	Asp	Gly	Asn	Gly	Arg	Tyr	Val	Leu	Asn	Thr	Asp	Leu
305					310					315					320
Ser	Tyr	Leu	Asp	Ser	Lys	Ile	Asp	Pro	Arg	Asn	Ser	Val	Lys	Asn	Tyr
				325					330					335	
Thr	Arg	Leu	Thr	Ala	Ser	Ala	Arg	Leu	Asp	Gly	Lys	Trp	Leu	Trp	Asn
			340					345					350		
Glu	Arg	Asn	Ile	His	Trp	Asn	Leu	Ser	Thr	Asp	Tyr	Thr	Gly	Ser	Phe
		355					360				365				
Asp	Asp	Ala	Lys	Arg	Asp	Lys	Asp	Ala	Thr	Val	Lys	Glu	Asp	Ser	Tyr
	370					375					380				
Lys	Ser	Asp	Phe	Ser	Ser	Phe	Lys	Met	Ala	Gly	Lys	Trp	Asn	Leu	Lys
385					390					395					400
Phe	Ser	Asn	His	Ser	Trp	Ile	Arg	Glu	Ile	His	Ala	Ala	Thr	Ser	Val
			405						410					415	
Ser	Trp	Gln	Trp	Glu	Lys	Met	Arg	Glu	Thr	Lys	Ser	Val	Ser	Leu	Asn
		420						425					430		
Arg	Pro	Ala	Ala	Ile	Ala	Thr	Gln	Thr	Glu	Thr	Gly	Glu	Ser	Asp	Gly
	435					440						445			
Ile	Tyr	Leu	Pro	Tyr	Asn	Tyr	Val	Ala	Gln	Met	Glu	Ile	Asp	Gly	Lys
	450					455					460				
Pro	Leu	Tyr	Val	Thr	Val	Ser	Ala	Arg	Thr	His	Leu	Ala	Phe	Pro	Leu
465					470					475					480
Gly	Gly	Leu	Gln	Asn	Arg	Met	Asn	Leu	Gly	Val	Glu	Trp	Asn	Tyr	Gln
			485						490					495	
Lys	Asn	Leu	Gly	Lys	Gly	Gln	Val	Phe	Asp	Val	Thr	Arg	Pro	Ile	Ser
		500						505					510		
Glu	Gly	Leu	Ser	Thr	Arg	Pro	Arg	Arg	Phe	Lys	Asp	Ile	Pro	Gly	Leu
	515					520						525			
Gln	Pro	Phe	Ala	Phe	Tyr	Ala	Glu	Glu	Val	Leu	Asn	Leu	Pro	Val	Lys
	530					535					540				
Arg	His	Lys	Leu	Ala	Phe	Thr	Ala	Gly	Ile	Arg	Leu	Gln	Ser	Leu	Leu
545					550					555					560
Gly	Leu	Asp	Arg	Lys	Tyr	Glu	Met	Gln	Gly	Lys	Ile	Tyr	Pro	Asp	Leu
				565					570					575	
Arg	Leu	Asp	Leu	Gln	Trp	Ser	Leu	Pro	Thr	Ser	Asn	Gly	Trp	Asn	Ile
		580						585					590		
Ala	Phe	Ser	Gly	Gly	Leu	Gly	Trp	Ile	Ser	Arg	Met	Pro	Thr	Thr	Ala
	595						600					605			
Gln	Leu	Tyr	Pro	Asp	Phe	Lys	Tyr	Val	Asp	Leu	Ile	Gln	Leu	Asn	Tyr
	610					615					620				
Tyr	His	Asn	His	Pro	Asp	Tyr	Arg	Arg	Ile	Asn	Met	Met	Thr	Tyr	Lys
625					630					635					640
Trp	Asp	Asn	Thr	Asn	Tyr	Gln	Leu	Glu	Pro	Ala	Arg	Asn	Met	Lys	Trp
				645					650					655	
Glu	Val	Arg	Ala	Asp	Ile	Gly	Tyr	Lys	Gly	Asn	Arg	Leu	Ser	Ala	Thr
		660					665						670		
Tyr	Phe	Arg	Glu	Arg	Met	Asn	Asn	Ala	Phe	Asp	Asp	Leu	Thr	Tyr	Tyr
	675						680					685			
Lys	Ser	Leu	Ala	Tyr	Lys	Leu	Tyr	Asp	Pro	Ala	Ser	Ile	Asp	Gly	Ser
	690					695					700				
Ala	Leu	Thr	Ala	Pro	Pro	Glu	Leu	Ser	Gln	Leu	Thr	Tyr	Ala	Asn	Glu
705					710					715					720
Tyr	Asn	Leu	Asp	Val	Tyr	Ser	Thr	Gln	Gly	Asn	Gly	Met	Lys	Val	His
				725					730					735	
Lys	Glu	Gly	Val	Glu	Phe	Gln	Phe	Ala	Ser	Arg	Arg	Ile	Glu	Ser	Leu
			740					745					750		
Lys	Thr	Arg	Val	Thr	Val	Tyr	Gly	Ala	Trp	Ile	Lys	Thr	Val	Tyr	Ser

755	760	765
Ser Asp Ser Pro Lys Tyr Lys Ala Ser Ser Ile Leu Leu Asp Asn Lys		
770	775	780
Gln Leu Lys Tyr Val Gly Leu Tyr Gln Gly Glu Asn Gly Thr Glu Ser		
785	790	795
Gln Ala Phe Asn Thr Asn Phe Met Phe Asp Thr Tyr Ile Gln Arg Leu		800
	805	810
Gly Leu Thr Phe Ser Thr Ser Ala Gln Cys Thr Trp Tyr Thr Asn Arg		815
	820	825
Arg Asn Leu Trp Asn Asn Gly Val Pro Val Ser Tyr Ile Asp Gln Ser		830
	835	840
Gly Glu Thr His Leu Phe Arg Glu Glu Asp Lys Asn Asn Ile Gln Leu		845
	850	855
Gln His Leu Val Glu Lys Tyr Ser Ala Thr Tyr Phe Glu Arg Thr Thr		860
865	870	875
Val Pro Phe Tyr Met Asp Ile Asn Leu Lys Ala Ser Lys Arg Ile Gly		880
	885	890
Lys Tyr Leu Asn Leu Ala Phe Tyr Val Asn Arg Leu Leu Gly Ile Tyr		895
	900	905
Pro Asp Tyr Thr Leu Arg Gly Val Leu Gln Arg Arg Thr Ser Glu Ser		910
	915	920
Pro Tyr Phe Gly Met Glu Met Asn Leu Thr Phe		925
	930	935

<210> 6518

<211> 566

<212> PRT

<213> B.fragilis

<400> 6518

Gln His Thr Trp Ile Val His Ile Ala Cys Met Asn Val Arg Lys Ile		
1	5	10
Ile Leu Pro Ser Leu Ser Gly His Trp Ala Thr Lys Pro Gly Asn Gly		15
	20	25
Ile Asn Phe Glu Arg Thr Tyr Asp Trp Leu Lys Ser Val Glu Lys Ser		30
	35	40
Arg Pro Val Gln Tyr Glu Arg Ala Glu Gln Asn Tyr Asn Thr Asp Ile		45
	50	55
Tyr Cys Arg Met Tyr Arg Ser Val Asp Glu Ile Lys Ala Tyr Leu Ala		60
65	70	75
Gln Lys Asp Ile Tyr Arg Pro Phe Ile Leu Cys Glu Tyr Val His Ala		80
	85	90
Met Gly Asn Ser Val Gly Gly Leu Lys Glu Tyr Trp Asp Val Phe Glu		95
	100	105
Asn Asn Pro Met Ala Gln Gly Gly Cys Val Trp Asp Trp Val Asp Gln		110
	115	120
Ser Phe Arg Glu Ile Asp Ser Asn Gly Arg Trp Tyr Trp Ser Tyr Gly		125
	130	135
Gly Asp Tyr Gly Pro Lys Gly Ile Pro Ser Phe Gly Asn Phe Cys Cys		140
145	150	155
Asn Gly Leu Val Ser Ala Asp Arg Val Pro His Pro His Leu Leu Glu		160
	165	170
Val Lys Lys Ile Tyr Gln Asn Ile Lys Cys Thr Leu Ile Asn Lys Asn		175
	180	185
Asn Leu Thr Val Arg Val Lys Asn Trp Phe Asp Phe Ser Asn Leu Asn		190
	195	200
Glu Tyr Ile Leu His Trp Gln Val Val Gly Asp Asn Gly Lys Leu Leu		205
	210	215
Ala Glu Gly Asn Lys Glu Val Asn Cys Ala Pro His Ala Thr Ala Asp		220

225 230 235 240
 Val Thr Leu Gly Lys Val Ala Leu Pro Ala Asn Val Arg Glu Gly Tyr
 245 250 255
 Leu Asn Leu Ser Trp Thr Arg Lys Glu Ala Ser Pro Met Val Gly Thr
 260 265 270
 Asp Trp Glu Val Ala Tyr Asp Gln Phe Val Leu Pro Gly Thr Lys Gly
 275 280 285
 Ser Thr Ala Tyr Leu Pro Ala Lys Ala Gly Gln Thr Ala Phe Thr Val
 290 295 300
 Asp Lys Glu Thr Gly Ala Leu Asn Ser Leu Thr Leu Asp Gly Gln Glu
 305 310 315 320
 Leu Leu Ala Thr Pro Val Thr Leu Ser Leu Phe Arg Pro Ala Thr Asp
 325 330 335
 Asn Asp Asn Arg Asp Arg Asn Gly Ala Tyr Leu Trp Arg Lys Ala Gly
 340 345 350
 Leu Asn Gln Leu Thr Gln Lys Val Val Ser Leu Lys Asp Gly Lys Lys
 355 360 365
 Ala Ala Thr Ala Lys Val Glu Ile Leu Asn Ala Lys Gly Met Lys Val
 370 375 380
 Gly Asp Ala Asp Phe Ala Tyr Ser Leu Asn Ser Ala Gly Ala Leu Lys
 385 390 395 400
 Thr Lys Val Thr Phe Arg Pro Asp Thr Ala Val Val Lys Ser Met Ala
 405 410 415
 Arg Leu Gly Leu Thr Phe Glu Met Asn Asp Thr Tyr Gly Asn Val Ala
 420 425 430
 Tyr Leu Gly Arg Gly Asp Asn Glu Thr Tyr Ser Asp Arg Met Gln Ser
 435 440 445
 Gly Lys Ile Ala Leu Tyr Gln Thr Thr Ala Glu Arg Met Phe His Tyr
 450 455 460
 Tyr Val Thr Pro Gln Ser Thr Gly Asn Arg Thr Asp Val Arg Trp Met
 465 470 475 480
 Lys Leu Thr Asp Glu Thr Gly Gln Gly Ile Phe Val Asp Ser Asn Arg
 485 490 495
 Pro Phe Gln Phe Ser Val Ile Pro Phe Ala Asp Asp Val Leu Glu Lys
 500 505 510
 Ala Arg His Ile Asn Asp Leu Glu Arg Asn Gly His Val Thr Val His
 515 520 525
 Leu Asp Ala Glu Gln Ala Gly Val Gly Thr Ala Thr Cys Gly Pro Gly
 530 535 540
 Val Gln Pro Gln Tyr Arg Val Pro Val Thr Glu Gln Ser Phe Glu Phe
 545 550 555 560
 Thr Leu Arg Thr Val Lys
 565

<210> 6519

<211> 641

<212> PRT

<213> B.fragilis

<400> 6519

Asn Leu Phe Arg Phe Leu Phe Tyr Pro Cys Thr Phe Leu Arg Thr Phe
 1 5 10 15
 Ala Gln Thr Gln Lys Ile Glu Ile Ile Arg Asn Met Glu Asn Tyr Ile
 20 25 30
 Val Ser Ala Arg Lys Tyr Arg Pro Ser Thr Phe Glu Ser Val Val Gly
 35 40 45
 Gln Arg Ala Leu Thr Thr Thr Leu Lys Asn Ala Ile Ala Thr Gln Lys
 50 55 60
 Leu Ala His Ala Tyr Leu Phe Cys Gly Pro Arg Gly Val Gly Lys Thr

65				70				75				80			
Thr	Cys	Ala	Arg	Ile	Phe	Ala	Lys	Thr	Ile	Asn	Cys	Met	Asn	Leu	Thr
				85					90					95	
Ala	Asp	Gly	Glu	Ala	Cys	Asn	Glu	Cys	Glu	Ser	Cys	Val	Ala	Phe	Asn
			100					105					110		
Glu	Gln	Arg	Ser	Tyr	Asn	Ile	His	Glu	Leu	Asp	Ala	Ala	Ser	Asn	Asn
		115					120					125			
Ser	Val	Asp	Asp	Ile	Arg	Gln	Leu	Val	Glu	Gln	Val	Arg	Ile	Pro	Pro
	130					135					140				
Gln	Ile	Gly	Lys	Tyr	Lys	Val	Tyr	Ile	Ile	Asp	Glu	Val	His	Met	Leu
145					150					155				160	
Ser	Ala	Ser	Ala	Phe	Asn	Ala	Phe	Leu	Lys	Thr	Leu	Glu	Glu	Pro	Pro
				165					170					175	
Arg	His	Ala	Ile	Phe	Ile	Leu	Ala	Thr	Thr	Glu	Lys	His	Lys	Ile	Leu
			180					185					190		
Pro	Thr	Ile	Leu	Ser	Arg	Cys	Gln	Ile	Tyr	Asp	Phe	Asn	Arg	Ile	Ser
		195					200					205			
Val	Asp	Asp	Thr	Val	Asn	His	Leu	Thr	Tyr	Val	Ala	Ser	Lys	Glu	Gly
	210					215					220				
Ile	Thr	Ala	Glu	Pro	Glu	Ala	Leu	Asn	Val	Ile	Ala	Leu	Lys	Ala	Asp
225					230					235				240	
Gly	Gly	Met	Arg	Asp	Ala	Leu	Ser	Ile	Phe	Asp	Gln	Val	Val	Ser	Phe
				245					250					255	
Thr	Gly	Gly	Asn	Ile	Thr	Tyr	Lys	Ser	Val	Ile	Glu	Asn	Leu	Asn	Val
			260					265					270		
Leu	Asp	Tyr	Glu	Tyr	Tyr	Phe	Arg	Leu	Thr	Asp	Cys	Phe	Leu	Glu	Asn
	275					280						285			
Lys	Val	Ser	Asp	Ala	Leu	Leu	Leu	Phe	Asn	Asp	Val	Leu	Asn	Lys	Gly
	290					295					300				
Phe	Asp	Gly	Ser	His	Phe	Ile	Thr	Gly	Leu	Ser	Ser	His	Phe	Arg	Asp
305					310					315				320	
Leu	Leu	Val	Ser	Lys	Asp	Ala	Ala	Thr	Leu	Gln	Leu	Leu	Glu	Val	Gly
				325					330					335	
Ala	Gly	Ile	Arg	Gln	Arg	Tyr	Gln	Glu	Gln	Ala	Gln	Lys	Cys	Ala	Leu
		340						345					350		
Pro	Phe	Leu	Tyr	Arg	Ala	Met	Lys	Leu	Cys	Asn	Asp	Cys	Asp	Met	Asn
	355					360						365			
Tyr	Arg	Ala	Ser	Lys	Asn	Lys	Arg	Leu	Leu	Val	Glu	Leu	Thr	Leu	Ile
	370					375					380				
Gln	Val	Ala	Gln	Leu	Thr	Val	Glu	Gly	Asp	Asp	Gly	Ser	Gly	Gly	Arg
385					390				395					400	
Gly	Pro	Lys	Gln	Ala	Ile	Lys	Pro	Val	Phe	Thr	Gln	Pro	Ala	Ala	Ala
			405						410					415	
Gln	Gln	Pro	Gln	Val	Ala	Pro	Ile	Ala	Ser	Pro	Ser	Gln	Ser	Met	Asn
		420						425					430		
Ala	Ala	Thr	Pro	Val	Ala	Pro	Gln	Ala	Val	Ser	Gln	Gln	Val	Gly	Ser
	435						440					445			
Ser	Pro	Ala	Val	Asn	Val	Arg	Pro	Gly	Gly	Ala	Ile	Ser	Pro	Ser	Gly
	450				455					460					
Ala	Met	Pro	Asp	Ala	Val	Arg	Met	Ala	Gln	Phe	Lys	Glu	Glu	Lys	Lys
465					470				475					480	
Ile	Pro	Val	Met	Lys	Lys	Ser	Ser	Leu	Gly	Leu	Ser	Ile	Lys	His	Pro
			485						490					495	
Gln	Lys	Glu	Glu	Gln	Arg	Gly	Ala	Gly	Val	Val	His	Thr	Ala	Gln	
		500					505					510			
Met	Ser	Thr	Gln	Gln	Ile	Glu	Glu	Asp	Phe	Ile	Phe	Asn	Glu	Arg	Asp
	515					520					525				
Leu	Asn	Tyr	Tyr	Trp	Gln	Glu	Tyr	Ala	Gly	Arg	Met	Pro	Ile	Glu	Gln
	530				535						540				

Lys Ala Ile Ala Met Arg Met Gln Asn Met Arg Leu Ser Leu Leu Asn
 545 550 555 560
 Asp Thr Thr Phe Glu Val Val Val Asp Asn Glu Ile Val Ala Lys Asp
 565 570 575
 Phe Thr Ala Leu Ile Pro Gly Ile Gln Ala Tyr Leu Arg Gly Ser Leu
 580 585 590
 Lys Asn Arg Lys Val Thr Met Thr Val Arg Val Ser Glu Ala Thr Glu
 595 600 605
 Asn Val Arg Ala Val Ser Arg Val Glu Lys Phe Gln Met Met Ala Gln
 610 615 620
 Lys Asn Asn Ala Leu Leu Gln Leu Lys Glu Glu Phe Gly Leu Glu Leu
 625 630 635 640
 Tyr

<210> 6520

<211> 492

<212> PRT

<213> B.fragilis

<400> 6520

Lys Glu Lys Arg Met Glu Lys Ser Glu Leu Lys Pro Ala Gly Val Phe
 1 5 10 15
 His Phe Phe Asn Glu Ile Cys Gln Val Pro Arg Pro Ser Lys Lys Glu
 20 25 30
 Glu Lys Met Ile Ala Tyr Leu Lys Ala Phe Gly Glu Lys His Asn Leu
 35 40 45
 Glu Thr Lys Val Asp Glu Ala Gly Asn Val Leu Ile Lys Lys Pro Ala
 50 55 60
 Thr Pro Gly Lys Glu Asn Leu Lys Thr Val Ile Leu Gln Ser His Val
 65 70 75 80
 Asp Met Val Cys Glu Lys Asn Asn Asp Thr Asp His Asp Phe Leu Thr
 85 90 95
 Asp Pro Ile Glu Thr Glu Ile Asp Gly Glu Trp Met Lys Ala Lys Gly
 100 105 110
 Thr Thr Leu Gly Ala Asp Asn Gly Ile Gly Val Ala Thr Glu Leu Ala
 115 120 125
 Ile Leu Ala Asp Asp Ser Ile Glu His Gly Pro Ile Glu Cys Leu Phe
 130 135 140
 Thr Val Asp Glu Glu Thr Gly Leu Thr Gly Ala Phe Ala Leu Lys Glu
 145 150 155 160
 Gly Phe Met Ser Gly Glu Ile Leu Leu Asn Leu Asp Ser Glu Asp Glu
 165 170 175
 Gly Glu Leu Tyr Ile Gly Cys Ala Gly Gly Ile Asp Thr Val Ala Glu
 180 185 190
 Phe Gln Tyr Glu Asn Glu Met Thr Pro Ile Ser His Leu Cys Phe Arg
 195 200 205
 Ile Thr Val Lys Gly Leu Lys Gly Gly His Ser Gly Gly Asp Ile His
 210 215 220
 Leu Gly Arg Gly Asn Ala Asn Lys Ile Leu Asn Arg Phe Leu Tyr Gln
 225 230 235 240
 Met Met Thr Thr Tyr Gln Glu Asp Phe His Leu Tyr Glu Phe Asn Gly
 245 250 255
 Gly Asn Leu Arg Asn Ala Ile Pro Arg Glu Ala Ser Ala Val Phe Ser
 260 265 270
 Val Pro Glu His Tyr Lys His Asp Ile Arg Thr Ala Leu Asn Val Phe
 275 280 285
 Thr Ala Glu Ile Glu Asn Glu Leu His Arg Val Glu Pro Asp Leu Asn
 290 295 300

Ile Leu Leu Glu Thr Glu Pro His Arg Asp Trp Ser Ile Asp Ser Ser
 305 310 315 320
 Thr Ser Tyr Arg Leu Ile Thr Ser Leu Tyr Gly Cys Pro His Gly Val
 325 330 335
 Tyr Ala Met Ser Gln Asp Ile Pro Gly Leu Val Glu Thr Ser Thr Asn
 340 345 350
 Leu Ala Ser Val Lys Met Lys Pro Glu Asn Thr Ile Arg Ile Glu Thr
 355 360 365
 Ser Gln Arg Ser Ser Ile Leu Ser Ser Arg Asp Asp Ile Ala Thr Thr
 370 375 380
 Val Arg Ala Val Phe Arg Leu Ala Gly Ala Gln Val Asn Trp Gly Glu
 385 390 395 400
 Gly Tyr Pro Gly Trp Lys Pro Asn Pro Asp Ser Glu Ile Leu Lys Val
 405 410 415
 Ala Glu Glu Ser Tyr Lys Arg Leu Phe Gly Val Asp Ala Lys Val Lys
 420 425 430
 Ala Ile His Ala Gly Leu Glu Cys Gly Leu Phe Leu Asp Lys Tyr Pro
 435 440 445
 Ala Leu Asp Met Ile Ser Phe Gly Pro Thr Leu Thr Gly Val His Ser
 450 455 460
 Pro Asp Glu Arg Met His Ile Pro Ser Val Asp Lys Phe Trp Lys His
 465 470 475 480
 Leu Leu Asp Val Leu Ala His Ile Pro Ala Lys Asn
 485 490

<210> 6521

<211> 222

<212> PRT

<213> B.fragilis

<400> 6521

Thr Leu Val Gly Met Lys Phe Phe Ile Asp Thr Ala Asn Leu Asp Gln
 1 5 10 15
 Ile Arg Glu Ala His Asp Leu Gly Val Leu Asp Gly Val Thr Thr Asn
 20 25 30
 Pro Ser Leu Met Ala Lys Glu Gly Ile Lys Gly Val Glu Asn Gln Arg
 35 40 45
 Arg His Tyr Val Glu Ile Cys Asn Ile Val Gln Gly Asp Val Ser Ala
 50 55 60
 Glu Val Ile Ala Thr Asp Tyr Glu Gly Met Val Arg Glu Gly Lys Glu
 65 70 75 80
 Leu Ala Ala Leu Asn Pro His Ile Val Val Lys Val Pro Cys Ile Ala
 85 90 95
 Asp Gly Ile Lys Ala Ile Lys His Phe Ser Gly Lys Gly Ile Arg Thr
 100 105 110
 Asn Cys Thr Leu Val Phe Ser Thr Gly Gln Ala Leu Leu Ala Ala Lys
 115 120 125
 Ala Gly Ala Thr Tyr Val Ser Pro Phe Val Gly Arg Leu Asp Asp Ile
 130 135 140
 Cys Glu Asp Gly Val Gly Leu Val Ala Asn Ile Val Arg Met Tyr Arg
 145 150 155 160
 Phe Tyr Asn Tyr Pro Thr Gln Val Leu Ala Ser Ile Arg Ser Ser
 165 170 175
 Lys His Ile Met Glu Cys Val Glu Ala Gly Ala Asp Val Ala Thr Cys
 180 185 190
 Pro Leu Ser Ala Ile Lys Gly Leu Met Asn His Pro Leu Thr Asp Ala
 195 200 205
 Gly Leu Lys Lys Phe Leu Glu Asp Tyr Lys Lys Val Asn Glu
 210 215 220

<210> 6522
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 6522
 Ser Lys Asn Ile Ile Asp Met Lys Ala Ile Cys Asn Lys Gly Ile Cys
 1 5 10 15
 Val Phe Leu Phe Leu Ser Leu Leu Met Ser Ala Thr Met Val Asn Ala
 20 25 30
 Gln Arg Val Ile Thr Ala Ser Gly Lys Tyr Ile Thr Lys Asn Ile Lys
 35 40 45
 Val Thr Arg Phe Asp Gln Ile Tyr Leu Lys Gly Ser Pro Thr Ile Glu
 50 55 60
 Tyr Thr Gln Ser Pro Gly Ala Ser Glu Val Gln Ile Ala Gly Ser Asp
 65 70 75 80
 Asn Leu Val Asp Leu Val Glu Cys Arg Val Glu Gly Ser Thr Leu Ile
 85 90 95
 Val Asn Met Lys Ser Arg Thr Asn Ile Ser Tyr Gly Lys Glu Gly Arg
 100 105 110
 Leu Lys Ile Leu Val Ser Ser Pro Met Leu Lys Ser Ala Ser Leu Gln
 115 120 125
 Gly Ser Gly Asp Ile His Leu Gly Ser Leu Lys Val Glu Gly Leu Asp
 130 135 140
 Val Ser Leu Ile Gly Ser Gly Asp Ile Val Ala Glu Asn Ile Thr Cys
 145 150 155 160
 Asn Gly Asp Phe Ser Ala Leu Leu Gln Gly Ser Gly Asp Ile Asp Val
 165 170 175
 Lys Gly Gln Leu Arg Ala Lys Ser Val Asn Leu Asn Leu Gln Gly Ser
 180 185 190
 Gly Asp Leu Lys Val Ala Gly Val Thr Gly Ser Glu Ile Ser Ala Met
 195 200 205
 Leu Gln Gly Ser Gly Asp Leu Lys Val Gly Ser Thr Asn Ile Thr Ser
 210 215 220
 Thr Val Thr Ala Lys Leu Ser Gly Ser Gly Asp Met Asp Val Leu Asp
 225 230 235 240
 Ile Arg Ala Asn Ser Val Ser Gly Gln Leu Asp Gly Ser Gly Asp Met
 245 250 255
 Thr Leu Ser Gly Ser Ala Cys Asn Ala Thr Leu Val Leu Asn Arg Ser
 260 265 270
 Gly Glu Leu Ser Ala Arg Lys Leu Asp Ala Glu Asn Val Thr Ala His
 275 280 285
 Val Asn Gly Ser Gly Glu Ile Ser Cys Thr Ala Thr Lys Thr Leu Glu
 290 295 300
 Thr Asn Ile Gln Gly Ser Gly Glu Ile Ser Tyr Lys Gly Asn Pro Ser
 305 310 315 320
 Ile Arg Ser Thr Gly Lys Asn His Leu Asn Arg Leu
 325 330

<210> 6523
 <211> 502
 <212> PRT
 <213> B.fragilis

<400> 6523
 Leu Thr Val Leu Lys Trp Ser Gly Ser Phe Gln Pro Arg Gly Glu Asp
 1 5 10 15
 Tyr Glu Gln Ser Pro Tyr Tyr Leu Asn Leu Asn Gly Lys Trp Lys Phe

Pro Ser Val His Ser Leu
500

<210> 6524
<211> 117
<212> PRT
<213> B.fragilis

<400> 6524
Arg Gly Arg Met Lys Gln Leu Ile Pro Ala Leu Phe Ala Val Gly Ala
1 5 10 15
Val Met Ala Leu Ile Gly Ala Ala Val Phe Ile Thr Gly Trp Val Tyr
20 25 30
Ala Pro Tyr Ile Tyr Thr Ile Gly Ala Gly Phe Val Ala Leu Ala Gln
35 40 45
Val Asn Thr Pro Leu Arg Ala Lys Ser Lys Thr Leu Arg Arg Leu Arg
50 55 60
Ile Gln Gln Ile Phe Gly Ala Leu Ala Leu Ile Leu Thr Gly Ala Phe
65 70 75 80
Met Phe Thr Thr Arg Gly Asn Glu Trp Ile Ala Cys Leu Thr Ile Ala
85 90 95
Ala Ile Leu Glu Leu Tyr Thr Ala Phe Arg Ile Pro Gln Glu Glu Glu
100 105 110
Lys Glu Leu Ser Lys
115

<210> 6525
<211> 355
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (77)
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6525
Ala Phe Arg Thr Trp Trp Pro Phe Ile Arg Met Lys Arg Glu Ser Val
1 5 10 15
Leu Phe Gln Ala Ala Arg Lys His His Leu Asn Leu Leu Phe Pro Leu
20 25 30
Phe Arg Ala Asn Thr Ser Ala Ser Tyr Pro Val Ser Arg Phe Ile Ser
35 40 45
Arg Pro Ile Thr Val Leu Ser Lys Gly Phe Ala Lys Gly Phe Phe Cys
50 55 60
Ile Lys Lys Glu Thr Val Asp Lys Ile Gln Gln Phe Xaa Phe Asp Lys
65 70 75 80
Trp Ala Ile Glu Glu Arg Arg Tyr His Gln Leu Leu Ser Ile Leu Leu
85 90 95
Pro Gly Leu Lys Asn Gly Asn Leu Ala Ser Val Glu Gln Tyr Leu Gly
100 105 110
Ala Lys His Ile Glu Ala Tyr Ala Ala Val Pro Tyr Val Ala Asp Arg
115 120 125
Trp Glu Leu Asp Asp Ala Ser Leu Pro Gln Gly Ala Val Val Val Leu
130 135 140
Thr Cys Glu Gly Val Leu Tyr Ser Trp Glu Thr Tyr Arg Leu Glu Arg
145 150 155 160
Tyr Ile Ser Ala Ala Ile Ala Asn Asp Arg Ile Ser Gly Val Val Leu
165 170 175

Phe Val Asn Gly Pro Gly Gly Met Ile Thr Arg Val Asp Val Leu Glu
 180 185 190
 Lys Leu Ile Arg Gln Ser Pro Lys Pro Ile Val Ala Tyr Ile Thr Gly
 195 200 205
 Val Cys Ala Ser Ala His Phe Trp Phe Val Ser Ala Cys Ala Arg Arg
 210 215 220
 Phe Val Ser Ser Pro Met Asp Glu Ile Gly Ser Cys Gly Val Val Tyr
 225 230 235 240
 Thr Phe Gln Ser Phe Lys Glu Tyr Tyr Ala Gln Met Gly Ile Glu Ile
 245 250 255
 Glu Asp Ile Tyr Pro Asp Ser Ala Asp Leu Lys Asn Arg Ala Tyr Arg
 260 265 270
 Asp Lys Glu Glu Lys Gln Asp Asp Thr Leu Ile Lys Glu Asn Leu Ser
 275 280 285
 Phe Tyr His His Leu Phe Ala Gln Thr Ile Ala Arg Asn Leu Gly Val
 290 295 300
 Lys Tyr Asp Ala Gln Asp Pro Leu Phe Arg Gly Gln Thr Phe Phe Ala
 305 310 315 320
 Asp Thr Ala Leu Ala Lys Gly Tyr Val Asp Ala Tyr Gly Ser Leu Glu
 325 330 335
 Asp Ala Ile Leu Trp Val Ser Ala Gln Lys Thr Val Lys Arg Ala Asn
 340 345 350
 Lys Met Ile
 355

<210> 6526
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 6526
 Arg Lys Asn Ala Glu Tyr Leu Lys Ile Asn Lys Leu Tyr Asn Met Lys
 1 5 10 15
 Thr Ile Lys Arg Pro Tyr Thr Pro Val Cys Asp Leu Glu Leu Val Pro
 20 25 30
 Val Glu Cys Ile Ser Asp Phe Ala Val Ile Leu Pro Arg Ala Phe Ile
 35 40 45
 Ala Val Arg Asp Gly Ser Tyr Arg Ile Pro Val Ile Pro Gly Ser Phe
 50 55 60
 Thr Pro Gly Val Glu Ser Glu Gln Ala Asp Ser Gly Thr Ile Tyr Tyr
 65 70 75 80
 Asn Val Gly His Thr Phe Glu Val Ala Leu Thr Gly Pro Asp Ser Gln
 85 90 95
 Glu Leu Leu Ser Ala Met Ser Leu Gln Asp Leu Val Ala Ile Tyr Thr
 100 105 110
 Asn Glu Ala Gly Glu Arg Ile Val Ser Gly Ser Pro Gln Thr Pro Leu
 115 120 125
 Lys Leu Thr Phe Ser Ile Val Ser Gly Lys Tyr Gln Cys Lys Leu Ser
 130 135 140
 Gly Lys Gln Val Tyr Ile Glu Ala Tyr His Ser Pro Phe
 145 150 155

<210> 6527
 <211> 274
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE

<222> (251)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6527

```

Gln Asp Asp Leu Ile Leu Thr Ile Lys Val Asn Leu Phe Met Lys Asn
1           5           10           15
Tyr Phe Ala Ser Phe Ile Pro Ala Val Lys Ala Ile Leu Gly Ile Glu
          20           25           30
Ala Trp Ser Lys Asp Ala Asp Lys Lys Asp Ala Leu Leu Glu Glu Gln
          35           40           45
Lys Gln Lys Leu Lys Ala Leu Asn Phe Asn Asp Thr Phe Ile Asn Gly
          50           55           60
Phe Cys Glu Ala Leu Lys Asp Gly Phe Pro Glu Asp Ser Ser Arg Lys
65           70           75           80
Asp Gly Glu Ser Gly Thr Lys Gly Ser Gly Pro Asp Pro Asn Thr Ser
          85           90           95
Asn Ala Val Ile Gln Gly Leu Leu Ala Asp Met Thr Ala Lys Leu Val
          100          105          110
Thr Ala Gln Glu Glu Ile Ala Val Leu Thr Lys Glu Lys Gly Glu Leu
          115          120          125
Ser Gln Glu Val Ser Ala Lys Gln Thr Glu Ile Thr Gly Leu Gln Thr
          130          135          140
Lys Ile Gln Thr Leu Ser Gly Leu Ala Glu Gln Asp Gly Gly Lys Gly
145          150          155          160
Phe Gln His Ala Arg Leu Glu Pro Asp Ala Lys Asp Ile Val Met Asn
          165          170          175
Trp Asp Asp Glu Lys Gln Leu Gly Gly Leu Ser Gly Glu Met Phe Ala
          180          185          190
Met Gly Pro Pro Tyr Asn Gln Arg Leu Arg Ala Lys Met Leu Tyr Arg
          195          200          205
Lys Gly Leu Thr Arg Gln Val Pro Thr Ala Ser Ser Ile Asp Tyr Ser
          210          215          220
Arg Leu Lys Glu Asp Leu Gly Ala Phe Tyr Arg Ile Pro Trp Gln Glu
225          230          235          240
Arg Leu Gln Ser Phe Leu Thr Leu Leu Pro Xaa Ile Glu Ser Ile Phe
          245          250          255
Pro Ala Glu Phe Gly Ile Ser Gly Pro Gly Arg Ala Tyr Lys His Leu
          260          265          270
Gly Trp

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<210> 6528

<211> 168

<212> PRT

<213> B.fragilis

<400> 6528

```

Lys Lys His Gln Leu Met Ile Thr Thr Lys Ile Thr Val Glu Pro His
1           5           10           15
Leu Ala Gln Tyr Cys Tyr Ala Lys Tyr Ser Ser Asp Pro Glu Gly Ser
          20           25           30
Met Pro Val Arg Phe Ala Asp His Leu Asp Val Tyr His Leu Val Tyr
          35           40           45
Asn Leu Leu Glu Lys Arg Pro Val Asn Cys Pro Arg Asp Asn Gly Asn
          50           55           60
Leu Glu Ile Val Leu Pro Asp Arg Arg Gln Gly Asp Val Pro Gly Gly
65           70           75           80
Lys Ser Pro Glu Arg Phe Asn Tyr Leu Gly Gln Arg Ser Gln Gly Ile
          85           90           95

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Ile Asn Lys Lys Leu Lys Leu Met Met Arg Ala Glu Leu His Asp Phe
 100 105 110
 Ile Asp Glu Asn Lys His Arg Phe Gly Ile Asp Gln Leu Gln Ser Val
 115 120 125
 His Cys Phe Met Lys Lys Tyr Cys Ile Asp Ser Leu Ser Glu Asp Ala
 130 135 140
 Leu Leu Lys Asp Tyr Gln Arg Trp Arg Asp Arg Val Arg Arg Ser Ser
 145 150 155 160
 Leu Lys Arg Pro Tyr Lys Lys Lys
 165

<210> 6529
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 6529
 Lys Lys Met Glu Val Glu Leu Val Lys Thr Thr Leu His Ala Val Leu
 1 5 10 15
 Ser Pro Ser Gln Leu Gln Lys Pro Cys Val Arg Lys Lys Glu Leu Thr
 20 25 30
 Pro Leu Gln Ile Ser Leu Lys Thr Gly Ser Thr Ala Ser Gln Leu Val
 35 40 45
 Asp Glu Trp Gly Gly Thr Ile Ala Gln Leu Asn Met Gly Ala Pro Leu
 50 55 60
 Tyr Asp Val Ala Ala Asn Gly Glu Ile Pro Thr Leu Ala Asp Val Gly
 65 70 75 80
 Val Val Phe Gly Asn Ser Thr Ser Val Arg Ile Ile Thr Ser His Leu
 85 90 95
 Glu Ser Val Leu Lys Tyr Ala Gly Val Glu Leu Ser Arg Glu Gln Met
 100 105 110
 Ala Glu Thr Ala Leu Ala Ile Leu Ser Gly Tyr Trp Phe Leu Asn Leu
 115 120 125
 Ala Glu Leu Cys Ile Phe Phe Thr Arg Leu Lys Asn Gly Ser Cys Gly
 130 135 140
 Gln Leu Val Trp Gly Lys Ser Leu Asn Asn Gln Ala Val Met Val Ala
 145 150 155 160
 Leu Ser Asp Phe Cys Lys Glu Arg Arg Glu Val Ile Ile Arg Lys Glu
 165 170 175
 Thr Glu Arg Met Gly Pro Gly Leu Trp Lys Lys Ala Phe Pro Glu Arg
 180 185 190
 Arg Ile Leu Pro Pro Val Leu Cys Trp Ala Tyr Arg Val
 195 200 205

<210> 6530
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 6530
 Lys Ser Arg Arg Asn Leu Pro Arg Leu Cys Val Arg Leu Arg Thr Pro
 1 5 10 15
 Tyr Leu Ile Cys Leu Leu Cys Asn Ile Tyr Arg Asp Lys Gly Tyr Tyr
 20 25 30
 Ile Glu Trp Asp Glu Asp Leu Pro Phe Val Val Ala Asp Thr Ile Gly
 35 40 45
 Thr Thr Glu Gly Ala Val Glu Glu Val Val Lys Lys Ala Val Gln Val
 50 55 60
 Gly Phe Phe Asp Lys Ser Leu Phe Asp Gln Tyr Arg Ile Leu Thr Ser

```

65              70              75              80
Asn Gly Ile Gln Asn Arg Phe Lys Ser Ala Val Ser Arg Arg Glu Gly
      85              90              95
Phe Glu Tyr Ile Pro Glu Tyr Leu Val Ser Val Cys Asn Asn Pro Ile
      100              105              110
Gln Ser Asn Phe Cys Ile Gln Lys Pro Ser Ser Thr Glu Phe Leu Tyr
      115              120              125
Ala Glu Thr Gln Pro Asn Arg Val Ser Ala Cys Lys Ser Thr Gln Ser
      130              135              140
Lys Val Lys Glu Arg Ile Ser Pro Pro Pro His Ala Arg Glu Gly Gly
145              150              155              160
Ile Ser Gly Ile Arg Leu Phe Ser Asp Lys Ser Leu Thr Glu Cys Tyr
      165              170              175
Gly Glu Leu Lys Ala Asn Ile Pro Trp Met Glu Gln Phe Cys Met Asn
      180              185              190
Ile Arg Leu Asp Tyr Pro Asp Phe Thr Pro Glu Leu Phe Tyr Gly Phe
      195              200              205
Leu Asp Arg Phe Phe Arg Lys Leu Gln Asn Glu Gly Glu Ile Val Lys
      210              215              220
Ser Pro Lys Asp Ala Met Ser His Phe Ala Asn Trp Leu Asn Ile Glu
225              230              235              240
Leu Glu Lys Leu Lys Lys Asp Gly Ser Arg Thr Ser Lys Asn His Pro
      245              250              255
Ala Cys Gly Ser Glu Pro Val Ser Val Thr Glu Thr Leu Cys Pro Lys
      260              265              270
Glu Gly Ala Asp Ala Ser Pro Asp Leu Val Lys Asn Trp Ile Asp Gly
      275              280              285
Leu Ser Ile Gly Gly
      290

```

<210> 6531

<211> 268

<212> PRT

<213> B.fragilis

<400> 6531

```

Lys Asn Asn Ile Pro Met Ile Val Ala Trp Phe Ser Cys Gly Val Thr
1      5      10
Ser Ala Val Ala Cys Lys Ile Ala Leu Ser Leu Tyr Asp Asp Val Gln
      20      25      30
Leu Tyr Tyr Ile Glu Thr Gly Ser Gly His Pro Asp Asn Ala Arg Phe
      35      40      45
Leu Ser Asp Cys Glu Arg Trp Tyr Asp Gln Pro Ile His Ile Ile Arg
      50      55      60
Ser Asp Lys Tyr Thr Cys Val Ala Asp Val Leu Arg Lys Gly Phe Ile
65              70              75              80
Asn Gly Ala His Gly Ala Ala Cys Thr Leu Glu Leu Lys Lys Lys Val
      85              90              95
Arg Tyr Lys Leu Glu Lys Glu Leu Gly Ser Trp Asp Gly Gln Val Trp
      100              105              110
Gly Phe Asp Tyr Glu Pro Lys Glu Ile Asn Arg Ala Ile Arg Leu Lys
      115              120              125
Gln Gln Tyr Pro Asp Thr Lys Pro Leu Phe Pro Leu Ile Glu Lys Gln
      130              135              140
Ile Thr Lys Pro Asp Ala Met Gly Ile Leu Trp Lys Ala Gly Ile Glu
145              150              155              160
Ile Pro Ala Met Tyr Lys Met Gly Tyr Asn Asn Asn Cys Ile Gly
      165              170              175
Cys Val Lys Gly Gly Met Gly Tyr Trp Asn Lys Ile Arg Lys Asp Phe

```



```

          20          25          30
Pro Phe Ser Leu Phe Leu Ser Asn Lys Leu Lys Glu Ala Leu Ile Ile
      35          40          45
Asn Ile Leu Phe Phe Tyr His His Ile Pro Pro Thr Glu Ser Leu
      50          55          60

```

<210> 6535
 <211> 80
 <212> PRT
 <213> B.fragilis

```

<400> 6535
Ile Lys Gln Ser Ile Lys Val Phe Tyr His Gln Ala Thr Thr Tyr Leu
1          5          10          15
Asn Lys Ile Thr Asp Cys Asn Asn Ser Phe Pro Ala Tyr Phe Pro Cys
      20          25          30
Ile Ser Pro Leu Phe His Ile Pro Leu Ser Lys Ile Lys Val Leu Lys
      35          40          45
His Pro Asp Val Ile Tyr Gln Asn Thr Arg Met Phe Tyr Ile Arg Thr
      50          55          60
Ser Gly Cys Tyr Leu Leu Lys His Pro Asp Val Phe Arg His Asn Leu
      65          70          75          80

```

<210> 6536
 <211> 64
 <212> PRT
 <213> B.fragilis

```

<400> 6536
Gln Phe Leu Pro Cys Leu Lys Leu Asn Phe Pro Pro Ser Leu Ser Lys
1          5          10          15
Lys Cys Arg Lys Leu Ala Ser Ser Lys Asn Asn Glu Tyr Ser Gln Phe
      20          25          30
Lys Lys Gln Arg Tyr Glu Lys Phe Lys Leu Gln Lys Arg Phe Asn Trp
      35          40          45
Ser Ser Gly Arg Ala Thr Ser Leu Cys Ile Gln Thr Asn Asn Arg Pro
      50          55          60

```

<210> 6537
 <211> 488
 <212> PRT
 <213> B.fragilis

```

<400> 6537
Val Tyr Asn Thr Lys Gly Asn Lys Ile Gly Phe Tyr Met Ala Thr Thr
1          5          10          15
Asp Phe Ile Ala Ala Ile Glu Leu Gly Ser Ser Lys Ile Ala Gly Ile
      20          25          30
Ala Gly Lys Lys Asn Ser Asp Gly Ser Ile Gln Val Leu Ala Tyr Ala
      35          40          45
Arg Glu Asp Ser Ser Ser Phe Ile Arg Lys Gly Val Ile Tyr Asn Leu
      50          55          60
Asp Lys Thr Ala Gln Ser Leu Thr Ser Ile Ile Asn Lys Leu Glu Gly
      65          70          75          80
Ala Leu Asn Asn Ser Ile Ala Lys Ile Tyr Val Gly Ile Gly Gly Gln
      85          90          95
Ser Leu Arg Thr Val Arg Asn Val Val Ser Arg Asp Leu Glu Glu Glu
      100          105          110
Thr Ile Ile Ser Gln Glu Leu Val Asp Ser Ile Cys Asp Glu Asn Leu

```

```

      115              120              125
Glu Ile Pro Leu Ile Asp Met Asp Ile Leu Asp Val Ala Pro Gln Glu
130              135              140
Tyr Lys Ile Gly Asn Asn Leu Gln Ala Asp Pro Val Gly Val Ala Gly
145              150              155              160
Ser His Ile Glu Gly Arg Phe Leu Asn Ile Val Ala Arg Ala Ser Leu
      165              170              175
Lys Lys Asn Leu Glu Arg Cys Phe Glu Gln Ala Lys Ile Glu Ile Ala
      180              185              190
Asp Leu Leu Ile Ser Pro Leu Val Thr Ala Asp Ala Val Leu Thr Glu
      195              200              205
Ser Glu Arg Arg Ser Gly Cys Ala Leu Ile Asp Phe Gly Ala Asp Thr
      210              215              220
Ser Thr Ile Ser Ile Tyr Lys Asn Asn Ile Leu Arg Phe Leu Thr Val
225              230              235              240
Leu Pro Leu Gly Gly Asn Ser Ile Thr His Asp Leu Val Ser Leu Gln
      245              250              255
Met Glu Glu Glu Glu Ala Glu Arg Leu Lys Ile Arg Tyr Gly Asn Ala
      260              265              270
Phe Tyr Glu Glu Glu Glu Gly Glu Glu Pro Ala Thr Cys Gln Leu Glu
      275              280              285
Asp Gly Asn Arg Thr Ile Glu Leu Gly Lys Leu Asn Asn Ile Ile Glu
      290              295              300
Ala Arg Thr Glu Glu Ile Ala Asn Val Trp Asn Gln Ile Gln Leu
305              310              315              320
Ser Gly Tyr Asp Asp Lys Leu Leu Ala Gly Leu Ile Ile Thr Gly Gly
      325              330              335
Ala Ala Asn Leu Lys Asp Leu Asp Glu Val Leu Arg Lys Arg Ser Lys
      340              345              350
Ile Glu Lys Val Arg Asn Ala Arg Phe Val Arg Asn Thr Ile His Ala
      355              360              365
Asp Glu Asp Val Val Lys Lys Asp Gly Thr Gln Asn Thr Leu Phe Gly
      370              375              380
Leu Leu Ile Ala Gly Asn Glu Asn Cys Cys Leu Leu Glu Thr Pro Ala
385              390              395              400
Pro Gln Pro His Ile Gln Pro Gln Pro Gln Pro Glu Pro Val Asn Met
      405              410              415
Phe Glu Glu Asp Glu Ser Leu Lys Glu Gln Glu Ala Ala Arg Ala
      420              425              430
Ala Lys Lys Lys Lys Glu Glu Glu Lys Lys Arg Lys Glu Glu Glu
      435              440              445
Lys Gln Arg Lys Leu Glu Glu Lys Lys Arg Arg Glu Glu Glu Arg Arg
      450              455              460
Asn Lys Pro Asn Trp Phe Lys Ser Thr Phe Asp Lys Leu Ser Asn Glu
465              470              475              480
Ile Phe Ser Asp Glu Asp Met Lys
      485

```

<210> 6538

<211> 489

<212> PRT

<213> B.fragilis

<400> 6538

```

Lys His Cys Thr Pro Gly Phe Thr Gly Phe Cys Cys Arg Tyr Cys Lys
1              5              10              15
Arg Ser Tyr Lys Ile Ser Ala Thr Ile Met Asn Ile Glu Thr Ile Gln
      20              25              30
Ser Val Tyr Phe Val Gly Ala Gly Gly Ile Gly Met Ser Ala Leu Val

```


<211> 254
 <212> PRT
 <213> B.fragilis

<400> 6539

```

Ile Val Lys Thr Ile Asn Phe Leu Met Ile Lys Arg Ile Leu Leu Thr
1           5           10           15
Ile Val Met Leu Leu Leu Ile Ala Tyr Leu Val Ala Ala Val Thr Val
           20           25           30
Phe Asn Asp Lys Pro Ala His Gln Val Cys Arg Asp Met Glu Leu Val
           35           40           45
Ile Lys Asp Thr Leu Asn Ala Gly Phe Val Thr Lys Asn Glu Val Ala
           50           55           60
Ala Ile Leu Gln Lys Lys Gly Ile Tyr Pro Val Gly Lys Lys Met Asp
65           70           75           80
Arg Val His Thr Lys Thr Leu Glu Lys Glu Leu Asp Lys His Pro Leu
           85           90           95
Ile Asn Glu Ala Gln Cys Tyr Lys Thr Pro Asn Gly Lys Ile Cys Val
           100          105          110
Glu Val Thr Gln Arg Val Pro Ile Leu His Ile Met Ser Ser Asn Gly
           115          120          125
Glu Asn Tyr Tyr Leu Asp Asn Lys Gly Lys Met Met Pro Pro Asp Ala
130          135          140
Lys Cys Val Ala His Arg Ala Ile Val Thr Gly Asn Val Glu Lys Ser
145          150          155          160
Phe Ala Met Lys Asp Leu Tyr Lys Phe Gly Val Phe Leu Gln Asn Asn
           165          170          175
Pro Phe Trp Glu Ala Gln Ile Val Gln Ile Asn Val Leu Pro Gly Lys
           180          185          190
Glu Ile Glu Leu Val Pro Arg Val Gly Asn His Ile Ile Tyr Leu Gly
           195          200          205
Lys Leu Glu His Phe Glu Asp Lys Leu Lys Arg Leu Lys Thr Phe Tyr
210          215          220
Glu Lys Gly Leu Asn Gln Val Gly Trp Asn Lys Tyr Ser Arg Ile Ser
225          230          235          240
Leu Glu Phe Gly Asn Gln Ile Ile Cys Thr Lys Lys Lys Gln
           245          250

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<210> 6540
 <211> 669
 <212> PRT
 <213> B.fragilis

<400> 6540

```

Leu Arg Tyr Phe His Tyr Ile Cys Ser Val Ile Ile Ile Arg Asn Gln
1           5           10           15
Ile Met Ser Glu Glu Gln Asn Pro Thr Asn Asn Gly Ser Tyr Ser Ala
           20           25           30
Asp Ser Ile Gln Val Leu Glu Gly Leu Glu Ala Val Arg Lys Arg Pro
           35           40           45
Ala Met Tyr Ile Gly Asp Ile Ser Val Lys Gly Leu His His Leu Val
           50           55           60
Tyr Glu Ile Val Asp Asn Ser Ile Asp Glu Ala Leu Ala Gly Tyr Cys
65           70           75           80
Asp His Ile Glu Val Thr Ile Asn Glu Asp Asn Ser Ile Thr Val Gln
           85           90           95
Asp Asn Gly Arg Gly Ile Pro Val Asp Phe His Glu Lys Glu Gln Lys
           100          105          110
Ser Ala Leu Glu Val Ala Met Thr Val Leu His Ala Gly Gly Lys Phe

```

115	120	125
Asp Lys Gly Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Met		
130	135	140
Ser Cys Val Asn Ala Leu Ser Thr His Met Thr Thr Gln Val Phe Arg		
145	150	155
Asn Gly Lys Ile Tyr Gln Gln Glu Tyr Glu Ile Gly Lys Pro Leu Tyr		
165	170	175
Pro Val Lys Glu Val Gly Ile Ala Asp His Thr Gly Thr Lys Gln Gln		
180	185	190
Phe Trp Pro Asp Asp Ser Ile Phe Thr Glu Thr Ile Tyr Asp Tyr Lys		
195	200	205
Ile Leu Ala Ser Arg Leu Arg Glu Leu Ala Tyr Leu Asn Ala Gly Leu		
210	215	220
Arg Ile Ser Leu Thr Asp Arg Arg Val Val Asn Glu Asp Gly Ser Phe		
225	230	235
Lys His Glu Thr Phe Tyr Ser Glu Glu Gly Leu Arg Glu Phe Val Arg		
245	250	255
Phe Ile Glu Ser Ser Arg Glu His Leu Ile Asn Asp Val Ile Tyr Leu		
260	265	270
Asn Thr Glu Lys Gln Asn Ile Pro Ile Glu Val Ala Ile Met Tyr Asn		
275	280	285
Thr Gly Phe Ser Glu Asn Ile His Ser Tyr Val Asn Asn Ile Asn Thr		
290	295	300
Ile Glu Gly Gly Thr His Leu Ala Gly Phe Arg Arg Ala Leu Thr Arg		
305	310	315
Thr Leu Lys Lys Tyr Ala Glu Asp Ser Lys Met Leu Glu Lys Val Lys		
325	330	335
Val Glu Ile Ser Gly Asp Asp Phe Arg Glu Gly Leu Thr Ala Val Ile		
340	345	350
Ser Val Lys Val Ala Glu Pro Gln Phe Glu Gly Gln Thr Lys Thr Lys		
355	360	365
Leu Gly Asn Asn Glu Val Met Gly Ala Val Asp Gln Ala Val Gly Glu		
370	375	380
Val Leu Asn Tyr Tyr Leu Glu Glu His Pro Lys Glu Ala Lys Ala Ile		
385	390	395
Val Asp Lys Val Ile Leu Ala Ala Thr Ala Arg His Ala Ala Arg Lys		
405	410	415
Ala Arg Glu Met Val Gln Arg Lys Ser Pro Met Ser Gly Gly Gly Leu		
420	425	430
Pro Gly Lys Leu Ala Asp Cys Ser Asp Lys Asp Pro Gln Lys Cys Glu		
435	440	445
Leu Phe Leu Val Glu Gly Asp Ser Ala Gly Gly Thr Ala Lys Gln Gly		
450	455	460
Arg Asn Arg Ala Phe Gln Ala Ile Leu Pro Leu Arg Gly Lys Ile Leu		
465	470	475
Asn Val Glu Lys Ala Met Tyr His Lys Ala Leu Glu Ser Glu Glu Ile		
485	490	495
Arg Asn Ile Tyr Thr Ala Leu Gly Val Thr Ile Gly Thr Glu Glu Asp		
500	505	510
Ser Lys Ala Ala Asn Ile Asp Lys Leu Arg Tyr His Lys Ile Ile Ile		
515	520	525
Met Thr Asp Ala Asp Val Asp Gly Ser His Ile Asp Thr Leu Ile Met		
530	535	540
Thr Phe Phe Phe Arg Tyr Met Pro Gln Ile Ile Gln Asn Gly Tyr Leu		
545	550	555
Tyr Ile Ala Thr Pro Pro Leu Tyr Leu Cys Lys Lys Gly Lys Ile Glu		
565	570	575
Glu Tyr Cys Trp Thr Asp Ala Gln Arg Gln Lys Phe Ile Asp Thr Tyr		
580	585	590

115 120 125
 130 135 140
 145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590

Gly Gly Gly Ser Glu Asn Ala Ile His Thr Gln Arg Tyr Lys Gly Leu
 595 600 605
 Gly Glu Met Asn Ala Gln Gln Leu Trp Glu Thr Thr Met Asp Pro Glu
 610 615 620
 Asn Arg Met Leu Lys Gln Val Asn Ile Asp Asn Ala Ala Glu Ala Asp
 625 630 635 640
 Tyr Ile Phe Ser Met Leu Met Gly Glu Asp Val Gly Pro Arg Arg Glu
 645 650 655
 Phe Ile Glu Glu Asn Ala Thr Tyr Ala Asn Ile Asp Ala
 660 665

<210> 6541
 <211> 435
 <212> PRT
 <213> B.fragilis

<400> 6541
 Lys Leu Lys Ala Val Asp Leu Leu Lys Asn Ile Phe Lys Gly Asp Lys
 1 5 10 15
 Val Ile Trp Ile Ile Phe Leu Cys Leu Cys Leu Ile Ser Ile Ile Glu
 20 25 30
 Val Phe Ser Ala Ala Ser Thr Leu Thr Tyr Lys Ser Gly Asp His Trp
 35 40 45
 Gly Pro Ile Thr Gln His Ser Ile Ile Leu Met Val Gly Ala Val Val
 50 55 60
 Val Val Leu Met His Asn Ile Pro Tyr Lys Trp Phe Gln Val Phe Pro
 65 70 75 80
 Val Phe Leu Tyr Pro Ile Ser Val Val Leu Leu Ala Phe Val Thr Leu
 85 90 95
 Met Gly Val Ile Thr Gly Asp Arg Val Asn Gly Ala Ala Arg Trp Met
 100 105 110
 Ser Phe Met Gly Leu Gln Phe Gln Pro Ser Glu Leu Ala Lys Met Ala
 115 120 125
 Val Ile Ile Ala Val Ser Phe Ile Leu Ser Lys Lys Gln Asp Asp Glu
 130 135 140
 Gly Ala Asn Pro Lys Ala Phe Lys Tyr Ile Met Ile Leu Thr Gly Leu
 145 150 155 160
 Val Cys Met Leu Ile Ala Pro Glu Asn Leu Ser Thr Ala Met Leu Leu
 165 170 175
 Phe Gly Val Val Val Leu Met Met Phe Ile Gly Arg Val Ala Phe Lys
 180 185 190
 Lys Leu Ala Met Leu Leu Gly Gly Leu Ala Leu Val Gly Cys Leu Gly
 195 200 205
 Ala Val Phe Leu Leu Ala Ile Pro Lys Asp Thr Asp Ile Pro Phe Leu
 210 215 220
 His Arg Phe Asp Thr Trp Lys Ser Arg Ile Thr Asn Phe Thr Glu Lys
 225 230 235 240
 Glu Glu Val Pro Ala Ala Lys Phe Asp Ile Asp Lys Asp Ala Gln Ile
 245 250 255
 Ala His Ala Arg Ile Ala Ile Ala Thr Ser Asn Val Ile Gly Lys Ala
 260 265 270
 Pro Gly Asn Ser Ile Gln Arg Asp Phe Leu Ser Gln Ala Phe Ser Asp
 275 280 285
 Phe Ile Phe Ala Ile Ile Ile Glu Glu Leu Gly Leu Val Gly Gly Ala
 290 295 300
 Phe Val Val Ile Leu Tyr Ile Trp Leu Leu Val Arg Thr Gly Arg Ile
 305 310 315 320
 Ala Gln Lys Cys Glu Arg Thr Phe Pro Ala Phe Leu Val Met Gly Ile
 325 330 335

Ala Leu Met Leu Val Ser Gln Ala Ile Leu Asn Met Met Val Ala Val
 340 345 350
 Gly Leu Phe Pro Val Thr Gly Gln Pro Leu Pro Leu Ile Ser Lys Gly
 355 360 365
 Gly Thr Ser Thr Leu Ile Asn Cys Ala Tyr Ile Gly Met Ile Leu Ser
 370 375 380
 Val Ser Arg Tyr Thr Ala Tyr Leu Glu Glu Lys Lys Glu Asn Pro Ala
 385 390 395 400
 Pro Leu Leu Thr Gln Ser Glu Gly Asn Glu Ala Ile Ala Ser Glu Ala
 405 410 415
 Gln Thr Ala Ala Glu Pro Thr Ala Glu Val Leu Asn Ser Asp Ala Lys
 420 425 430
 Phe Glu Glu
 435

<210> 6542
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 6542
 Lys Arg Leu Ala Arg Val Arg Gly Ile Asp Phe Ile His Asp Ser Lys
 1 5 10 15
 Ala Pro Asn Val Asn Ser Cys Trp Tyr Ala Leu Gln Ser Met Thr Thr
 20 25 30
 Lys Thr Val Leu Ile Leu Gly Gly Lys Asp Lys Gly Asn Asp Tyr Thr
 35 40 45
 Glu Ile Glu Glu Leu Val Arg Glu Lys Cys Ser Ala Leu Val Tyr Leu
 50 55 60
 Gly Leu His Asn Glu Lys Leu His Glu Phe Phe Asp Arg Leu Gly Leu
 65 70 75 80
 Pro Val Ala Glu Val Gln Thr Gly Met Lys Asp Ala Val Glu Ala Ala
 85 90 95
 Tyr Lys Leu Ala Lys Lys Gly Glu Thr Val Leu Leu Ser Pro Cys Cys
 100 105 110
 Ala Ser Phe Asp Leu Phe Lys Ser Tyr Glu Asp Arg Gly Glu Gln Phe
 115 120 125
 Lys Lys Tyr Val Arg Glu Leu
 130 135

<210> 6543
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 6543
 Val Gly His Leu His Gln Gln Ala Cys Leu Arg Asn Lys Ile Tyr Asn
 1 5 10 15
 Arg Leu Tyr Ile Ile Leu Glu Ala Gly Leu Phe Ser Ser Ala Phe Tyr
 20 25 30
 Ala Phe Asn Tyr Pro Val Gly Phe Ile Phe Asn Ser Ser Phe Phe Thr
 35 40 45
 Leu His Ser Ser Leu Thr Gln Ile Phe Ser Leu Tyr Leu Leu Cys Tyr
 50 55 60
 Tyr Asn
 65

<210> 6544
 <211> 181

<212> PRT
 <213> B.fragilis

<400> 6544

Gln Trp Ser Tyr His Ile Leu Ile Lys Val Lys Tyr Arg Ile Ile Asn
 1 5 10 15
 Pro Asp Leu Pro Ile Val Asn Arg Lys Ser Leu Asn His Asn Asn Ile
 20 25 30
 Met Asp Leu Phe Glu Arg Val Ser Glu Asp Ile Lys Asn Ala Met Lys
 35 40 45
 Ala Lys Asp Lys Val Ala Leu Glu Thr Leu Arg Asn Val Lys Lys Phe
 50 55 60
 Phe Leu Glu Ala Lys Thr Ala Pro Gly Ala Asn Asp Thr Leu Thr Asp
 65 70 75 80
 Ala Asp Ala Leu Lys Ile Val Gln Lys Leu Val Lys Gln Gly Lys Asp
 85 90 95
 Ala Ala Glu Ile Tyr Ile Gly Gln Gly Arg Gln Asp Leu Ala Asp Ala
 100 105 110
 Glu Leu Ala Gln Val Gln Val Met Glu Thr Tyr Leu Pro Lys Gln Met
 115 120 125
 Ser Ala Glu Glu Leu Glu Ala Ala Leu Lys Glu Ile Ile Ala Glu Val
 130 135 140
 Gly Ala Thr Ser Gly Lys Asp Met Gly Lys Val Met Gly Val Ala Ser
 145 150 155 160
 Lys Lys Leu Ala Gly Leu Ala Glu Gly Arg Ala Ile Ser Ala Lys Val
 165 170 175
 Lys Glu Leu Leu Gly
 180

<210> 6545
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 6545

Arg Thr Ser Tyr Thr Arg Tyr Phe Lys Ala Met Cys Gln Ser Val Val
 1 5 10 15
 Asn Lys Asn Thr Ala Arg Lys Gly Lys Asn Leu Gly Phe Val Leu Lys
 20 25 30
 Pro Ser Glu Arg Gly Gly Glu Asp Lys Ala Val Ile Val Pro Leu Lys
 35 40 45
 Leu Arg Thr Val Phe Leu Thr Leu Phe Val Lys Leu Phe His Ala Glu
 50 55 60
 Thr Leu Ser
 65

<210> 6546
 <211> 343
 <212> PRT
 <213> B.fragilis

<400> 6546

Asp Arg Asn Leu Gly Glu Arg Thr Cys Gly Glu Thr Leu Tyr Gly Thr
 1 5 10 15
 Arg Ser Ile Arg Ser Ser Leu Gly Arg Asp Tyr Glu Arg Arg Thr Glu
 20 25 30
 Asn Asn Glu Gln Arg Ala Lys Met Lys Glu Glu Glu Thr Thr Tyr His
 35 40 45
 Val Pro Val Leu Leu Lys Glu Ser Val Asp Ala Met Asn Ile Ser Pro


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50          55          60
Asp Gly Thr Tyr Val Asp Val Thr Phe Gly Gly Gly His Ser Arg
65          70          75          80
Glu Ile Leu Ser Arg Leu Gly Asp Gly Gly Arg Leu Leu Gly Phe Asp
85          90          95
Gln Asp Glu Asp Ala Glu Arg Asn Ile Val Asn Asp Pro His Phe Thr
100         105         110
Phe Val Arg Ser Asn Phe Arg Tyr Leu His Asn Phe Leu Arg Tyr His
115         120         125
Asp Ile Gly Glu Val Asp Ala Ile Leu Ala Asp Leu Gly Val Ser Ser
130         135         140
His His Phe Asp Asp Ser Glu Arg Gly Phe Ser Phe Arg Phe Asp Gly
145         150         155         160
Lys Leu Asp Met Arg Met Asn Lys Arg Ala Gly Ile Thr Ala Ala Asp
165         170         175
Val Val Asn Thr Tyr Glu Glu Glu Arg Leu Ala Asp Ile Phe Tyr Leu
180         185         190
Tyr Gly Glu Leu Lys Asn Ser Arg Lys Leu Ala Ser Val Ile Val Lys
195         200         205
Ala Arg Thr Gly Gln Lys Ile Glu Thr Ile Gly Glu Phe Leu Glu Ile
210         215         220
Ile Lys Pro Leu Phe Gly Arg Glu Arg Glu Lys Lys Glu Leu Ala Lys
225         230         235         240
Val Phe Gln Ala Leu Arg Ile Glu Val Asn Gln Glu Met Glu Ala Leu
245         250         255
Lys Glu Met Leu Met Ala Ala Thr Glu Ala Leu Lys Pro Gly Gly Arg
260         265         270
Leu Val Val Ile Thr Tyr His Ser Leu Glu Asp Arg Met Val Lys Asn
275         280         285
Ile Met Lys Thr Gly Asn Val Glu Gly Lys Ala Thr Gln Asp Phe Phe
290         295         300
Gly Asn Leu Gln Thr Pro Phe Arg Leu Val Asn Asn Lys Val Ile Val
305         310         315         320
Pro Asp Glu Asp Glu Ile Thr Arg Asn Pro Arg Ser Arg Ser Ala Lys
325         330         335
Leu Arg Ile Ala Glu Lys Lys
340

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<210> 6547

<211> 180

<212> PRT

<213> B.fragilis

<400> 6547

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Ser Gln Asn Leu Ile Ile Ile Asn Gly Phe Gly Lys Asp Thr Val Ile
1          5          10          15
Gly Pro Glu Leu Leu Phe Gly Ser Cys Val Val Arg Tyr Ser Tyr Phe
20         25         30
Phe Asn Gly Ile Lys Arg Phe Thr Asp Phe Ile Phe Leu Leu Ile Asp
35         40         45
Phe Thr Val Ala Glu Tyr Leu Gly Ser His Val Cys Arg Gln Cys Ile
50         55         60
His Thr Gly His Thr Tyr Thr Val Lys Thr Ser Gly Tyr Phe Val Arg
65         70         75         80
Thr Phe Ile Glu Leu Thr Ser Gly Met Gln Tyr Gly His Gly Asn Phe
85         90         95
Glu Gly Arg Phe Leu Leu Phe Phe Val Glu Ile Tyr Arg Asn Thr Thr
100        105        110
Ser Ile Ile Leu Tyr Gly Asp Arg Val Val Phe Val Asp Ser Tyr Phe

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115	120	125
Asp Met Val Ala Ile Thr Gly Gln Cys Phe Val Asp Arg Val Val Asp		
130	135	140
Asn Phe Ile Tyr Gln Val Met Lys Ser Leu Tyr Ala Asp Val Thr Asn		
145	150	155
Val His Arg Arg Ala Phe Ser Asn Cys Phe Lys Ser Phe Gln Tyr Leu		
165	170	175
Asp Thr Ile Cys		
180		

<210> 6548
 <211> 442
 <212> PRT
 <213> B.fragilis

<400> 6548

Phe Ile Ile Gln Tyr Asn Met Asp Glu Ile Val Gln Phe Asp Phe Pro		
1	5	10
Thr Asp Ser Pro Lys Ile Ile Lys Val Ile Gly Val Gly Gly Gly Gly		
20	25	30
Gly Asn Ala Val Asn His Met Tyr Arg Glu Gly Ile His Asp Val Thr		
35	40	45
Phe Val Leu Cys Asn Thr Asp Asn Gln Ala Leu Ala Glu Ser Pro Val		
50	55	60
Pro Val Lys Leu Gln Leu Gly Arg Ser Ile Thr Gln Gly Leu Gly Ala		
65	70	75
Gly Asn Arg Pro Glu Arg Ala Arg Asp Ala Ala Glu Glu Ser Ile Glu		
85	90	95
Asp Ile Lys Thr Leu Leu Asn Asp Gly Thr Lys Met Val Phe Ile Thr		
100	105	110
Ala Gly Met Gly Gly Gly Thr Gly Thr Gly Ala Ala Pro Val Ile Ala		
115	120	125
Arg Ile Ala Lys Glu Met Asp Ile Leu Thr Val Gly Ile Val Thr Ile		
130	135	140
Pro Phe Ile Phe Glu Gly Glu Lys Lys Ile Ile Gln Ala Leu Asp Gly		
145	150	155
Val Glu Arg Ile Ala Gln His Val Asp Ala Leu Leu Val Ile Asn Asn		
165	170	175
Glu Arg Leu Arg Glu Ile Tyr Ser Asp Leu Thr Phe Met Asn Ala Phe		
180	185	190
Gly Lys Ala Asp Asp Thr Leu Ser Ile Ala Ala Lys Ser Ile Ala Glu		
195	200	205
Ile Ile Thr Met Arg Gly Thr Val Asn Leu Asp Phe Ala Asp Val Lys		
210	215	220
Thr Ile Leu Lys Asp Gly Gly Val Ala Ile Met Ser Thr Gly Phe Gly		
225	230	235
Glu Gly Glu Asn Arg Val Thr Lys Ala Ile Asp Asp Ala Leu His Ser		
245	250	255
Pro Leu Leu Asn Asn Asp Ile Phe Asn Ala Lys Lys Val Met Leu		
260	265	270
Asn Val Ser Phe Cys Pro Ala Ser Glu Leu Met Met Glu Glu Met Asn		
275	280	285
Glu Val His Glu Phe Met Ser Lys Phe Arg Glu Gly Val Glu Val Ile		
290	295	300
Trp Gly Val Ala Met Asp Asn Ser Leu Asp Thr Lys Val Lys Ile Thr		
305	310	315
Val Leu Ala Thr Gly Phe Gly Val Glu Asp Val Pro Gly Met Asp Asp		
325	330	335
Leu His Glu Lys Arg Ser Gln Glu Glu Glu Arg Gln Leu Gln Leu		

			340					345					350				
Glu	Glu	Glu	Lys	Glu	Lys	Asn	Lys	Glu	Arg	Ile	Arg	Lys	Ala	Tyr	Gly		
			355					360					365				
Glu	Ser	Ala	Ser	Gly	Ile	Gly	Thr	Arg	Asn	Leu	Arg	Lys	Arg	Arg	His		
			370					375					380				
Ile	Tyr	Leu	Phe	Asn	Ala	Glu	Asp	Leu	Asp	Asn	Asp	Asp	Ile	Ile	Ala		
385						390					395				400		
Met	Val	Glu	Asp	Ser	Pro	Thr	Tyr	Leu	Arg	Asp	Lys	Thr	Thr	Leu	Gly		
						405				410					415		
Lys	Ile	Lys	Ala	Lys	Ala	Ala	Leu	Glu	Glu	Glu	Ile	Ala	Thr	Glu	Glu		
						420				425					430		
Ala	Ile	Asp	Asp	Ser	Gly	Val	Ile	Thr	Phe								
			435					440									

<210> 6549
 <211> 171
 <212> PRT
 <213> B.fragilis

Lys	Phe	Ile	Lys	Met	Lys	Thr	Lys	Asn	Tyr	Leu	Ser	Ile	Ile	Ser	Ile		
1				5					10					15			
Leu	Phe	Phe	Ser	Phe	Leu	Phe	Val	Ser	Cys	Ser	Lys	Glu	Asp	Glu	Gly		
				20					25				30				
Asp	Thr	Ile	Lys	Pro	Val	Ile	Asp	Leu	Leu	Glu	Pro	Glu	Glu	Gly	Ala		
				35			40					45					
Ile	Leu	Arg	Ile	Gly	Ser	Ser	His	Gly	Val	His	Phe	Glu	Met	Asn	Leu		
				50			55				60						
His	Asp	Asn	Glu	Ala	Ile	Ala	Ser	Tyr	Lys	Ile	Asn	Ile	His	Asn	Asn		
							70				75				80		
Phe	Asp	Gly	His	Ser	His	Thr	Arg	Ala	Ser	Glu	Ala	Gly	Val	Thr	Lys		
				85					90					95			
Pro	Phe	Thr	Phe	Glu	Arg	Thr	Tyr	Thr	Asp	Lys	Ala	Gly	Gln	Lys	Asp		
				100				105					110				
Ala	His	Val	His	Asn	His	Asp	Ile	Lys	Ile	Pro	Ala	Asp	Ala	Thr	Pro		
				115			120						125				
Gly	Asn	Tyr	His	Leu	Met	Val	Tyr	Cys	Leu	Asp	Gln	Ser	Gly	Asn	Glu		
				130			135				140						
Thr	Tyr	Val	Val	Arg	Asn	Ile	Val	Leu	Ser	Val	Glu	Gly	Gly	Glu	Glu		
							150				155				160		
Gly	Glu	His	His	His	Asp	Glu	His	His	His	Asp							
				165						170							

<210> 6550
 <211> 328
 <212> PRT
 <213> B.fragilis

Arg	Leu	Asp	Asn	Arg	Ser	Asp	Glu	Gln	Gln	Ala	Met	Ser	Tyr	Lys	Cys		
1				5					10					15			
Leu	Pro	Leu	Ile	Thr	Lys	Tyr	Glu	Pro	Lys	Thr	Cys	Ser	Ile	Lys	Lys		
				20					25				30				
Lys	Ile	Tyr	Arg	Arg	Ile	Asp	Lys	Phe	Arg	Leu	Ile	Asn	Arg	Asn	Leu		
				35			40					45					
Lys	Ile	Met	Lys	Arg	Ile	Val	Val	Leu	Gly	Ala	Gly	Glu	Ser	Gly	Ala		
				50			55				60						
Gly	Ala	Ala	Val	Leu	Ala	Lys	Val	Lys	Gly	Phe	Asp	Thr	Phe	Val	Ser		
							70				75				80		

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Asp Met Ser Ala Ile Lys Asp Lys Tyr Lys Thr Leu Leu Asp Gly His
      85                      90                      95
Gly Ile Ala Trp Glu Glu Gly Arg His Thr Glu Glu Gln Ile Leu Asn
      100                    105                    110
Ala Asp Glu Val Val Lys Ser Pro Gly Ile Pro Asn Asp Ala Pro Leu
      115                    120                    125
Ile Leu Lys Leu Arg Glu Gln Gly Thr Pro Ile Ile Ser Glu Ile Glu
      130                    135                    140
Phe Ala Gly Arg Tyr Thr Asp Ala Lys Met Ile Cys Ile Thr Gly Ser
      145                    150                    155                    160
Asn Gly Lys Thr Thr Thr Thr Ser Leu Ile Tyr His Ile Phe Lys Ser
      165                    170                    175
Ala Gly Leu Asn Val Gly Leu Ala Gly Asn Ile Gly Lys Ser Leu Ala
      180                    185                    190
Leu Gln Val Ala Glu Glu Lys His Asp Tyr Tyr Val Ile Glu Leu Ser
      195                    200                    205
Ser Phe Gln Leu Asp Asn Met Tyr Asn Phe Arg Ala Asp Ile Ala Val
      210                    215                    220
Leu Met Asn Ile Thr Pro Asp His Leu Asp Arg Tyr Asp His Cys Met
      225                    230                    235                    240
Gln Asn Tyr Ile Asn Ala Lys Phe Arg Ile Thr Gln Asn Gln Thr Ser
      245                    250                    255
Glu Asp Ala Phe Ile Phe Trp Asn Asp Asp Pro Ile Ile Lys Arg Glu
      260                    265                    270
Leu Asp Lys His Gly Ile Arg Ala His Leu Tyr Pro Phe Leu Gly Ile
      275                    280                    285
Lys Glu Glu Arg Ser Ile Ala Tyr Val Glu Asp His Glu Val Val Ile
      290                    295                    300
Thr Asp Pro Ile Ala Ile Asn Met Glu Gln Glu Gln Val Ala Leu Thr
      305                    310                    315                    320
Gly Gln His Asn Leu Ile Thr Leu
      325

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<210> 6551

<211> 452

<212> PRT

<213> B.fragilis

<400> 6551

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Ile Met Cys Lys Tyr Gln Ile Val Lys Ile Met Met Asp Trp Lys Arg
1      5                      10                      15
Leu Ile Ser Ala Lys Arg Phe Gly Met Glu Glu Phe His Glu Glu Arg
      20                    25                    30
Gln Glu Asn Arg Ser Glu Phe Gln Arg Asp Tyr Asp Arg Leu Val Phe
      35                    40                    45
Ser Ala Pro Phe Arg Arg Leu Gln Asn Lys Thr Gln Val Phe Pro Leu
      50                    55                    60
Pro Gly Ser Ile Phe Val His Asn Arg Leu Thr His Ser Leu Glu Val
      65                    70                    75                    80
Ser Cys Val Gly Arg Ser Leu Gly Asn Asp Val Ser Lys Ala Ile Leu
      85                    90                    95
Ala Arg Gln Pro Glu Leu Gln Asp Ser Phe Leu Pro Glu Ile Gly Ser
      100                   105                   110
Ile Val Ser Ala Ala Cys Leu Ala His Asp Leu Gly Asn Pro Pro Phe
      115                   120                   125
Gly His Ser Gly Glu Lys Ala Ile Ser Thr Phe Phe Ser Glu Gly Lys
      130                   135                   140
Gly Val Gln Leu Gln Glu Lys Leu Ser Pro Met Glu Trp Asn Asp Leu
      145                   150                   155                   160

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Thr His Phe Glu Gly Asn Ala Asn Ala Phe Arg Leu Leu Thr His Gln
 165 170 175
 Phe Glu Gly Arg Arg Lys Gly Gly Phe Val Leu Thr Tyr Ser Thr Leu
 180 185 190
 Ala Ser Ile Val Lys Tyr Pro Phe Ser Ser Ser Leu Ala Gly Asn Lys
 195 200 205
 Ser Lys Phe Gly Phe Phe Thr Thr Glu Glu Glu Gly Phe Arg Arg Ile
 210 215 220
 Ala Thr Glu Leu Gly Leu Ile Gln Leu Ser Asp Arg Pro Leu Lys Tyr
 225 230 235 240
 Ala Arg His Pro Leu Val Tyr Leu Val Glu Ala Ala Asp Asp Ile Cys
 245 250 255
 Tyr Gln Met Met Asp Ile Glu Asp Ala His Lys Leu Lys Ile Leu Thr
 260 265 270
 Thr Glu Glu Thr Lys Glu Leu Leu Leu Ala Tyr Phe Ala Asp Glu Arg
 275 280 285
 Gln Thr His Ile Arg Lys Thr Phe Asp Ile Val Lys Asp Thr Asn Glu
 290 295 300
 Gln Ile Ala Tyr Leu Arg Ser Ser Val Ile Gly Leu Leu Ile Lys Glu
 305 310 315 320
 Cys Thr Gln Val Phe Leu Asn Asn Glu Thr Glu Ile Leu Ser Gly Thr
 325 330 335
 Phe Glu Gly Ala Leu Ile Lys His Ile Ser Glu Arg Pro Gly Lys Ala
 340 345 350
 Tyr Lys His Cys Ser Glu Val Ser Phe Ser Lys Ile Tyr Arg Ser Arg
 355 360 365
 Asp Val Leu Asp Ile Glu Leu Ala Gly Phe Arg Val Ile Asn Thr Leu
 370 375 380
 Leu Glu Leu Met Ile Asp Ala Val Thr Ser Pro Glu Lys Ala Tyr Ser
 385 390 395 400
 Gln Leu Leu Ile Asn Arg Val Ser Gly Gln Tyr Asn Ile Lys Ala Pro
 405 410 415
 Ala Leu Tyr Glu Arg Val Gln Ala Val Leu Asp Tyr Ile Ser Gly Met
 420 425 430
 Thr Asp Val Phe Ala Leu Asp Leu Tyr Arg Lys Ile Asn Gly Asn Ser
 435 440 445
 Leu Pro Ala Val
 450

<210> 6552
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6552
 Phe Gln Lys Lys Pro Tyr Leu Cys Thr Arg Asn Arg Glu Thr Thr Ile
 1 5 10 15
 Gln Asn Glu Ser Lys Val Lys Gln Lys Glu Gln Lys Cys Ser Lys Gln
 20 25 30
 Asp Gly Pro Phe Val Tyr Arg Leu Gly Arg Lys Ile Phe Ile Leu Glu
 35 40 45
 Arg Gly Val Arg Phe Pro His Gly Leu Gln Leu Lys Lys
 50 55 60

<210> 6553
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 6553

Met Lys Lys Lys Tyr Leu Val Ile Val Leu Leu Phe Leu Val Ala Asn
 1 5 10 15
 Thr Cys Tyr Ile Tyr His Gln His Val Gly Leu Lys Lys Val His Ser
 20 25 30
 Phe Leu Ser Glu Leu Arg Gln Asp Thr Gly Glu Arg Leu Gly Ile Leu
 35 40 45
 Glu Met Gln Lys Glu Asp Arg Val Tyr Glu Ile Gln Phe Asn Gly Gln
 50 55 60
 Leu Ile Asp Lys Glu Leu Thr Val Ile Asp Thr Asp Gly Lys Gln Lys
 65 70 75 80
 Lys Ile Gly Asp Leu Ile Ile Asp Asn Pro Lys Leu Val Phe Arg Phe
 85 90 95
 Ser Glu Leu Asn Cys Asp Lys Cys Ile Asp Ala Gln Ile Arg Asn Leu
 100 105 110
 Asn Glu Tyr Val Asp Ser Ile Glu Leu Gln Asn Ile Ile Leu Leu Thr
 115 120 125
 Asp Phe Gln Ser Leu Glu Tyr Met Arg Ser Phe Gln Lys Ser Asn Lys
 130 135 140
 Val Lys Phe Ala Ile Tyr Asn Met Glu Ala Glu Ile Asp Ser Val Leu
 145 150 155 160
 Val Asn Ile Asp Leu Pro Tyr Phe Phe Val Leu Thr Pro Gln Glu Glu
 165 170 175
 Arg Ile Gln Cys Met Tyr Ile Pro His Lys Glu Ile Pro Phe Leu Thr
 180 185 190
 Glu Val Tyr Leu Ser Ser Val Lys Arg Lys Phe Phe Thr Asp Leu Glu
 195 200 205

<210> 6554

<211> 140

<212> PRT

<213> B.fragilis

<400> 6554

Gly Trp Cys Leu Tyr Tyr Glu Leu Cys Ile Asp Ile Cys Ile Arg Cys
 1 5 10 15
 Ile Leu Phe Asn Glu Leu Ala Ala Trp Thr Tyr Val Phe Thr His Gln
 20 25 30
 His Gly Glu Asp Ile Val Gly Phe Cys Cys Val Val Asp Ile Asn Leu
 35 40 45
 Phe Gln His Thr Val Phe Arg Ile His Ser Arg Phe Pro Gln Leu Leu
 50 55 60
 Gly Ile His Leu Thr Gln Thr Phe Val Ala Leu Cys Met Asp Cys Ile
 65 70 75 80
 Phe Arg Thr Ala Thr Ile Ser Val Asp Lys Leu Leu Ala Leu Arg Ile
 85 90 95
 Cys Pro Ala Ile Leu Phe Tyr Phe Ser Phe Phe Ala Lys Val Glu Arg
 100 105 110
 Gly Ser Gly Asn Val Gln Ile Ala Ile Leu Asp Asp Leu Trp His Ile
 115 120 125
 Ala Glu Glu Lys Ser His Asp Gln Cys Val Asp Val
 130 135 140

<210> 6555

<211> 113

<212> PRT

<213> B.fragilis

<400> 6555

Met Gly Val Lys Arg Asn Thr Arg His Arg Ile Trp Leu Ala Trp Met
 1 5 10 15
 Leu Leu Met Thr Phe Met Pro Leu Ser Val Val Lys Val Phe His Asn
 20 25 30
 His Ser Glu Thr Ser Ile Thr Cys Thr Asp Ala His Ser Gly Lys
 35 40 45
 Ser His Thr Cys Glu Thr Cys Pro Ile Cys Gln Phe Met Leu Ser
 50 55 60
 Pro Phe Ile Glu Thr Pro Ser Thr Leu Leu Thr Tyr Thr Pro Leu Tyr
 65 70 75 80
 Val Lys Trp Glu Ser Gly Thr Phe Gln Asp Lys Lys Leu Ser Ile Ala
 85 90 95
 Phe Tyr Pro His Tyr Leu Arg Gly Pro Pro Pro Val Phe Tyr His Ile
 100 105 110
 Val

<210> 6556

<211> 880

<212> PRT

<213> B.fragilis

<400> 6556

His Thr Val Asp Pro Ser Ser Pro Val Val Lys Thr His Asn Leu Ser
 1 5 10 15
 Leu Glu Glu Val Ala Val Tyr Ala Tyr Arg Asn Lys Ala Gly Lys Ala
 20 25 30
 Asn Trp Glu Val Thr Arg Ala Ser Ala Asp Thr Ile Pro Ala Asp Thr
 35 40 45
 Ala Ser Thr Asp Phe Asn Ser Glu Ile Asp Ile Arg Asn Ile Glu Leu
 50 55 60
 Lys His Ala Asn Leu Val Phe Asp Asp Arg Asn Thr Asp Ile Tyr Ser
 65 70 75 80
 Arg Ile Asp Asp Ala Asn Leu Lys Leu Arg Leu Ser Leu Thr Lys Gly
 85 90 95
 Ile Ser Thr Leu Gly Leu Lys Phe Asp Asn Lys Asn Ile Leu Phe Trp
 100 105 110
 Gln Gln Gly Glu Leu Leu Val Asn Lys Ile Ala Thr Ser Leu Arg Thr
 115 120 125
 Asp Ile Met Val Asp Arg Gln Thr Ala Val Trp Lys Leu Lys Asp Thr
 130 135 140
 Glu Leu Asp Val Asn Gly Ile Arg Leu Asp Val Asn Gly Ala Phe Arg
 145 150 155 160
 Arg Asp Thr Val Ala Lys Thr Ile Gly Met Asp Leu Glu Tyr Gly Leu
 165 170 175
 His Ala Pro Ser Met Glu Thr Val Leu Arg Met Ile Pro Lys Ser Tyr
 180 185 190
 Val Lys Asp Thr Lys Val Ser Ala Lys Gly Glu Val Thr Val Ser Gly
 195 200 205
 Arg Val Arg Gly Val Tyr Gly Asp Lys Lys Leu Pro Ala Val Ser Leu
 210 215 220
 Lys Ile Gly Ile Lys Glu Ala Ser Ala Gln Tyr Lys Gly Leu Pro Tyr
 225 230 235 240
 Gly Ile Asp Glu Val Thr Ala Asp Phe Asp Ala Tyr Val Asp Leu Met
 245 250 255
 Arg His Gln Pro Ser Tyr Leu Asn Leu Lys Ile Phe His Phe Lys Gly
 260 265 270
 Ala His Thr Glu Val Leu Ala Asp Ala Lys Val Asp Asp Leu Leu Asp
 275 280 285

Asp	Pro	Leu	Ile	Thr	Phe	His	Thr	Lys	Ser	Thr	Val	Asp	Leu	Asp	Ala
290						295					300				
Leu	Ala	Lys	Thr	Phe	Pro	Leu	Gln	Glu	Ser	Val	Thr	Ile	Thr	Gly	Lys
305					310					315					320
Leu	Asp	Ala	Asp	Met	Gly	Met	Lys	Cys	Arg	Leu	Ser	Ala	Leu	Lys	Lys
				325					330					335	
Gln	Asp	Ile	Gly	Arg	Met	Lys	Leu	Gly	Gly	Lys	Leu	Glu	Leu	Lys	Asp
			340					345					350		
Phe	Glu	Leu	Lys	Asp	Thr	Ala	Lys	Asp	Phe	Asp	Phe	Leu	Gly	Asn	Ala
		355				360					365				
Thr	Phe	Arg	Phe	Arg	Asp	Asn	Glu	Thr	Leu	Gln	Ala	Gln	Met	Asp	Val
		370				375					380				
Arg	Lys	Leu	Val	Leu	Arg	Ser	Arg	Phe	Leu	Ser	Ser	Asp	Ile	Glu	Arg
385					390					395					400
Leu	Val	Ala	Asn	Val	Ser	Ser	Thr	Asn	Pro	Gln	Asp	Thr	Asn	Arg	Ile
			405						410					415	
Val	Ser	Leu	Gln	Cys	Asp	Met	Glu	Val	Ser	Lys	Leu	Arg	Ala	Ser	Met
			420					425					430		
Gly	Asp	Ser	Ile	Lys	Leu	Tyr	Ser	Ala	Arg	Ala	Lys	Ala	Gln	Ala	Ala
		435					440					445			
Leu	Gly	Pro	Gln	Gly	Val	Asp	Val	Thr	Lys	Pro	Ala	Ile	Asp	Phe	Ser
450						455					460				
Leu	Arg	Ala	Asp	Ser	Leu	Phe	Phe	Ser	Ala	Ala	Gly	Thr	Arg	Met	Ala
465					470					475					480
Met	Asn	Val	Ala	Gly	Ile	Lys	Met	Lys	Ala	Asp	Lys	Leu	Asn	Asp	Ser
				485					490					495	
Leu	Trp	Met	Pro	Lys	Gly	Ile	Val	Gly	Phe	Asn	Arg	Leu	Arg	Phe	Arg
			500					505					510		
Thr	Pro	Glu	Phe	Gly	Leu	Pro	Ile	Arg	Met	Ser	Lys	Thr	Ala	Val	Thr
		515					520					525			
Val	Asp	Gly	Pro	Lys	Ile	Thr	Leu	Lys	Asn	Ala	Ser	Val	Arg	Ile	Gly
	530					535					540				
Arg	Ser	Asn	Met	Thr	Ala	Thr	Gly	Asp	Met	Met	Gly	Val	Tyr	Arg	Ala
545					550					555					560
Met	Thr	Lys	Gly	Glu	Lys	Leu	Thr	Ala	His	Leu	Ser	Leu	Thr	Ser	Asp
				565					570					575	
Leu	Ile	Asp	Cys	Asn	Gln	Leu	Ile	Asn	Ser	Leu	Ser	Phe	Pro	Glu	Asp
			580					585					590		
Thr	Thr	Glu	Val	Leu	Thr	Asp	Ser	Val	Pro	Ser	Glu	Met	Lys	Leu	Phe
		595					600					605			
Val	Ile	Pro	Arg	Asn	Ile	Asp	Phe	Glu	Leu	Gln	Thr	Asp	Leu	Lys	Lys
	610					615					620				
Val	Ile	Phe	Glu	Lys	Met	Leu	Phe	Glu	Asn	Val	His	Gly	Ala	Val	Asp
625					630					635					640

755	760	765
Asp Ser Ile Ser Val	Asn Val Thr Val His Asp	Gly Asn Val Thr Val
770	775	780
Tyr Pro Phe Leu Val	Glu Ile Asp Arg Tyr Lys	Ala Ala Val Gly Gly
785	790	795
Glu Gln Gly Leu Asp	Met Asn Phe Asn Tyr His	Ile Ser Ile Leu Lys
805	810	815
Ser Pro Leu Pro Phe	Lys Ala Gly Val Asn Ile	Ser Gly Asn Leu Asp
820	825	830
Lys Met Lys Phe Arg	Ile Gly Lys Ala Lys Tyr	Lys Asp Ala Val Thr
835	840	845
Pro Ala Ala Val His	Arg Val Asp Ser Thr Arg	Met Asn Met Gly Asn
850	855	860
Glu Ile Val Asn Arg	Phe Arg Arg Val Val	Leu Gly Arg Gln Pro Arg
865	870	875
		880

<210> 6557
 <211> 217
 <212> PRT
 <213> B.fragilis

<400> 6557
Lys Gln Ser Leu Asn Tyr Asn Trp Thr Leu Phe Met Arg Phe Gln Val
1 5 10 15
Arg Ser Ile Leu Leu Phe Val Leu Leu Leu Ile Ile Phe Leu Gln Gln
20 25 30
Thr Ile Ala Met Asn Val Leu Arg Asn Trp Leu Tyr Leu Phe Pro Ile
35 40 45
Ser Leu Leu Met Ile Leu Leu Phe Ser Cys Asn Gln Ile Lys Glu Tyr
50 55 60
Asp Ala Lys Glu Arg Thr Ser Arg Asn Thr Arg Val Gln His Leu Ile
65 70 75 80
Glu Lys Asp Ile Thr Trp Leu Val Gly Lys Lys Leu Asn Ser Val Asp
85 90 95
Ser Ile Leu Pro Asn Glu Leu Leu His Glu Lys Val Leu Phe Leu Phe
100 105 110
Asn Tyr His Asp Cys Gly Thr Cys Ile Lys Thr Gly Phe Ala Val Val
115 120 125
Asn Ser Ile Asp Arg Gln Lys Gly Lys Glu Tyr Val Lys Val Ile Gly
130 135 140
Ser Met Ile Ser Asp Leu Thr Ser Val Gln Arg Phe Asn Glu Tyr His
145 150 155 160
Gly Tyr Ile Tyr Val Asp Thr Lys Asp Leu Ile Arg Arg Glu Leu Lys
165 170 175
Tyr Ala Pro Thr Pro Met Leu Leu Arg Val Asp Thr Asp Asn Arg Ile
180 185 190
Leu Glu Ala Leu Ile Pro Thr Thr Glu Met Asp Asn Gln Thr Ile Lys
195 200 205
Met Phe Ile Ala Ser Cys Leu Lys Arg
210 215

<210> 6558
 <211> 347
 <212> PRT
 <213> B.fragilis

<400> 6558
Gln Ile Lys Glu Gln Leu Leu Thr Lys Tyr Met Glu Glu Val Ile Glu
1 5 10 15

Pro Val Ser Lys Glu Leu Ile Ile Ala Glu Leu Thr Glu Asp Lys Arg
 20 25 30
 Leu Arg Met Thr Asn Lys Ser Asn Asn Gln Ile Tyr Ile Ile Thr Tyr
 35 40 45
 Gln Asp Ser Pro Asn Ile Met Arg Glu Ile Gly Arg Leu Arg Glu Ile
 50 55 60
 Ala Phe Arg Ala Ala Gly Gly Gly Thr Gly Leu Ser Met Asp Ile Asp
 65 70 75 80
 Glu Tyr Asp Thr Met Glu Asn Pro Tyr Lys Gln Leu Ile Val Trp Asn
 85 90 95
 Pro Glu Ala Glu Glu Ile Leu Gly Gly Tyr Arg Tyr Ile Leu Gly Thr
 100 105 110
 Asp Val Arg Phe Asp Glu His Gly Ala Pro Val Leu Ala Thr Ser His
 115 120 125
 Met Phe Asn Phe Ser Asp Arg Phe Val Lys Glu Phe Leu Pro Thr Thr
 130 135 140
 Ile Glu Leu Gly Arg Ser Phe Val Thr Leu Glu Tyr Gln Ser Thr Arg
 145 150 155 160
 Ala Gly Ser Lys Gly Leu Phe Ala Leu Asp Asn Leu Trp Asp Gly Leu
 165 170 175
 Gly Ala Leu Thr Val Val Met Pro Asn Val Lys Tyr Phe Phe Gly Lys
 180 185 190
 Val Thr Met Tyr Pro Ser Tyr His Arg Gln Gly Arg Asp Met Ile Leu
 195 200 205
 Tyr Phe Leu Lys Lys His Phe Gly Asp Lys Asp Gly Leu Ile Thr Pro
 210 215 220
 Met Lys Pro Leu Glu Met Glu Thr Asp Glu Ala Glu Leu Ala Arg Ile
 225 230 235 240
 Phe Cys Lys Asp Ser Phe Lys Asp Asp Tyr Arg Ile Leu Asn Gly Glu
 245 250 255
 Ile Arg Lys Leu Gly Phe Asn Ile Pro Pro Leu Val Asn Ala Tyr Met
 260 265 270
 Ser Leu Ser Pro Thr Met Arg Met Phe Gly Thr Ala Ile Asn Tyr Gly
 275 280 285
 Phe Gly Asp Val Glu Glu Thr Gly Ile Leu Ile Ala Val Asp Glu Ile
 290 295 300
 Leu Glu Glu Lys Arg Met Arg His Ile Glu Ser Phe Val Lys Asn Asp
 305 310 315 320
 Pro Glu Asp Cys Gln Ile Thr Ser Gly Val Asn Lys Val Phe Thr Pro
 325 330 335
 Lys Val Val Thr Pro Gln Glu Asp Cys Ser Arg
 340 345

<210> 6559

<211> 486

<212> PRT

<213> B.fragilis

<400> 6559

Gly Met Lys Leu Lys Glu Ile Leu Thr Ser Ile Gln Pro Val Lys Ile
 1 5 10 15
 Thr Gly Asn Gln Asp Ile Glu Ile Thr Gly Val Asp Ile Asp Ser Arg
 20 25 30
 Gln Val Glu Ser Gly His Leu Phe Met Ala Met Arg Gly Thr Gln Thr
 35 40 45
 Asp Gly His Ala Tyr Ile Pro Ala Ala Val Glu Lys Gly Ala Thr Ala
 50 55 60
 Ile Leu Cys Glu Glu Leu Pro Ala Glu Leu Val Glu Gly Val Thr Tyr
 65 70 75 80

Ile Gln Val Ala Asp Ser Glu Asp Ala Val Gly Lys Ala Ala Thr Thr
 85 90 95
 Phe Tyr Gly Asn Pro Ser Ser Lys Leu Glu Leu Val Gly Val Thr Gly
 100 105 110
 Thr Asn Gly Lys Thr Thr Ile Ala Thr Leu Leu Tyr Asn Thr Phe Arg
 115 120 125
 Tyr Phe Gly Tyr Lys Val Gly Leu Ile Ser Thr Val Cys Asn Tyr Ile
 130 135 140
 Asp Asp Glu Ala Ile Pro Thr Glu His Thr Thr Pro Asp Pro Ile Thr
 145 150 155 160
 Leu Asn Arg Leu Leu Gly Arg Met Ala Asp Glu Gly Cys Lys Tyr Val
 165 170 175
 Phe Met Glu Val Ser Ser His Ser Ile Ala Gln Lys Arg Ile Ser Gly
 180 185 190
 Leu Lys Phe Ala Gly Gly Ile Phe Thr Asn Leu Thr Arg Asp His Leu
 195 200 205
 Asp Tyr His Lys Thr Val Glu Asn Tyr Leu Lys Ala Lys Lys Lys Phe
 210 215 220
 Phe Asp Asp Met Pro Lys Asn Ser Phe Ser Leu Thr Asn Leu Asp Asp
 225 230 235 240
 Lys Asn Gly Leu Val Met Thr Gln Asn Thr Lys Ser Lys Val Tyr Thr
 245 250 255
 Tyr Ser Leu Arg Ser Leu Ser Asp Phe Lys Gly Arg Val Leu Glu Ser
 260 265 270
 His Phe Glu Gly Met Leu Leu Asp Phe Asn Asn His Glu Leu Ala Val
 275 280 285
 Gln Phe Ile Gly Lys Phe Asn Ala Ser Asn Leu Leu Ala Val Phe Gly
 290 295 300
 Ala Ala Val Leu Leu Gly Lys Lys Glu Glu Asp Val Leu Val Ala Leu
 305 310 315 320
 Ser Thr Leu His Pro Val Ala Gly Arg Phe Asp Ala Ile Arg Ser Pro
 325 330 335
 Gln Gly Tyr Thr Ala Ile Val Asp Tyr Ala His Thr Pro Asp Ala Leu
 340 345 350
 Val Asn Val Leu Asn Ala Ile His Gly Val Leu Glu Gly Lys Gly Lys
 355 360 365
 Val Ile Thr Val Val Gly Ala Gly Gly Asn Arg Asp Lys Gly Lys Arg
 370 375 380
 Pro Ile Met Ala Lys Glu Ala Ala Arg Ala Ser Asp Arg Val Ile Ile
 385 390 395 400
 Thr Ser Asp Asn Pro Arg Phe Glu Glu Pro Gln Asp Ile Ile Asn Asp
 405 410 415
 Met Leu Ala Gly Leu Asp Thr Glu Asp Lys Lys Lys Thr Leu Ser Ile
 420 425 430
 Ala Asp Arg Lys Glu Ala Ile Arg Thr Ala Cys Met Leu Ala Glu Lys
 435 440 445
 Gly Asp Val Ile Leu Val Ala Gly Lys Gly His Glu Asn Tyr Gln Asp
 450 455 460
 Ile Lys Gly Val Lys His His Phe Asp Asp Lys Glu Val Leu Lys Glu
 465 470 475 480
 Ile Phe Ser Leu Thr Val
 485

<210> 6560
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 6560

Lys Pro Ser Cys Asn Trp His His Phe Tyr Tyr Lys Ala Gly Lys Arg
 1 5 10 15
 Lys Gly Val Lys Gln Arg Leu Phe Lys Arg Ala Pro Ile His Asp His
 20 25 30
 Phe Arg Thr Ser Met Ser Leu Val Glu Pro Gly Cys Ser Val Lys Phe
 35 40 45
 Thr Lys Pro Asp Gln Leu Phe His Glu Ser Lys Ile Thr Val Arg Phe
 50 55 60
 Trp Ile Val Thr Ile Val Leu Ala Ala Ile Thr Ile Ile Thr Leu Lys
 65 70 75 80
 Ile Arg

<210> 6561

<211> 595

<212> PRT

<213> B.fragilis

<400> 6561

Met Phe Gly Arg Ile Asn Asn Cys Ser Lys Met Lys Ile Asn Lys Leu
 1 5 10 15
 Leu Phe Gly Met Leu Leu Leu Leu Leu Ala Ser Cys Gly Ser Ser Arg
 20 25 30
 Lys Val Glu Lys Gln Ser Glu Gln Val Ala Val Gln Glu Ile Asn Leu
 35 40 45
 Thr Pro Glu Gln Gln Arg Lys Tyr Asp Tyr Phe Phe Leu Glu Ala Ser
 50 55 60
 Arg Leu Lys Val Lys Lys Glu Tyr Thr Ala Ala Phe Asp Leu Leu Gln
 65 70 75 80
 His Cys Leu Ala Ile Asn Pro Thr Gly Ser Ala Ala Leu Tyr Glu Ile
 85 90 95
 Ala Gln Tyr Tyr Leu Phe Leu Lys Gln Val Pro Gln Gly Gln Glu Ala
 100 105 110
 Leu Glu Lys Ala Val Ala Tyr Ala Pro Asp Asn Tyr Trp Tyr Ser Gln
 115 120 125
 Ala Leu Ala Gly Leu Tyr Gln Gln Gln Asp Gln Lys Glu Lys Ala Ile
 130 135 140
 Gly Ile Leu Glu Lys Met Ala Thr Arg Phe Pro Ala Lys Gln Asp Pro
 145 150 155 160
 Leu Phe Asn Leu Leu Asp Leu Tyr Asn Gln Lys Glu Asp Tyr Gly Lys
 165 170 175
 Val Ile Ser Thr Leu Asn Arg Ile Glu Glu Lys Thr Gly Lys Asn Glu
 180 185 190
 Gln Ile Thr Met Glu Lys Phe Arg Ile Tyr Leu Gln Met Lys Asp Asn
 195 200 205
 Lys Lys Ala Phe Glu Glu Ile Glu Ser Leu Val Asn Glu Tyr Pro Met
 210 215 220
 Asp Tyr Arg Tyr Gln Val Ile Leu Gly Asp Val Tyr Met Gln Asn Gly
 225 230 235 240
 Lys Lys Gln Glu Ala Tyr Asp Thr Tyr Lys Lys Val Leu Ala Ala Glu
 245 250 255
 Pro Asp Asn Pro Met Ala Leu Phe Ser Leu Ala Ser Tyr Tyr Glu Gln
 260 265 270
 Thr Gly Gln Lys Glu Leu Phe Glu Gln Gln Met Asp Thr Leu Leu Leu
 275 280 285
 Asn Arg Lys Val Pro Ser Asp Thr Lys Val Asn Val Met Arg Gln Phe
 290 295 300
 Ile Val Gln Ser Glu Gln Glu Gly Lys Asp Ser Thr Gln Val Ile Gly
 305 310 315 320

Leu Phe Asp Arg Met Met Gln Met Asp Met Asp Asp Val Gln Ile Pro
 325 330 335
 Met Leu Tyr Ala Gln Tyr Leu Leu Ser Lys Gly Met Glu Ala Gln Ser
 340 345 350
 Ile Pro Val Leu Glu Gln Val Val Gln Ile Asp Pro Thr Asn Lys Ala
 355 360 365
 Ala Arg Met Thr Leu Leu Gly Ser Ala Ile Arg Lys Asn Asp Tyr Glu
 370 375 380
 Gln Val Ile Lys Ile Cys Glu Pro Gly Ile Glu Ala Thr Pro Asp Ala
 385 390 395 400
 Leu Glu Phe Tyr Phe Tyr Leu Val Ile Ala Tyr Asn Gln Ala Glu His
 405 410 415
 Trp Asp Asp Val Leu Glu Val Ser Arg Lys Ala Leu Glu His Val Thr
 420 425 430
 Pro Glu Ser Asp Lys Gln Met Val Ser Asp Phe Tyr Thr Ile Ile Gly
 435 440 445
 Asp Val Tyr His Thr Lys Lys Leu Met Lys Glu Ala Tyr Val Ala Tyr
 450 455 460
 Asp Ser Ala Leu Val Tyr Asn Pro Ser Asn Ile Gly Ala Leu Asn Asn
 465 470 475 480
 Tyr Ala Tyr Tyr Leu Ser Val Glu Arg Arg Asp Leu Asp Lys Ala Glu
 485 490 495
 Glu Met Ser Tyr Lys Thr Val Lys Ala Ala Pro Asn Asn Ala Thr Tyr
 500 505 510
 Leu Asp Thr Tyr Ala Trp Ile Leu Phe Glu Lys Gly Asn Tyr Ala Glu
 515 520 525
 Ala Arg Ile Tyr Ile Asp Asp Ala Ile Lys Asn Thr Lys Pro Glu Glu
 530 535 540
 Glu Ser Ser Val Val Phe Glu His Cys Gly Asp Ile Tyr Phe Met Thr
 545 550 555 560
 Gly Asp Val Glu Gly Ala Leu Lys Tyr Trp Lys Lys Ala Leu Glu Leu
 565 570 575
 Gly Thr Glu Ser Lys Thr Leu Lys Gln Lys Ile Glu Lys Lys Lys Tyr
 580 585 590
 Ile Ala Glu
 595

<210> 6562

<211> 389

<212> PRT

<213> B.fragilis

<400> 6562

Thr Val Met Leu Asn Leu Lys Ser Asn Met Asn Lys Glu Asn Asn Lys
 1 5 10 15
 Glu Gly Gln Gly Asp Ala Leu Arg Val Ile Ile Ser Gly Gly Gly Thr
 20 25 30
 Gly Gly His Ile Phe Pro Ala Val Ser Ile Ala Asn Ala Ile Lys Glu
 35 40 45
 Leu Arg Pro Asp Ala Gln Ile Leu Phe Val Gly Ala Glu Gly Arg Met
 50 55 60
 Glu Met Gln Arg Val Pro Asp Ala Gly Tyr Gln Ile Ile Gly Leu Pro
 65 70 75 80
 Val Ala Gly Phe Asp Arg Lys His Leu Trp Lys Asn Val Ala Val Leu
 85 90 95
 Leu Lys Leu Val Arg Ser Gln Trp Lys Ala Arg Asn Ile Ile Arg Gln
 100 105 110
 Phe Arg Pro Gln Val Ala Val Gly Val Gly Gly Tyr Ala Ser Gly Pro
 115 120 125

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Thr Leu Lys Met Ala Gly Met Met Gly Val Pro Thr Leu Ile Gln Glu
130 135 140
Gln Asn Ser Tyr Ala Gly Val Thr Asn Lys Leu Leu Ala Gln Lys Ala
145 150 155 160
Arg Arg Ile Cys Val Ala Tyr Asp Gly Met Glu Lys Phe Phe Pro Ala
165 170 175
Asn Lys Ile Ile Met Thr Gly Asn Pro Val Arg Gln Asn Leu Leu Ala
180 185 190
Glu Lys Pro Glu Arg Glu Gln Ala Ile Arg Ser Phe Gly Leu Asn Pro
195 200 205
Glu Lys Lys Thr Ile Leu Ile Leu Gly Gly Ser Leu Gly Ala Arg Thr
210 215 220
Ile Asn Asn Thr Leu Ile Ala Gly Leu Gln Leu Ile Arg Arg Thr Thr
225 230 235 240
Asp Val Gln Phe Ile Trp Gln Thr Gly Lys Ile Tyr His Gln Gln Val
245 250 255
Thr Glu Ala Val Lys Ala Ala Gly Glu Ile Leu Asn Leu Phe Val Thr
260 265 270
Asp Phe Ile Lys Asp Met Ala Ala Tyr Ala Ala Asp Leu Val
275 280 285
Ile Ser Arg Ala Gly Ala Gly Ser Ile Ser Glu Phe Cys Leu Leu Asn
290 295 300
Lys Pro Val Ile Leu Val Pro Ser Pro Asn Val Ala Glu Asp His Gln
305 310 315 320
Thr Lys Asn Ala Leu Ala Leu Val Asn Lys Gln Ala Ala Ile Tyr Val
325 330 335
Lys Asp Ala Glu Ala Glu Asn Lys Leu Leu Pro Val Ala Leu Glu Thr
340 345 350
Ile Ala Asn Ala Glu Lys Leu Ser Glu Leu Ser Glu Asn Ile Ala His
355 360 365
Leu Ala Leu Pro Asp Ser Ala Val Val Ile Ala Lys Glu Val Ile Lys
370 375 380
Leu Ala Gln Gln Ser
385

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<210> 6563
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 6563
 Thr Glu Asn Arg Lys Lys Glu Ile His Cys Arg Met Lys Gly Ser Lys
 1 5 10 15
 Leu Lys Gln Thr Val Ile Lys Gln Ser Tyr Leu Leu Pro Leu Leu Leu
 20 25 30
 Met Val Val Leu Leu Ala Gly Cys Lys Thr Ser Lys Val Val Lys Thr
 35 40 45
 Thr Pro Val Glu Pro Ala Tyr Leu Ser Ser Lys Leu Gln Leu Thr Val
 50 55 60
 Pro Asn Lys Asn Gly Ser Met Thr Val Ser Gly Ser Met Lys Met Lys
 65 70 75 80
 Ser Gly Glu Arg Ile Gln Leu Ser Val Leu Met Pro Val Phe Arg Ser
 85 90 95
 Glu Val Met Arg Met Glu Val Thr Pro Asp Glu Val Leu Leu Ile Asp
 100 105 110
 Arg Met Asn Lys Arg Tyr Val Arg Ala Thr Arg Asp Glu Leu Lys Gly
 115 120 125
 Ile Leu Pro Glu Asn Ala Asp Phe Asp Arg Leu Glu Lys Leu Leu Phe
 130 135 140

Lys Ala Ser Leu Pro Gly Glu Lys Lys Glu Leu Thr Gly Arg Glu Leu
 145 150 155 160
 Gly Ile Pro Ser Leu Glu Lys Ala Lys Val Arg Leu Ser Asp Phe Ser
 165 170 175
 Thr Ala Glu Phe Glu Leu Ile Pro Thr Glu Val Ser Ser Arg Tyr Thr
 180 185 190
 Gln Val Ala Leu Glu Asp Leu Leu Lys Met Leu Ile Gln Leu
 195 200 205

<210> 6564
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 6564
 Ile Val Asn Arg Leu Asn Met Asn Ile Gln Val Ile Asn Lys Ser Lys
 1 5 10 15
 His Pro Leu Pro Ala Tyr Ala Thr Glu Leu Ser Ala Gly Met Asp Ile
 20 25 30
 Arg Ala Asn Ile Ser Glu Pro Ile Ser Leu Ala Pro Met Gln Arg Cys
 35 40 45
 Leu Val Pro Thr Gly Leu Phe Ile Ala Leu Pro Gln Gly Phe Glu Ala
 50 55 60
 Gln Ile Arg Pro Arg Ser Gly Leu Ala Leu Lys Lys Gly Ile Thr Val
 65 70 75 80
 Leu Asn Ser Pro Gly Thr Ile Asp Ala Asp Tyr Arg Gly Glu Ile Cys
 85 90 95
 Ile Ile Leu Val Asn Leu Ser Ala Glu Thr Phe Val Ile Glu Asp Gly
 100 105 110
 Glu Arg Ile Ala Gln Met Val Ile Ala Arg His Glu Gln Ala Val Trp
 115 120 125
 Lys Glu Val Glu Val Leu Asp Glu Thr Glu Arg Gly Ala Gly Gly Phe
 130 135 140
 Gly His Thr Gly Arg Gly
 145 150

<210> 6565
 <211> 723
 <212> PRT
 <213> B.fragilis

<400> 6565
 Asp Asp Leu Ser Met Arg Ile Gly Phe Phe Ser Gly Met Leu Gly Gly
 1 5 10 15
 Leu Cys Leu Ile Ser Thr Leu His Ala Gln Glu Pro Asp Ser Leu Lys
 20 25 30
 Ala Val Ser Leu Ser Glu Val Val Val Thr Glu Ser Tyr Gln His Leu
 35 40 45
 Lys Asn Lys Asn Ser Thr Trp Arg Met Glu Val Val Gly Lys Glu Phe
 50 55 60
 Leu Arg Glu His Phe Thr Gly Asn Leu Ile Gln Thr Leu Gly Thr Leu
 65 70 75 80
 Pro Gly Val His Ser Met Asp Ile Gly Ser Gly Phe Ser Lys Pro Met
 85 90 95
 Ile Arg Gly Met Gly Phe Asn Arg Ile Ser Val Val Glu Asn Gly Ile
 100 105 110
 Lys Gln Glu Gly Gln Gln Trp Gly Ala Asp His Gly Leu Glu Leu Asp
 115 120 125
 Ala Phe Asn Ala Gly Gln Val Ser Ile Arg Lys Gly Pro Ala Ser Leu

130	135	140
Leu Tyr Gly Ser Asp	Ala Met Gly Gly Ala Ile	Glu Leu Val Pro Leu
145	150	155
Pro Leu Pro Ala Gly	Asn Arg Leu Phe Gly	Glu Ala Ser Leu Leu Gly
165	170	175
Lys Ser Val Asn Gly	Thr Leu Gly Gly Ser	Leu Met Leu Gly Ile Lys
180	185	190
Lys Asp Ala Trp Tyr	Thr Trp Ala Arg Tyr	Ser Glu Gln His Phe Gly
195	200	205
Asp Tyr Arg Ile Pro	Thr Asp Thr Ile Val	Tyr Leu Thr Gln Arg Met
210	215	220
Pro Val Tyr His Arg	Arg Leu Lys Asn Thr	Ala Gly Phe Glu Arg Asp
225	230	235
Val Ser Trp Ala Ala	Gly Phe Arg Lys Glu	Arg Tyr Val Ser Ser Tyr
245	250	255
Trp Val Ser Asn Val	Phe Gln Lys Thr Gly	Phe Phe Pro Gly Ala His
260	265	270
Gly Ile Pro Asp Val	Ser Arg Leu Gln Asp	Asp Gly Asp Ser Arg Asn
275	280	285
Ile Glu Leu Pro Tyr	Ser Gln Val Asn His	Leu Lys Val Ser Thr Arg
290	295	300
Gln Ser Leu Leu Tyr	Asp Lys Trp Ala Leu	Thr Trp Asp Ile Gly Phe
305	310	315
Gln Lys Asn His Arg	Glu Glu Trp Ser Arg	Phe His Thr His Tyr Asp
325	330	335
Ala Gln Pro Val Pro	Asp Lys Asp Pro Asp	Lys Glu Leu Ala Phe Thr
340	345	350
Leu Asn Thr Tyr Ser	Ser Ala Val Lys Leu	Lys Leu Phe Ala Ser Ala
355	360	365
Val Trp Gln His Thr	Ala Gly Trp Asp Val	Gln Tyr Gln Arg Asn Thr
370	375	380
Ile Ala Gly Tyr Ser	Phe Leu Leu Pro Ala	Tyr Arg Arg Phe Thr Thr
385	390	395
Gly Ala Phe Trp Met	Thr Thr Tyr Arg Pro	Gly Pro Thr Leu Ser Phe
405	410	415
Ser Gly Gly Leu Arg	Tyr Asp Tyr Gly Lys	Ile Asp Ala Ser Ala Tyr
420	425	430
Thr Asp Pro Tyr Leu	Ala Ile Tyr Leu Arg	Glu Gln Gly Tyr Gly Asp
435	440	445
Glu Phe Ile Arg Lys	Tyr Glu Trp Arg Ser	Tyr Pro Val Arg Arg His
450	455	460
Phe Gly Asp Tyr Ser	Gly Ser Leu Gly Leu	Val Trp Ser Pro Ser Gly
465	470	475
Gly His Leu Leu Gln	Val Asn Val Gly His	Ser Phe Arg Leu Pro Gly
485	490	495
Ala Asn Glu Leu Ala	Ser Asn Gly Val His	His Gly Thr Phe Arg His
500	505	510
Glu Gln Gly Asp Ala	Ala Leu Ala Ser Glu	Arg Gly Trp Gln Phe Asp
515	520	525
Ala Ser Tyr Thr Tyr	Glu Asn Gly Pro Leu	Ser Val Ser Leu Ser Pro
530	535	540
Phe Val Ser Trp Phe	Ser Asn Tyr Ile Phe	Leu Arg Pro Thr Gly Glu
545	550	555
Trp Ser Ile Leu Pro	His Ala Gly Gln Ile	Tyr Arg Tyr Thr Gly Ala
565	570	575
Glu Ala Leu Phe Ala	Gly Gly Glu Ala Ala	Val Gly Ile Asp Phe Leu
580	585	590
Arg His Phe Asn Tyr	Arg Val Ser Gly Glu	Tyr Val Tyr Thr Tyr Asn
595	600	605

130 135 140
 145 150 155
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590
 595 600 605

Cys Asp Glu His Ile Pro Leu Ser Phe Ser Pro Pro Ala Ser Leu Arg
 610 615 620
 Asn Thr Leu Thr Trp Arg Tyr Lys Glu Phe Ser Ile Tyr Gly Glu Val
 625 630 635 640
 Gln His Ile Ala Ala Gln His Arg Val Ala Arg Asn Glu Asp Pro Thr
 645 650 655
 Pro Gly Ala Gln Leu Leu Asn Ala Gly Val Ser Ala Asn Leu Arg Ile
 660 665 670
 Gly Gly Ile Trp Ala Glu Val Thr Leu Ser Ala Arg Asn Leu Ser Gly
 675 680 685
 Ala Lys Tyr Phe Asn His Leu Ser Phe Tyr Arg Lys Val Glu Ile Pro
 690 695 700
 Glu Pro Gly Arg Asn Phe Gln Ile Leu Ile Lys Val Pro Phe Lys Ser
 705 710 715 720
 Leu Leu Lys

<210> 6566
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 6566
 Asn Lys Arg Ser Glu Met Glu Asp Lys Glu Ala Lys Lys Lys Lys Ser
 1 5 10 15
 Asn Ser Leu Lys Ser Ile Leu Gly Gly Asp Ile Leu Ala Thr Asp Phe
 20 25 30
 Phe Arg Arg Gln Thr Lys Leu Leu Val Leu Ile Met Val Leu Ile Ile
 35 40 45
 Phe Tyr Ile His Asn Arg Tyr Ala Ser Gln Gln Gln Gln Ile Glu Ile
 50 55 60
 Asp Lys Leu Lys Lys Glu Leu Ile Asp Ile Lys Tyr Asp Ala Leu Thr
 65 70 75 80
 Arg Ser Ser Glu Leu Met Glu Lys Ser Arg Gln Ser Arg Ile Glu Asp
 85 90 95
 Tyr Ile Ser Thr Lys Glu Ser Asp Leu Gln Thr Ser Thr His Pro Pro
 100 105 110
 Tyr Leu Ile Ser Thr Lys
 115

<210> 6567
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 6567
 Ser Leu Ile Phe Pro Arg His Cys Leu Lys Asn Ala Val Asn Leu His
 1 5 10 15
 His Arg Lys Thr Thr Asn Ile His Asn Leu Lys Ser Asn Val Met Lys
 20 25 30
 Ser Leu Ser Phe Arg Lys Asp Leu Ile Gly Val Gln Glu Glu Leu Leu
 35 40 45
 Arg Phe Ala Tyr Lys Leu Thr Thr Asp Arg Glu Glu Ala Asn Asp Leu
 50 55 60
 Leu Gln Glu Thr Ser Leu Lys Ala Leu Asp Asn Glu Asp Lys Tyr Thr
 65 70 75 80
 Pro Asp Thr Asn Phe Lys Gly Trp Met Tyr Thr Ile Met Arg Asn Ile
 85 90 95
 Phe Ile Asn Asn Tyr Arg Lys Val Val Arg Asp Gln Thr Phe Val Asp

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<210> 6568
<211> 168
<212> PRT
<213> B.fragilis
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<210> 6569
<211> 122
<212> PRT
<213> B.fragilis
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<400> 6569
Tyr Lys Ser Ile Ser Leu Phe Ile Met Lys Arg Lys Ile Phe Ser Leu
1          5          10          15
Ile Val Val Leu Val Val Thr Ile Ser Phe Ile Asn Val Trp Ile Ser
          20          25          30
Val Gly Ser Thr Asn Ala Lys Val Lys Leu Arg Leu Ala Ala Ile Asp
          35          40          45
Ala Met Ala Met Ile Glu Ala Glu Thr Pro Gly Asp Thr Glu Leu Ser
          50          55          60
Leu Ser Gly Ser Cys Lys Ile Thr Phe Thr Cys Tyr Asp Ser Trp Thr
65          70          75          80

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Gly Ala Ala Asp Gly Ser Ile Thr Cys Trp Gly Ala Glu Tyr Cys Lys
 85 90 95
 Arg Gly Ile Lys Lys Glu Gly Ile Val Ile Ile Thr Glu Thr Arg Trp
 100 105 110
 Val Glu Cys Asp Gly Lys Arg Thr Glu Cys
 115 120

<210> 6570

<211> 414

<212> PRT

<213> B.fragilis

<400> 6570

Gly Asn His Met Thr Lys Ala Ile Asp Phe Arg Tyr Glu Cys Lys Ile
 1 5 10 15
 Ile Val Ile Asn Glu Lys Gln Ile Met Lys Ile Val Asn Ile Phe Val
 20 25 30
 Ala Leu Phe Cys Leu Thr Ala Cys Ser Leu Ser Asn Asp Leu Lys Asp
 35 40 45
 Arg Leu Ile Leu Lys Pro Gln Ser Ile Leu Ile Asp Pro Asp Lys Val
 50 55 60
 Lys Asp Phe Ile Asp Leu Thr Pro Leu Leu Arg Asp Ser Val Glu Ile
 65 70 75 80
 Ile Pro Leu Glu Thr Lys Asp Glu Cys Leu Leu Ser Glu Ile Glu Arg
 85 90 95
 Ile Glu Phe Tyr Lys Asp Arg Ile Phe Val Leu Asp Arg Thr Arg Lys
 100 105 110
 Gly Val Tyr Met Phe Asp Gln Ser Gly Arg Phe Ile Gly Lys Ile Gly
 115 120 125
 Cys Gln Gly Ser Gly Pro Gly Glu Phe Thr Ser Val Gly Phe Phe Cys
 130 135 140
 Val Thr Gly Asp Ser Val Leu Ile Ser Asp Gln His Gln Ser Lys Trp
 145 150 155 160
 Val Val Tyr Asn Leu Gln Asp Lys Arg Thr Thr Glu Phe Ser Cys Gly
 165 170 175
 Glu Phe Thr Tyr Leu Asn Gly Phe Leu Met Gly Arg Asn Leu Tyr Leu
 180 185 190
 Val Ser Asn Tyr Asn Lys Ser Gln Ser Asp Arg Phe Asn Leu Tyr Lys
 195 200 205
 Phe Asp Val Ser Thr Arg Lys Ile Glu Glu Ala Leu Ile Pro Phe Glu
 210 215 220
 Glu Lys Met Asp Lys Tyr Ser Thr Thr Ala Phe Thr Ile Tyr Ala Ser
 225 230 235 240
 Gln Tyr Gln Asp Thr Ala Phe Leu Ile Tyr Pro Phe Asn Asp Thr Ile
 245 250 255
 Tyr Glu Val Ser Ser Lys Gly Ala Gln Pro Phe Tyr Thr Ile Asp Phe
 260 265 270
 Thr Gln Arg Asn Leu Pro Asp Asp Ile Glu Pro Ile Asn Asn Ser Phe
 275 280 285
 Arg Leu Ala Val Ala Lys Gly Asn Phe Val Lys Gly Leu Ser Tyr Met
 290 295 300
 Gln Met Ser Gly Asn Tyr Ile Leu Gly Arg Tyr Ala Asp Lys Gly Tyr
 305 310 315 320
 Phe Arg Tyr Leu Ser Val Asp Arg Ser Thr Leu Lys Ser Thr Val Gly
 325 330 335
 Asn Ser Phe Val Val Arg Asp Leu Gly Tyr Leu Pro Val Thr Ser Phe
 340 345 350
 Tyr Thr Ile Gly Asp Ala Leu Val Ser Val Tyr Ser Ala Ser Ala Leu
 355 360 365

Met Gln Met Leu Asp Val Ile Leu Ser Pro Asp Ser Pro Ile Lys Glu
 370 375 380
 Lys Tyr Arg Thr Lys Phe Glu Ser Leu Lys Gln Ile Thr Asn Cys Glu
 385 390 395 400
 Gly Asn Pro Val Leu Lys Phe Gln Phe Glu Ser Ala Glu
 405 410

<210> 6571
 <211> 265
 <212> PRT
 <213> B.fragilis

<400> 6571
 Asp Ser Ser Ile Arg Leu Ser Ile Ser Ser Phe Phe Val Ala Leu Leu
 1 5 10 15
 Pro Glu Arg Lys Val Arg Ala Met Leu Gln Lys Thr Val Gly Ile Val
 20 25 30
 Leu His Val Leu Lys Tyr Asn Asp Thr Ser Asn Ile Val Glu Met Tyr
 35 40 45
 Thr Glu Leu Ser Gly Arg Ala Ser Phe Leu Val Thr Val Pro Arg Ser
 50 55 60
 Lys Lys Ala Thr Val Lys Ser Val Leu Phe Gln Pro Leu Ala Leu Ile
 65 70 75 80
 Glu Phe Glu Ala Asp Tyr Arg Pro Asn Thr Ser Leu Phe Arg Ile Lys
 85 90 95
 Glu Ala Lys Ser Phe Ser Pro Phe Thr Ser Ile Pro Tyr Asp Pro Phe
 100 105 110
 Lys Ser Ala Ile Ala Leu Phe Leu Ala Glu Phe Leu Tyr Arg Ala Ile
 115 120 125
 Arg Glu Glu Ala Glu Asn Arg Pro Leu Phe Ala Tyr Leu Gln His Ser
 130 135 140
 Ile Leu Trp Leu Asp Thr Cys Lys Ile Ser Phe Ala Asn Phe His Leu
 145 150 155 160
 Val Phe Leu Met Arg Leu Ser Arg Phe Leu Gly Leu Tyr Pro Asn Leu
 165 170 175
 Asp Asp Tyr His Ala Gly Asp Tyr Phe Asp Met Leu Asn Ala Thr Phe
 180 185 190
 Thr Ser Val Arg Pro Gln Leu His Ser Ser Tyr Ile Gln Pro Asp Glu
 195 200 205
 Ala Gly Arg Leu Leu Gln Leu Met Arg Met Asn Tyr Glu Thr Met His
 210 215 220
 Leu Phe Gly Met Asn Arg Thr Glu Arg Ala Arg Cys Leu Ala Ile Ile
 225 230 235 240
 Asn Glu Tyr Tyr Arg Leu His Leu Pro Asp Phe Pro Ile Leu Lys Ser
 245 250 255
 Leu Asp Val Leu Lys Glu Leu Phe Asp
 260 265

<210> 6572
 <211> 171
 <212> PRT
 <213> B.fragilis

<400> 6572
 Lys Pro Lys Ile Leu Met Ser Ile Asn Tyr Ala Val Thr Lys Lys Val
 1 5 10 15
 Asp Lys Ser Lys Gly Ile Ala Lys Glu Arg Tyr Tyr Ala Thr Thr Arg
 20 25 30
 Ala Leu Gln Lys Lys Pro Val Asn Ser Val Gln Ile Ala Asn Gln Leu

35	40	45
Ala Glu Arg Ser Ser Leu Gln Asn Gly Asp Val Leu Ser Ala Leu Thr		
50	55	60
Gln Leu Ser Asp Ile Ile Ala Ala His Leu Lys Glu Gly Arg Thr Val		
65	70	75
Ser Ile Asp Gly Leu Gly Asn Phe Tyr Pro Ser Ile Thr Ser Glu Ala		
85	90	95
Val Asp Lys Pro Glu Glu Cys Thr Ala Asn Lys Val Trp Val Ser Arg		
100	105	110
Ile Cys Phe Lys Ala Ala Pro Ala Phe Leu Asn Asn Val Arg Lys Thr		
115	120	125
Asp Phe Val Ser Leu Gln Leu Lys Tyr Gly Arg Lys Ser Thr Lys Ser		
130	135	140
Gln Asn Gly Ser Asp Lys Glu Thr Thr Asp Val Ile Pro His Gln Gln		
145	150	155
Ser Ile Ser Glu Asp Ser Ser Leu Ser Asp Glu		160
165	170	

<210> 6573

<211> 352

<212> PRT

<213> B.fragilis

<400> 6573

Lys Asn Arg Met Leu Ile Met Ser Ala Ser Phe Asn Leu Leu Asp Arg		
1	5	10
Lys Arg Leu Lys Gly Leu Leu Leu Phe Cys Pro Val Trp Val Leu Leu		
20	25	30
Phe Trp Gly Cys Gly Arg Thr Val Glu Ser Pro Glu Lys Val Leu Lys		
35	40	45
Cys Glu Leu Val Ser Tyr Ile Lys Ser Tyr Pro Asp Ser Ser Phe Phe		
50	55	60
Ser Gln Val Gly Thr Met Gln Tyr Gln Asp Gly Lys Ile Tyr Leu Leu		
65	70	75
Asp Glu Ala Arg Arg Asp Val Ala Val Met Asp Leu Glu Phe Ser Asp		
85	90	95
Phe Ser Leu Ile Gly Lys Pro Gly Asp Gly Pro Gly Glu Leu Val Arg		
100	105	110
Pro Val Gly Phe Tyr Val Glu Lys Asp Thr Val Tyr Ile Leu Asp Gly		
115	120	125
Gly Thr Val Asn Val Lys Arg Tyr Phe Asp Ser Glu Phe Ile Ser Ser		
130	135	140
Phe Ser Val Pro Ala Ala Asn Asp Tyr Arg Phe Phe Met Asn Lys Asp		
145	150	155
Thr Ile Phe Leu Ser Ala Val Thr Asp Ser Thr Phe Tyr Thr Lys Ser		
165	170	175
Ala Glu Ser Trp Gln Arg Gly Asp Leu Phe Thr Leu Val Leu Ala Gly		
180	185	190
Asn Val His Asp Phe Gly Asn Ala Arg Arg Asn Met Val Leu Asn Gln		
195	200	205
Arg His Leu Val Lys Asp Ser Thr Ser Leu Tyr Gly Ile Thr Ser Ser		
210	215	220
Ser Ser Leu Leu Gly Lys Tyr Asp Leu Ser Ser Asn Lys Gln Val Ala		
225	230	235
Thr Phe Asp Leu Ser Ser Val Ser Leu Ile Lys Asp Asn Leu Thr Tyr		
245	250	255
Glu Gly Ser Gln Pro Tyr Asp Pro Lys Ser Tyr Tyr Thr Phe Ile Ser		
260	265	270
Asp Ala Tyr Ala Met Asn Gly Tyr Leu Tyr Leu Leu Cys Ser Glu Leu		

275	280	285
Lys Asp Arg Asp Lys Gly Gly Phe Arg Val Asn Lys Ile Leu Cys Leu		
290	295	300
Lys Thr Glu Pro Glu Leu Gln Leu Asp Val Ile Tyr Ala Leu Pro Gly		
305	310	315
Glu Ile Tyr Thr Ser Phe Cys Val Thr Pro Asp Tyr Ile Phe Ala Thr		
325	330	335
Asn Tyr Ser Asn Glu Arg Ile Glu Lys Leu Ala Leu Pro Val Ser Asp		
340	345	350

<210> 6574
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 6574
Gly Glu Met Ile Arg Phe Leu Gly Asn Ile Glu Ala Lys Ala Asp Ala
1 5 10 15
Lys Gly Arg Val Phe Ile Pro Ala Gln Phe Arg Arg Gln Leu Gln Ser
20 25 30
Gly Ser Glu Asp Lys Leu Ile Met Arg Lys Asp Val Phe Gln Asp Cys
35 40 45
Leu Val Leu Tyr Pro Glu Glu Val Trp Asn Glu Glu Leu Asp Glu Leu
50 55 60
Arg Gln Arg Leu Asn Lys Trp Asn Ala Asn His Gln Leu Ile Phe Arg
65 70 75 80
Gln Phe Val Ser Asp Val Glu Ile Ile Thr Met Asp Gly Asn Gly Arg
85 90 95
Ile Leu Ile Pro Lys Arg Tyr Leu Gln Ile Thr Gly Ile Gln Ser Asp
100 105 110
Val Arg Phe Ile Gly Val Asp Asn Lys Ile Glu Ile Trp Ala Lys Glu
115 120 125
Arg Ala Glu Lys Leu Phe Met Glu Pro Glu Ala Phe Gly Ala Ala Leu
130 135 140
Glu Glu Ile Met Lys Glu Glu Arg Arg Thr Thr Asn Asn Glu Leu Lys
145 150 155 160

<210> 6575
 <211> 708
 <212> PRT
 <213> B.fragilis

<400> 6575
Lys Met Ala Val Asn Lys Lys Asn Ile Met Thr Arg Tyr Phe Phe Val
1 5 10 15
Ile Leu Leu Met Gly Leu Ile Gly Val Ala Ile Val Val Lys Ala Gly
20 25 30
Ile Thr Met Phe Ala Glu Arg Gln Tyr Trp Gln Asp Val Ala Asp Arg
35 40 45
Phe Val Lys Glu Asn Val Thr Val Lys Pro Asn Arg Gly Asn Ile Ile
50 55 60
Ser Ser Asp Gly Lys Leu Met Ala Ser Ser Leu Pro Glu Tyr Arg Ile
65 70 75 80
Tyr Met Asp Phe Lys Ala Gly Gly Val Lys Lys Asp Thr Met Leu Met
85 90 95
Asn His Leu Asp Glu Ile Cys Glu Gly Leu His Lys Ile Phe Pro Asp
100 105 110
Lys Ser Ala Ser Glu Phe Lys Thr His Leu Lys Lys Gly Arg Lys Gln
115 120 125

Gly	Ser	Arg	Asn	Tyr	Leu	Ile	Tyr	Pro	Lys	Arg	Ile	Ser	Tyr	Ile	Gln
130						135					140				
Tyr	Lys	Glu	Ala	Lys	Arg	Leu	Pro	Val	Phe	Asn	Leu	Asn	Lys	Tyr	Lys
145					150					155					160
Gly	Gly	Phe	His	Glu	Leu	Ala	Tyr	Asn	Gln	Arg	Lys	Lys	Pro	Phe	Gly
				165					170						175
Ser	Leu	Ala	Ala	Arg	Thr	Leu	Gly	Asp	Leu	Tyr	Ala	Asp	Thr	Ala	Gln
			180					185					190		
Gly	Ala	Lys	Asn	Gly	Ile	Glu	Leu	Ala	Phe	Asp	Ser	Ile	Leu	Lys	Gly
	195						200					205			
His	Asp	Gly	Ile	Thr	His	Arg	Gln	Lys	Val	Met	Asn	Lys	Tyr	Leu	Asn
210						215					220				
Ile	Val	Asp	Ile	Pro	Pro	Val	Asp	Gly	Cys	Asp	Leu	Leu	Ser	Thr	Ile
225				230						235					240
Asp	Val	Gly	Met	Gln	Asp	Ile	Cys	Glu	Lys	Ala	Leu	Thr	Asp	Lys	Leu
			245							250					255
Lys	Glu	Leu	Asn	Ala	Ser	Val	Gly	Val	Ala	Val	Leu	Met	Glu	Val	Ala
			260						265					270	
Thr	Gly	Glu	Val	Lys	Ala	Ile	Val	Asn	Met	Thr	Lys	Ala	Gly	Asp	Gly
	275						280					285			
Asn	Tyr	Tyr	Glu	Met	Arg	Asn	Asn	Ala	Ile	Ser	Asp	Met	Leu	Glu	Pro
290						295					300				
Gly	Ser	Thr	Phe	Lys	Thr	Ala	Ser	Ile	Met	Val	Ala	Leu	Glu	Asp	Gly
305					310					315					320
Lys	Ile	Thr	Pro	Glu	Asp	Gly	Ile	Asp	Thr	Gly	Asn	Gly	Ile	Lys	Met
				325						330					335
Met	His	Gly	Arg	Pro	Met	Lys	Asp	Trp	Asn	Trp	Tyr	Lys	Gly	Gly	Tyr
			340					345					350		
Gly	Tyr	Leu	Thr	Val	Thr	Gln	Ile	Leu	Glu	Val	Ser	Ser	Asn	Ile	Gly
	355					360						365			
Thr	Ser	Ser	Ile	Ile	Glu	Lys	Tyr	Tyr	Gly	Ser	Asn	Pro	Gln	Lys	Phe
370						375					380				
Val	Asp	Gly	Leu	Lys	Arg	Met	Ser	Ile	Asp	Gln	Pro	Leu	Gln	Leu	Gln
385					390					395					400
Ile	Ala	Gly	Glu	Gly	Lys	Pro	Asn	Ile	Lys	Gly	Pro	Lys	Glu	Arg	Tyr
			405							410					415
Phe	Ala	Lys	Thr	Thr	Leu	Pro	Trp	Met	Ser	Ile	Gly	Tyr	Glu	Thr	Gln
			420					425					430		
Val	Pro	Pro	Met	Asn	Ile	Leu	Thr	Phe	Tyr	Asn	Ala	Ile	Ala	Asn	Asn
	435						440					445			
Gly	Val	Met	Val	Arg	Pro	Lys	Phe	Val	Lys	Ala	Ala	Ile	Lys	Asn	Gly
	450					455					460				
Glu	Ile	Val	Lys	Glu	Tyr	Pro	Thr	Glu	Ile	Ile	Asn	Pro	Lys	Ile	Cys
465					470					475					480
Ser	Glu	Arg	Thr	Leu	Lys	Gln	Ile	Gln	Glu	Ile	Leu	Tyr	Lys	Val	Val
			485						490					495	
His	Glu	Gly	Leu	Ala	Ala	Pro	Ala	Gly	Ser	Lys	Gln	Phe	Ala	Val	Ser
			500					505					510		
Gly	Lys	Thr	Gly	Thr	Ala	Gln	Ile	Ser	Gln	Gly	Ala	Ala	Gly	Tyr	Lys
	515					520						525			
Ser	Gly	Arg	Val	Asn	Tyr	Leu	Val	Ser	Phe	Cys	Gly	Tyr	Phe	Pro	Ser
	530					535					540				
Glu	Ala	Pro	Lys	Tyr	Ser	Cys	Ile	Val	Ser	Ile	Gln	Lys	Pro	Gly	Leu
545					550					555					560
Pro	Ala	Ser	Gly	Gly	Leu	Met	Ala	Gly	Ser	Val	Phe	Ser	Lys	Ile	Ala
			565					570						575	
Glu	Arg	Val	Tyr	Ala	Lys	Asp	Leu	Arg	Leu	Asp	Ile	Arg	Asn	Ala	Ile
	580							585					590		
Asp	Thr	Asn	Thr	Val	Val	Ile	Pro	Asp	Val	Lys	Ala	Gly	Glu	Met	Ile

595 600 605
 Glu Ala Arg Gln Val Leu Glu Gly Leu Asn Ile Gln Thr Gln Ala Glu
 610 615 620
 Phe Lys Ala Lys Lys Asn Lys Glu Val Trp Gly His Ala Gln Ala Ala
 625 630 635 640
 Pro Lys Ala Val Ile Leu Gln Gly Lys Glu Gln Leu Arg Asn Phe Val
 645 650 655
 Pro Ser Val Ile Gly Met Gly Ala Lys Asp Ala Val Tyr Leu Leu Glu
 660 665 670
 Ser Lys Gly Leu Lys Val Thr Leu Ser Gly Val Gly Lys Val Lys Ser
 675 680 685
 Gln Ser Leu Pro Gln Gly Thr Thr Ile Lys Lys Gly Gln Thr Ile Ser
 690 695 700
 Ile His Leu Asn
 705

<210> 6576
 <211> 376
 <212> PRT
 <213> B.fragilis

<400> 6576
 Ala Pro Asp Val Ile Gln Ser Lys Ser Val Asn Arg Leu Thr Val Asn
 1 5 10 15
 Lys Val Met Leu Tyr Tyr Leu Phe Glu Trp Leu His Lys Leu Asn Phe
 20 25 30
 Pro Gly Ala Gly Met Phe Gly Tyr Thr Ser Phe Arg Ala Leu Met Ala
 35 40 45
 Ile Ile Leu Ala Leu Leu Ile Ser Ser Ile Trp Gly Asp Lys Phe Ile
 50 55 60
 Asn Leu Leu Lys Arg Lys Gln Ile Thr Glu Thr Gln Arg Asp Ala Lys
 65 70 75 80
 Ile Asp Pro Phe Gly Val Asn Lys Val Gly Val Pro Ser Met Gly Gly
 85 90 95
 Val Ile Ile Ile Val Ala Ile Leu Ile Pro Cys Leu Leu Leu Gly Lys
 100 105 110
 Leu His Asn Ile Tyr Met Ile Leu Met Leu Ile Thr Thr Val Trp Leu
 115 120 125
 Gly Ser Leu Gly Phe Ala Asp Asp Tyr Ile Lys Ile Phe Lys Lys Asp
 130 135 140
 Lys Glu Gly Leu His Gly Lys Phe Lys Ile Ile Gly Gln Val Gly Leu
 145 150 155 160
 Gly Leu Ile Val Gly Leu Thr Leu Tyr Leu Ser Pro Asp Val Val Ile
 165 170 175
 Arg Glu Asn Ile Glu Val Gln Lys Ser Glu Asn Glu Ile Glu Val Ile
 180 185 190
 His Gly Thr His Asp Leu Lys Ser Thr Gln Thr Thr Ile Pro Val Phe
 195 200 205
 Lys Ser Asn Asn Leu Glu Tyr Ala Asp Leu Val Gly Phe Met Gly Glu
 210 215 220
 His Ala Gln Thr Ala Gly Trp Ile Leu Phe Val Ile Ile Thr Ile Phe
 225 230 235 240
 Val Val Thr Ala Val Ser Asn Gly Ala Asn Leu Asn Asp Gly Met Asp
 245 250 255
 Gly Met Ala Ala Gly Asn Ser Ala Ile Ile Gly Leu Thr Leu Gly Ile
 260 265 270
 Leu Ala Tyr Val Ser Ser His Ile Glu Phe Ala Gly Tyr Leu Asn Ile
 275 280 285
 Met Tyr Ile Pro Gly Ser Glu Glu Leu Val Ile Phe Ile Cys Ala Phe

290		295		300
Ile Gly Ala Leu Ile Gly Phe Leu Trp Tyr Asn Ala Tyr Pro Ala Gln				
305		310		315
Val Phe Met Gly Asp Thr Gly Ser Leu Thr Ile Gly Gly Ile Ile Ala				
	325		330	
Val Phe Ala Ile Ile Ile His Lys Glu Leu Leu Ile Pro Ile Leu Cys				
	340		345	
Gly Ile Phe Leu Val Glu Asn Arg His Ala Ile Gly Ile Thr Ser Ile				
	355		360	
Ile Lys Pro Glu Lys Glu Arg Val			365	
	370		375	

<210> 6577
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 6577
Asn Arg Leu Val Glu Met Ala Asn His Lys Ser Ser Ile Lys Arg Ile
1 5 10 15
Arg Gln Glu Glu Thr Arg Arg Leu Arg Asn Arg Tyr Tyr Gly Lys Thr
20 25 30
Met Arg Asn Ala Val Arg Lys Leu Arg Ser Thr Thr Asp Lys Ala Glu
35 40 45
Ala Thr Ala Met Tyr Pro Gly Ile Val Lys Met Val Asp Lys Leu Ala
50 55 60
Lys Thr Asn Val Ile His Lys Asn Lys Ala Asn Asn Leu Lys Ser Lys
65 70 75 80
Leu Ala Ile Tyr Ile Asn Lys Leu Ala
85

<210> 6578
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 6578
Lys Arg Thr Val Asn Phe Ala Gln Ser Phe His Leu Lys Arg Met Ala
1 5 10 15
Asp Asp Ser Leu Phe Leu Ile Asp Ile Asp Lys Ile Leu Gln Thr Lys
20 25 30
Ala Pro Lys His Tyr Lys Tyr Ile Pro Lys Phe Val Val Ser Tyr Leu
35 40 45
Lys Arg Ile Val His Gln Glu Glu Leu Asn Val Phe Leu Arg Asp Ser
50 55 60
Lys Asp Lys Val Gly Val Asp Phe Leu Gly Ala Cys Leu Glu Phe Leu
65 70 75 80
Asp Ala Lys Leu Glu Val Lys Gly Leu Glu Asn Ile Pro Lys Asp Gly
85 90 95
Leu Tyr Thr Phe Val Ser Asn His Pro Leu Gly Gly Gln Asp Gly Val
100 105 110
Ser Leu Gly Tyr Ile Leu Gly Arg His Phe Asp Gly Lys Val Lys Tyr
115 120 125
Leu Val Asn Asp Leu Leu Met Asn Leu His Gly Leu Ala Pro Leu Cys
130 135 140
Ile Pro Ile Asn Lys Thr Gly Lys Gln Ala Lys Asp Phe Pro Lys Met
145 150 155 160
Val Glu Ala Gly Phe Lys Ser Asp Asp Gln Leu Ile Met Phe Pro Ala
165 170 175

Gly Leu Cys Ser Arg Arg Gln Asn Gly Val Ile Arg Asp Leu Asp Trp
 180 185 190
 Lys Lys Thr Phe Ile Val Lys Ser Val Gln Phe Gln Arg Asp Val Ile
 195 200 205
 Pro Val His Phe Glu Gly Arg Asn Ser Asp Phe Phe Tyr Asn Leu Ala
 210 215 220
 Asn Leu Cys Lys Ala Leu Gly Ile Lys Phe Asn Ile Ala Met Leu Tyr
 225 230 235 240
 Leu Ala Asp Glu Met Leu Lys Asn Arg His Lys Thr Phe Thr Val Thr
 245 250 255
 Phe Gly Lys Pro Ile Pro Trp Gln Thr Phe Asp Lys Ser Lys Thr Pro
 260 265 270
 Ala Glu Trp Ala Gln Tyr Val Lys Asp Ile Val Tyr Lys Leu
 275 280 285

<210> 6579

<211> 71

<212> PRT

<213> B.fragilis

<400> 6579

Cys Phe His Ser Ser Gly Pro Val Phe Val Leu Arg Leu Phe Ser Val
 1 5 10 15
 Leu Leu Val Pro Leu Pro Val Arg Val Thr Phe Pro Gly Val Thr Leu
 20 25 30
 Leu Leu Ser Arg Glu Ala Glu Leu Ser Leu Trp Asp Thr Pro Leu Leu
 35 40 45
 Thr Ser Ser Leu Arg Pro Glu Leu Glu Arg Met Val Thr Asp Pro Lys
 50 55 60
 Ser Glu Arg Arg Cys Val Leu
 65 70

<210> 6580

<211> 115

<212> PRT

<213> B.fragilis

<400> 6580

Gly Ser Gly Ser Phe Ser Pro Val Val Lys Thr Ala Glu Leu Asp Ser
 1 5 10 15
 Thr Thr Val Val Arg Phe Asn Gln Met Gln Phe His Pro Tyr Leu Lys
 20 25 30
 Ala Glu Lys Lys Lys Gln Gln Trp His Phe Thr Ala Ala Val Asp Lys
 35 40 45
 Pro Trp Phe Pro Ala Asp Gln Leu Phe Gly Ser Leu Pro Lys Gly Leu
 50 55 60
 Phe Ser Asn Leu Glu Gly Ile Lys Thr Ser Gly Glu Leu Ala Tyr His
 65 70 75 80
 Phe Phe Leu Asp Ala Asn Phe Ala Leu Leu Asn Ser Leu Lys Met Glu
 85 90 95
 Ile Glu Pro Glu Gly Lys Glu Phe Pro His Gly Lys Leu Arg Gly His
 100 105 110
 Lys Ser Gly
 115

<210> 6581

<211> 281

<212> PRT

<213> B.fragilis

<400> 6581

Arg Val Lys Ser Pro Val Pro Leu Leu Asn Pro Gly Gly Tyr Gln Thr
 1 5 10 15
 Asn Arg Val Gly Leu Leu Phe Leu Leu His Asn Lys Ile Thr Tyr Lys
 20 25 30
 Ile Ser Ala Leu Met Lys Met Ala Leu Ser Asp Phe Ala Leu Arg Lys
 35 40 45
 Lys Gly Ile Tyr Gly Ile Leu His Val Ile Ile Leu Leu Ser Leu
 50 55 60
 Phe Leu Val Ile Ser Ile Ser Ile Asp Thr Phe Lys Gly Ile Pro Phe
 65 70 75 80
 Tyr Thr Gln Ser Val Tyr Met Lys Val Gln Leu Trp Ile Cys Val Leu
 85 90 95
 Phe Leu Phe Asp Phe Ile Leu Glu Leu Phe Leu Ser Lys Asn Lys Trp
 100 105 110
 His Tyr Leu Ser Thr His Phe Ile Phe Leu Leu Val Ala Ile Pro Tyr
 115 120 125
 Gln Asn Ile Ile Ser Tyr Met Gly Trp Thr Phe Ser Pro Glu Val Thr
 130 135 140
 Tyr Met Ile Arg Phe Val Pro Leu Val Arg Gly Gly Tyr Ala Met Ala
 145 150 155 160
 Ile Val Val Gly Trp Leu Thr Tyr Asn Lys Ala Ser Gly Leu Phe Val
 165 170 175
 Ser Tyr Leu Thr Met Leu Leu Ala Thr Val Tyr Phe Ser Ser Leu Ala
 180 185 190
 Phe Phe Val Leu Glu His Lys Val Asn Pro Leu Val Thr Gly Tyr Gly
 195 200 205
 Asp Ala Leu Trp Trp Ala Phe Met Asp Val Thr Thr Val Gly Ser Asn
 210 215 220
 Ile Ile Ala Val Thr Val Thr Gly Arg Val Leu Ser Val Leu Leu Ala
 225 230 235 240
 Ala Leu Gly Met Met Met Phe Pro Ile Phe Thr Val Tyr Val Thr Ser
 245 250 255
 Leu Ile Gln Lys Lys Asn Lys Glu Lys Glu Tyr Tyr Lys Gln Leu
 260 265 270
 Glu Ala Ala Asp Glu Ser Lys Pro Lys
 275 280

<210> 6582

<211> 325

<212> PRT

<213> B.fragilis

<400> 6582

Gln Leu Leu Pro Leu Asp Trp Glu Ile Arg Cys Lys Asp Arg Phe Leu
 1 5 10 15
 Pro Val Gly Cys Asn Ala Ser Cys Ile Phe Leu Leu Ser Ser Phe Arg
 20 25 30
 Leu Ile Ala Ile Leu Phe Val Leu Leu His Pro Lys Ile Arg Arg Met
 35 40 45
 Asn His Val Thr Thr Tyr Ile Arg Gln Ala Leu His Asp Ile Tyr Pro
 50 55 60
 Pro Gly Glu Leu Arg Ser Leu Thr Lys Ile Ile Cys Cys Asp Leu Leu
 65 70 75 80
 Gly Gln Asp Ala Ile Asp Tyr Tyr Leu Gly Lys Asp Ile Thr Leu Ser
 85 90 95
 Ala Asn Glu Gln Cys Asp Leu Glu Ser Ile Val Glu Arg Leu Lys Lys
 100 105 110

Asn Glu Pro Ile Gln Tyr Ile Gln Gly Glu Thr Cys Phe Tyr Gly Ser
 115 120 125
 Met Phe Arg Val Ala Pro Gly Val Leu Ile Pro Arg Pro Glu Thr Glu
 130 135 140
 Glu Leu Val Asp Leu Val Val Lys Glu Ala Ala Thr Gly Thr Arg Leu
 145 150 155 160
 Leu Asp Ile Gly Thr Gly Ser Gly Cys Ile Ala Ile Ser Leu Ala Lys
 165 170 175
 His Ile Pro Gln Ala Val Val Thr Ala Trp Asp Val Ser Glu Glu Ala
 180 185 190
 Leu Ala Ile Ala Gly Glu Asn Asn Arg Glu Leu Lys Ala Gly Val His
 195 200 205
 Phe Glu Lys Met Asp Val Leu Ser Ala Glu Pro Val Gly Asp Asp Gln
 210 215 220
 Tyr Asp Met Ile Val Ser Asn Pro Pro Tyr Val Thr Glu Ser Glu Lys
 225 230 235 240
 Asn Glu Met Glu Pro Asn Val Leu Asp Trp Glu Pro Arg Leu Ala Leu
 245 250 255
 Phe Val Pro Asp Asn Asp Pro Leu Arg Phe Tyr Arg Arg Ile Ala Ser
 260 265 270
 Leu Gly Arg Lys Met Leu Arg Leu His Gly Arg Leu Tyr Phe Glu Ile
 275 280 285
 Asn Arg Ala Tyr Gly Glu Glu Val Leu Gln Met Leu His Glu Gln Gly
 290 295 300
 Tyr Glu Glu Leu Arg Leu Ile Lys Asp Ile Ser Gly Asn Asp Arg Ile
 305 310 315 320
 Val Thr Ala Lys Arg
 325

<210> 6583

<211> 191

<212> PRT

<213> B.fragilis

<400> 6583

Ser Leu Asn Thr Lys Ile Asp Met Asp Asp Gln Ile Lys Gln Ile Ala
 1 5 10 15
 Glu Arg Leu Arg Gly Leu Arg Asp Val Leu Glu Leu Thr Ala Glu Asp
 20 25 30
 Ile Ala Arg Asp Cys Glu Ile Ser Ala Glu Glu Tyr Arg Leu Ala Glu
 35 40 45
 Thr Gly Asp Tyr Asp Ile Ser Val Ser Met Leu Gln Lys Ile Ala Arg
 50 55 60
 Lys Tyr Gly Ile Ala Leu Asp Ala Leu Met Phe Gly Glu Glu Pro Lys
 65 70 75 80
 Met Ser Ser Tyr Phe Leu Thr Arg Ala Gly Lys Gly Thr Ser Ile Glu
 85 90 95
 Arg Thr Lys Ala Tyr Lys Tyr Gln Ser Leu Ala Ala Gly Phe Met Asn
 100 105 110
 Arg Asn Ala Asp Pro Phe Ile Val Thr Val Glu Pro Lys Pro Asp Ile
 115 120 125
 Glu Pro Ile His Tyr Asn Ser His Ser Gly Gln Glu Phe Asn Leu Val
 130 135 140
 Leu Glu Gly Arg Met Met Ile Ser Ile Asp Gly Lys Asp Leu Ile Leu
 145 150 155 160
 Asn Glu Gly Asp Ser Leu Tyr Phe Asn Ser Lys Leu Pro His Gly Met
 165 170 175
 Lys Ala Leu Asp Gly Lys Thr Val Arg Phe Leu Ala Val Ile Met
 180 185 190

<210> 6584
 <211> 62
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (56), (57), (58)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6584
 Tyr Gly Val Thr Val Val Pro Thr Lys Tyr Gly Ala Asp Asp Ser Ile
 1 5 10 15
 Asn Leu Val Leu Lys Asp Arg Thr Thr Thr Asn Glu Met Ser Tyr Lys
 20 25 30
 Glu Gln Ile Asp Leu Asn Arg Ile Pro Lys His Val Val Val Thr Ala
 35 40 45
 Glu Cys Asn Ala Cys Ser Ile Xaa Xaa Xaa Pro Ala Ser Pro
 50 55 60

<210> 6585
 <211> 308
 <212> PRT
 <213> B.fragilis

<400> 6585
 Gln Ala Asp Ala Ala Ile Cys Phe Ser Ala Ala Asn His Ser Tyr Val
 1 5 10 15
 Cys Phe Leu Phe Ile Phe Ala Val Asn Arg Met Lys Ile Met Ser Ile
 20 25 30
 Glu Leu Gly Lys Phe Asn Gln Leu Glu Val Val Lys Gln Val Asp Phe
 35 40 45
 Gly Met Tyr Leu Asp Gly Gly Glu Glu Gly Glu Ile Leu Leu Pro Thr
 50 55 60
 Arg Tyr Val Pro Glu Asp Cys Lys Leu Gly Asp Trp Leu Asn Val Phe
 65 70 75 80
 Leu Tyr Leu Asp Asn Glu Glu Arg Leu Ile Ala Thr Thr Leu Thr Pro
 85 90 95
 Leu Val Gln Val Gly Glu Phe Ala Cys Leu Glu Val Ser Trp Val Asn
 100 105 110
 Gln Phe Gly Ala Phe Leu Asn Trp Gly Leu Met Lys Asp Leu Phe Val
 115 120 125
 Pro Phe Ser Glu Gln Lys Met Lys Met Gln Val Gly Asn Lys Tyr Val
 130 135 140
 Ile His Ala His Ile Asp Asp Glu Ser Phe Arg Ile Val Ala Ser Ala
 145 150 155 160
 Lys Val Asp Arg Tyr Leu Ser Lys Glu Lys Ala Ser Tyr Gln Pro Gly
 165 170 175
 Glu Glu Val Asn Ile Leu Ile Trp Gln Lys Thr Asp Leu Gly Phe Lys
 180 185 190
 Ala Ile Ile Glu Asn Met Tyr Ser Gly Leu Leu Tyr Asp Ser Glu Ile
 195 200 205
 Phe Gln Thr Leu His Thr Gly Asp Val Leu Lys Ala Tyr Val Lys Gln
 210 215 220
 Val Arg Glu Asp Gly Lys Ile Asp Leu Ile Leu Gln Lys Pro Gly Phe
 225 230 235 240
 Glu Lys Ile Asp Asp Phe Ser Lys Thr Leu His Arg Tyr Ile Thr Glu
 245 250 255

His Gly Gly Trp Ile Gly Leu Thr Asp Lys Ser Pro Ala Glu Glu Ile
 260 265 270
 Tyr Asp Thr Phe Gly Val Ser Lys Lys Thr Phe Lys Lys Ala Val Gly
 275 280 285
 Asp Leu Tyr Lys Lys Arg Leu Ile Leu Leu His Glu Asp Gly Ile Glu
 290 295 300
 Leu Val Arg Pro
 305

<210> 6586
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 6586
 Ser Cys Pro Ala Ala Asp Tyr Pro His Arg Cys Arg Val Ile Phe Thr
 1 5 10 15
 Trp Asn Gly Lys Gln Tyr Ala Ala Tyr Thr Phe Val Phe His Ser His
 20 25 30
 Phe Asp Arg Cys Gly Phe Gln Glu Ala Phe Asp Thr Cys Tyr Phe Pro
 35 40 45
 Trp Thr Ala Arg Glu His Phe Asn Leu Arg Asn Leu Ser Ala Tyr Tyr
 50 55 60
 His Leu Leu Leu Ile Val
 65 70

<210> 6587
 <211> 457
 <212> PRT
 <213> B.fragilis

<400> 6587
 Tyr Val Ile Tyr Asp Thr Ile Leu Ile Ala Met Ala Gln Lys Leu Trp
 1 5 10 15
 Glu Lys Ser Val Glu Val Asn Lys Asp Ile Glu Arg Phe Thr Val Gly
 20 25 30
 Arg Asp Arg Glu Met Asp Leu Tyr Leu Ala Lys His Asp Val Leu Gly
 35 40 45
 Ser Met Ala His Ile Thr Met Leu Glu Ser Ile Gly Leu Leu Thr Lys
 50 55 60
 Glu Glu Leu Ala Gln Leu Leu Thr Glu Leu Lys Asp Ile Tyr Ala Ser
 65 70 75 80
 Ala Glu Arg Gly Glu Phe Val Ile Glu Glu Gly Val Glu Asp Val His
 85 90 95
 Ser Gln Val Glu Leu Met Leu Thr Arg Arg Leu Gly Asp Val Gly Lys
 100 105 110
 Lys Ile His Ser Gly Arg Ser Arg Asn Asp Gln Val Leu Leu Asp Leu
 115 120 125
 Lys Leu Phe Thr Arg Thr Gln Ile Arg Glu Val Ala Glu Ala Val Glu
 130 135 140
 Gln Leu Phe His Val Leu Ile Arg Gln Ser Glu Arg Tyr Lys Asn Val
 145 150 155 160
 Leu Met Pro Gly Tyr Thr His Leu Gln Ile Ala Met Pro Ser Ser Phe
 165 170 175
 Gly Leu Trp Phe Gly Ala Tyr Ala Glu Ser Leu Val Asp Asp Met Leu
 180 185 190
 Phe Leu Gln Ala Ala Phe Lys Met Cys Asn Lys Asn Pro Leu Gly Ser
 195 200 205
 Ala Ala Gly Tyr Gly Ser Ser Phe Pro Leu Asn Arg Thr Met Thr Thr

210	215	220
Glu Leu Leu Gly Phe Asp Ser Leu Asn Tyr Asn Val Val Tyr Ala Gln		
225	230	235
Met Gly Arg Gly Lys Met Glu Arg Asn Val Ala Phe Ala Leu Ala Thr		240
	245	250
Leu Ala Gly Thr Ile Ser Lys Leu Ala Phe Asp Ala Cys Met Phe Asn		255
	260	265
Ser Gln Asn Phe Gly Phe Val Lys Leu Pro Asp Glu Cys Thr Thr Gly		270
	275	280
Ser Ser Ile Met Pro His Lys Lys Asn Pro Asp Val Phe Glu Leu Thr		285
	290	295
Arg Ala Lys Cys Asn Lys Leu Gln Ser Leu Pro Gln Gln Ile Met Met		300
305	310	315
Ile Ala Asn Asn Leu Pro Ser Gly Tyr Phe Arg Asp Leu Gln Ile Ile		320
	325	330
Lys Glu Val Phe Leu Pro Ala Phe Gln Glu Leu Lys Asp Cys Leu Gln		335
	340	345
Met Thr Thr Tyr Ile Met Asn Glu Ile Lys Val Asn Glu His Ile Leu		350
	355	360
Asp Asp Asp Lys Tyr Leu Phe Ile Phe Ser Val Glu Glu Val Asn Arg		365
	370	375
Leu Ala Arg Glu Gly Met Pro Phe Arg Asp Ala Tyr Lys Lys Val Gly		380
385	390	395
Leu Asp Ile Glu Ala Gly His Phe Ser His Asp Lys Gln Val His His		400
	405	410
Thr His Glu Gly Ser Ile Gly Asn Leu Cys Asn Asp Glu Ile Ser Ala		415
	420	425
Leu Met Gln Arg Thr Ile Glu Gly Phe Asn Phe Gln Gly Met Glu Gln		430
	435	440
Ala Glu Lys Thr Leu Leu Gly Arg Lys		445
450	455	

<210> 6588

<211> 161

<212> PRT

<213> B.fragilis

<400> 6588

Ser Asn Cys Asn Arg Gln Thr Met Asn Thr Ile Thr Glu Glu Glu Ala		
1	5	10
Leu Asn Arg Met Ala Ala Tyr Cys Ser Ala Ala Glu His Cys Lys Ala		15
	20	25
Glu Val Asn Glu Lys Leu Gln Lys Trp Gly Leu Pro Tyr Glu Val Ile		30
	35	40
Asn Arg Ile Ile Asp Arg Leu Val Val Glu Lys Phe Ile Asp Glu Glu		45
	50	55
Arg Tyr Cys Arg Ala Phe Val Asn Asp Lys Phe Arg Phe Ala Lys Trp		60
65	70	75
Gly Lys Met Lys Ile Thr Gln Ala Leu Tyr Met Lys Lys Ile Pro Arg		80
	85	90
Glu Val Thr Tyr Arg Tyr Leu Asn Asp Ile Asp Arg Glu Glu Tyr Leu		95
	100	105
Ala Ile Leu Gly Asp Leu Ile Ala Ala Lys Arg Lys Ser Ile His Ala		110
	115	120
Lys Asp Glu Phe Glu Leu Asn Gly Lys Leu Ile Arg Phe Ala Met Ser		125
	130	135
Arg Gly Phe Glu Met Asp Asp Ile Arg Arg Cys Val Gln Val Glu Glu		140
145	150	155
Glu		160

<210> 6589
 <211> 415
 <212> PRT
 <213> B.fragilis

<400> 6589

Lys	Lys	Asn	Lys	Lys	Glu	Ile	Thr	Phe	Lys	Ile	Tyr	Ser	Thr	Met	Glu
1				5					10					15	
Gln	Lys	Lys	Lys	Val	Val	Val	Ala	Phe	Ser	Gly	Gly	Leu	Asp	Thr	Ser
			20					25					30		
Phe	Thr	Val	Met	Tyr	Leu	Ala	Lys	Glu	Lys	Gly	Tyr	Glu	Val	Tyr	Ala
		35					40					45			
Ala	Cys	Ala	Asn	Thr	Gly	Gly	Phe	Ser	Glu	Glu	Gln	Leu	Lys	Gln	Asn
		50				55					60				
Glu	Glu	Asn	Ala	Tyr	Lys	Leu	Gly	Ala	Val	Lys	Tyr	Val	Thr	Leu	Asp
65					70					75					80
Val	Thr	Gln	Glu	Tyr	Tyr	Glu	Lys	Ser	Leu	Lys	Tyr	Met	Ile	Phe	Gly
				85					90					95	
Asn	Val	Leu	Arg	Asn	Gly	Thr	Tyr	Pro	Ile	Ser	Val	Ser	Ser	Glu	Arg
			100					105						110	
Ile	Phe	Gln	Ala	Leu	Ala	Ile	Ala	Arg	Tyr	Ala	Lys	Glu	Ile	Gly	Ala
		115					120					125			
Glu	Ala	Ile	Ala	His	Gly	Ser	Thr	Gly	Ala	Gly	Asn	Asp	Gln	Ile	Arg
		130				135					140				
Phe	Asp	Met	Thr	Phe	Leu	Val	Met	Thr	Pro	Gly	Val	Glu	Ile	Ile	Thr
145					150					155					160
Leu	Thr	Arg	Asp	Met	Ala	Leu	Ser	Arg	Gln	Glu	Glu	Ile	Asp	Tyr	Leu
				165					170					175	
Asn	Lys	Asn	Gly	Phe	Glu	Ala	Asp	Phe	Thr	Lys	Leu	Lys	Tyr	Ser	Tyr
			180					185						190	
Asn	Val	Gly	Leu	Trp	Gly	Thr	Ser	Ile	Cys	Gly	Gly	Glu	Ile	Leu	Asp
		195					200					205			
Ser	Ala	Gln	Gly	Leu	Pro	Glu	Thr	Ala	Tyr	Leu	Lys	Gln	Val	Thr	Lys
		210				215					220				
Glu	Gly	Ser	Glu	Leu	Leu	Arg	Leu	Glu	Phe	Lys	Asn	Gly	Glu	Leu	His
225					230					235					240
Ala	Val	Asn	Gly	Glu	Val	Phe	Glu	Asp	Lys	Ile	Ala	Ala	Ile	Gln	Lys
				245					250					255	
Val	Glu	Glu	Ile	Gly	Ala	Ala	Tyr	Gly	Ile	Gly	Arg	Asp	Met	His	Val
			260					265					270		
Gly	Asp	Thr	Ile	Ile	Gly	Ile	Lys	Gly	Arg	Val	Gly	Phe	Glu	Ala	Ala
		275					280					285			
Ala	Pro	Met	Leu	Ile	Ile	Gly	Ala	His	Arg	Phe	Leu	Glu	Lys	Tyr	Thr
		290				295					300				
Leu	Ser	Lys	Trp	Gln	Gln	Tyr	Trp	Lys	Asp	Gln	Val	Ala	Asn	Trp	Tyr
305					310					315					320
Gly	Met	Phe	Leu	His	Glu	Ser	Gln	Tyr	Leu	Glu	Pro	Val	Met	Arg	Asp
				325					330					335	
Ile	Glu	Ala	Met	Leu	Gln	Glu	Ser	Gln	Arg	Asn	Val	Asn	Gly	Thr	Ala
			340					345					350		
Ile	Leu	Glu	Leu	Arg	Pro	Leu	Ser	Phe	Ser	Thr	Val	Gly	Val	Glu	Ser
		355					360					365			
Gln	Asp	Asp	Leu	Val	Lys	Thr	Lys	Phe	Gly	Glu	Tyr	Gly	Glu	Met	Gln
		370				375					380				
Lys	Gly	Trp	Thr	Ala	Glu	Asp	Ala	Lys	Gly	Phe	Ile	Lys	Val	Thr	Ser
385					390					395					400
Thr	Pro	Leu	Arg	Val	Tyr	Tyr	Ala	Asn	His	Lys	Asp	Glu	Glu	Val	

405

410

415

<210> 6590
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 6590
 Gly Phe Ser Lys Gly Ile Tyr Gln Tyr Asp Glu Arg Ile Gly Ile Glu
 1 5 10 15
 Cys Phe Cys Asp Gly Ala Arg Ile Arg Phe Ala Pro Asp Leu Leu Leu
 20 25 30
 Glu Asn Met Lys Thr Leu Ile Lys Thr Ala Gly Thr Asn Phe Leu Ile
 35 40 45
 Ile Asp Gly His His Cys Thr Glu Lys Thr Ala Val Ile Glu Thr Val
 50 55 60
 Asn Ser Met Met Leu Gln Thr Val Glu Gly Val Ile Tyr Leu Phe Pro
 65 70 75 80
 Cys Trp Thr Gln Thr Pro Ala Ala Phe Thr Arg Leu Arg Ala Lys Gly
 85 90 95
 Ala Phe Leu Val Ser Ala Asp Tyr Asp Gly Thr Ser Val Gly Gly Leu
 100 105 110
 Lys Ile Phe Ser Glu Lys Gly Gly Ile Cys Arg Leu Ser Asn Pro Trp
 115 120 125
 Arg Gly Arg Lys Leu Arg Val Thr Glu Asn Gly Lys Pro Val Ser Val
 130 135 140
 Lys Glu Gln Asn Asn Val Cys Ser Phe Ile Thr Arg Lys Gly Ser Thr
 145 150 155 160
 Tyr Thr Ile Val Gly Leu
 165

<210> 6591
 <211> 533
 <212> PRT
 <213> B.fragilis

<400> 6591
 Leu Met Ala Asn Ile Lys Gln Ala Val Lys Leu Gly Val Phe Thr Leu
 1 5 10 15
 Ala Ile Met Asn Val Thr Ala Val Val Ser Leu Arg Gly Leu Pro Ala
 20 25 30
 Glu Ala Val Tyr Gly Met Ser Ser Ala Phe Tyr Tyr Leu Phe Ala Ala
 35 40 45
 Ile Val Phe Leu Ile Pro Thr Ser Leu Val Ala Ala Glu Leu Ala Ala
 50 55 60
 Met Phe Gln Asp Lys Gln Gly Gly Val Phe Arg Trp Val Gly Glu Ala
 65 70 75 80
 Tyr Gly Lys Lys Leu Gly Phe Leu Ala Ile Trp Val Gln Trp Ile Glu
 85 90 95
 Ser Thr Ile Trp Tyr Pro Thr Val Leu Thr Phe Gly Ala Val Ser Ile
 100 105 110
 Ala Phe Ile Gly Met Asn Asp Thr His Asp Met Thr Leu Ala Ser Asn
 115 120 125
 Lys Tyr Tyr Thr Leu Ala Val Val Leu Ile Ile Tyr Trp Leu Ala Thr
 130 135 140
 Phe Ile Ser Leu Lys Gly Met Gly Trp Val Gly Lys Val Ala Lys Ile
 145 150 155 160
 Gly Gly Met Val Gly Thr Ile Ile Pro Ala Ala Leu Leu Ile Ile Leu
 165 170 175

Gly Ile Val Tyr Leu Ala Ser Gly Gly His Ser Asn Leu Asp Phe His
 180 185 190
 Ser Ser Phe Phe Pro Asp Leu Thr Asn Phe Asp Asn Val Val Leu Ala
 195 200 205
 Ala Ser Ile Phe Leu Phe Tyr Ala Gly Met Glu Met Gly Gly Ile His
 210 215 220
 Val Lys Asp Met Gln Asn Pro Ser Lys Asn Tyr Pro Lys Ala Val Phe
 225 230 235 240
 Ile Gly Ala Leu Ile Thr Val Ile Ile Phe Val Leu Gly Thr Phe Ser
 245 250 255
 Leu Gly Ile Ile Ile Pro Ala Lys Asp Ile Ser Leu Thr Gln Ser Leu
 260 265 270
 Leu Val Gly Phe Asp Asn Tyr Phe Arg Tyr Ile His Ala Ser Trp Leu
 275 280 285
 Ser Pro Ile Ile Ala Ile Ala Leu Ala Phe Gly Val Leu Ala Gly Val
 290 295 300
 Leu Thr Trp Val Ala Gly Pro Ser Lys Gly Ile Phe Ala Val Gly Lys
 305 310 315 320
 Ala Gly Tyr Met Pro Pro Phe Phe Gln Lys Thr Asn Lys Leu Gly Val
 325 330 335
 Gln Lys Asn Ile Leu Phe Val Gln Gly Gly Ala Val Thr Val Leu Ser
 340 345 350
 Leu Leu Phe Val Val Met Pro Ser Val Gln Ser Phe Tyr Gln Ile Leu
 355 360 365
 Ser Gln Leu Thr Val Ile Leu Tyr Leu Val Met Tyr Leu Leu Met Phe
 370 375 380
 Ser Gly Ala Ile Tyr Leu Arg Tyr Asn Met Lys Lys Ala Asn Arg Pro
 385 390 395 400
 Phe Arg Ile Gly Lys Lys Gly Asn Gly Leu Met Trp Ile Val Gly Gly
 405 410 415
 Leu Gly Phe Leu Gly Ser Leu Leu Ala Phe Ile Leu Ser Phe Ile Pro
 420 425 430
 Pro Ser Gln Ile Ser Thr Gly Ser Asn Thr Val Trp Phe Ser Val Leu
 435 440 445
 Ile Ile Gly Ala Leu Val Val Ile Ala Pro Phe Ile Ile Tyr Ala
 450 455 460
 Ala Lys Lys Pro Ser Trp Ala Asp Pro Asn Ser Thr Phe Glu Pro Phe
 465 470 475 480
 His Trp Glu Thr Gln Ala Lys Pro Gln Val Ala Pro Ala Thr Thr Thr
 485 490 495
 Thr Ala Gly Pro Ala Thr Ser Ser Ala Thr Thr Ile Gly Ser Thr Thr
 500 505 510
 Ser Ala Pro Ser Thr Gly Ser Gly Ser Val Ser Ser Asp Lys Asp Thr
 515 520 525
 Pro Gln Lys Gln Ser
 530

<210> 6592
 <211> 188
 <212> PRT
 <213> B.fragilis

<400> 6592
 Met Gln Ser Glu Asp Gly Ala Phe Tyr Phe His Arg Gly Phe Leu Pro
 1 5 10 15
 Glu Ala Met Arg Lys Ala Leu Tyr Gln Asp Leu Lys Val Lys Arg Phe
 20 25 30
 Ala Arg Gly Gly Ser Thr Ile Thr Met Gln Leu Val Lys Ser Val Phe
 35 40 45

Leu Ser Arg Asn Lys Asn Ile Ala Arg Lys Leu Glu Glu Ala Leu Ile
 50 55 60
 Val Trp Leu Ile Glu Thr Glu Arg Leu Thr Ser Lys Glu Arg Met Tyr
 65 70 75 80
 Glu Val Tyr Leu Asn Ile Val Glu Trp Gly Pro Leu Val Tyr Gly Val
 85 90 95
 Gln Glu Ala Ala Thr Tyr Tyr Phe Lys Lys Arg Pro Ser Gln Leu Thr
 100 105 110
 Ala Glu Glu Ser Ile Phe Leu Ala Ser Ile Ile Pro Lys Pro Lys His
 115 120 125
 Phe Arg Asn Ser Phe Asn Asn Asp Met Gln Leu Lys Glu Ser Leu Glu
 130 135 140
 Gly Tyr Tyr Arg Leu Ile Thr Glu Arg Leu Val Lys Lys Gly Ile Ile
 145 150 155 160
 Ser Glu Val Ala Ala Asp Ser Ile Arg Pro Glu Ile Asn Val Thr Gly
 165 170 175
 Glu Ala Lys Lys Asp Leu Gln Arg Asp Ser Ile Gln
 180 185

<210> 6593

<211> 221

<212> PRT

<213> B.fragilis

<400> 6593

Lys Leu Asn Asp Met Arg Lys Val Ile Ile Thr Leu Cys Phe Leu Phe
 1 5 10 15
 Val Ala Phe Val Ala Gln Ala Gly Arg Ile Ser Gly Ile Asn Ile Gln
 20 25 30
 Ser Ser Gly Glu Ala Ile Leu Val Phe Val Asp Gly Glu Gln Ile Cys
 35 40 45
 Thr Pro Thr Glu Thr Cys Phe Ile Ala Asn Tyr Ser Gly Arg His Arg
 50 55 60
 Ile Glu Val Tyr Ala Val Arg Tyr Ile Pro Arg Thr Gly Gln Ser Val
 65 70 75 80
 Lys Gly Asp Leu Leu Phe Gln Glu Trp Val Ser Asn Pro Gly Met Asn
 85 90 95
 Ile Arg Asp Ile Arg Val Gly Tyr Asn Asp Arg Pro Asp Phe Cys Pro
 100 105 110
 Asp Arg Pro Val Arg Pro Gly Tyr Asp Val Val Met Asn Arg Thr Glu
 115 120 125
 Phe Asp Arg Phe Leu Arg Ser Val Lys Asp Lys His Phe Asp Ser Asp
 130 135 140
 Arg Asn Lys Leu Ile Glu Thr Thr Leu Val Ser Thr Gly Phe Thr Ser
 145 150 155 160
 Asp Gln Cys Leu Gln Leu Val Asn Leu Phe Ser Phe Asp Ser Glu Lys
 165 170 175
 Ile Lys Leu Met Gln Ala Met Tyr Pro Arg Ile Val Asp Lys Pro Asn
 180 185 190
 Phe Tyr Leu Val Ile Glu Ser Leu Thr Phe Gln Ser Asp Lys Asn Lys
 195 200 205
 Met Asn Glu Phe Val Arg Lys Tyr His Asn Gln Arg Asn
 210 215 220

<210> 6594

<211> 347

<212> PRT

<213> B.fragilis

<400> 6594

Lys Met Lys Glu Glu Lys Tyr Met Arg Arg Cys Ile Gln Leu Ala Lys
 1 5 10 15
 Asn Gly Leu Cys Asn Val Ser Pro Asn Pro Met Val Gly Ala Val Ile
 20 25 30
 Val Cys Glu Gly Gln Ile Ile Gly Glu Gly Tyr His Ile Arg Cys Gly
 35 40 45
 Glu Ala His Ala Glu Val Asn Ala Ile Arg Ser Val Lys Asp Leu Ser
 50 55 60
 Leu Leu Lys His Ser Thr Ile Tyr Val Ser Leu Glu Pro Cys Ser His
 65 70 75 80
 His Gly Lys Thr Pro Pro Cys Ala Asp Leu Ile Ile Glu Lys Gln Ile
 85 90 95
 Pro Arg Ile Val Ile Gly Cys Gln Asp Pro Phe Ser Lys Val Ala Gly
 100 105 110
 Lys Gly Ile Gln Lys Leu Arg Asp Ala Gly Cys Glu Val Ile Val Gly
 115 120 125
 Val Leu Glu Thr Glu Cys Arg Glu Leu Ile Arg Lys Phe Ile Thr Phe
 130 135 140
 His Thr Leu His Arg Pro Tyr Ile Val Leu Lys Trp Ala Glu Ser Ala
 145 150 155 160
 Asp Gly Phe Ile Asp Leu Glu Arg Thr Glu Gly Gln Pro Val Ile Leu
 165 170 175
 Ser Thr Pro Leu Thr Ser Met Leu Val His Lys Lys Arg Ala Glu Ser
 180 185 190
 Asp Ala Ile Met Val Gly Thr Arg Thr Ala Leu Leu Asp Asn Pro Ala
 195 200 205
 Leu Thr Val Arg Asn Trp His Gly His Asn Pro Val Arg Ile Val Met
 210 215 220
 Asp Arg Asn His Ser Leu Pro Gln Thr Ser His Leu Ser Asp Asn Ser
 225 230 235 240
 Val Ser Thr Leu Val Phe Thr Glu His Pro Arg Ala Gly Lys Glu Asn
 245 250 255
 Leu Glu Tyr Ile Thr Leu Asn Tyr Gln Thr Asp Ile Leu Pro Gln Ile
 260 265 270
 Leu Ser Ala Leu Tyr Gln Arg Asn Leu Gln Ser Leu Met Ile Glu Gly
 275 280 285
 Gly Arg Ile Leu Leu Glu Ser Phe Ile Arg Ser Gly Ile Trp Asp Glu
 290 295 300
 Val Ile Ile Glu Lys Ser Asp Lys Leu Leu Tyr Ser Gly Val Lys Ala
 305 310 315 320
 Pro Glu Ile Ser Asp Lys Ile Ser Tyr Ser Glu Glu Lys His Phe Cys
 325 330 335
 Thr Thr Phe Arg His Tyr Leu Lys Arg Asn Thr
 340 345

<210> 6595

<211> 252

<212> PRT

<213> B.fragilis

<400> 6595

Asp Met Lys Arg Ile Leu Ile Phe Phe Leu Val Ile Gly Ile Thr Ala
 1 5 10 15
 Ile Ser Ser Val Ser Met Ala Ala Met Ser Asn Ser Arg Ile Arg Lys
 20 25 30
 Glu Thr Arg Phe Leu Thr Asp Lys Met Ala Tyr Glu Leu Asn Leu Ser
 35 40 45
 Thr Gly Gln Tyr Asn Asp Val Tyr Glu Ile Asn Tyr Asp Phe Ile Tyr

50	55	60
Ser Ile Arg Tyr Leu Met Asp Asp Val Ile Arg Gly Glu Glu Trp Ala		
65	70	75
Leu Asp Lys Tyr Tyr Arg Thr Leu Asp Ile Arg Asn Asp Asp Leu Arg		80
	85	90
Trp Val Leu Thr Ala Ser Gln Tyr Arg Arg Phe Ile Gly Val Asp Tyr		95
	100	105
Phe Tyr Arg Pro Val Tyr Ala Ser Gly Gly Ser Trp Ser Phe Arg Ile		110
	115	120
Tyr Ile Arg Tyr Thr Asn His Asn His Phe Tyr Phe Gly Lys Pro Tyr		125
	130	135
His Tyr Asn Ser Tyr Cys Gly Gly His Tyr Arg Thr His Tyr His Asn		140
145	150	155
Ser Tyr Tyr Arg Gly Arg Tyr Arg His Asp Phe Tyr Ser Gly Ser His		160
	165	170
Ser Ile Arg Asp His Arg Asn Tyr Asn Thr His Arg Arg Ser Asp Phe		175
	180	185
Gly Ser Val Thr Ile Arg Ser Asn Ser Gly Arg Arg Asp Glu Val Arg		190
	195	200
Arg Gly Val Ser Gln Arg Glu Ser Ser Ala Ser Arg Asp Asn Asn Arg		205
	210	215
Val Thr Pro Gly Asn Val Thr Arg Thr Gly Arg Gly Thr Arg Ser Thr		220
225	230	235
Glu Asn Asn Arg Arg Thr Asn Thr Gly Pro Glu Glu		240
	245	250

<210> 6596
 <211> 163
 <212> PRT
 <213> B.fragilis

<400> 6596
Leu Lys Tyr Arg Lys Lys Ser His Ser Asp Arg Ile Cys Ser Asp Cys
1
5
10
Ser Ser Phe Phe Phe Ile Ser Lys Ile Asn Lys Met Thr Lys Phe Glu
20
25
30
Ser Ser Val Lys Val Ile Pro Tyr Ser Gln Glu Arg Val Tyr Glu Lys
35
40
45
Leu Ala Asp Leu Ser Asn Leu Glu Ala Ile Lys Asp Arg Leu Pro Glu
50
55
60
Asp Lys Val Lys Asn Met Ser Phe Asp Thr Asp Thr Leu Ser Phe Asn
65
70
75
80
Val Asp Pro Val Gly Gln Leu Thr Leu Arg Ile Ile Glu Arg Glu Pro
85
90
95
Ser Lys Cys Ile Lys Phe Glu Thr Thr Asn Ser Pro Leu Pro Phe Asn
100
105
110
Met Trp Ile Gln Leu Val Ala Val Ser Glu Glu Glu Cys Lys Leu Lys
115
120
125
Val Thr Ile Gly Leu Glu Ile Asn Pro Phe Met Lys Ala Met Val Gln
130
135
140
Lys Pro Leu Asn Glu Gly Leu Glu Lys Met Ala Asp Met Leu Ser Met
145
150
155
160
Ile Gln Tyr

<210> 6597
 <211> 326
 <212> PRT
 <213> B.fragilis

<400> 6597

Gly Arg Arg Gly Met Ile Lys Ala Gly Ile Ile Gly Gly Ala Gly Tyr
 1 5 10 15
 Thr Ala Gly Glu Leu Ile Arg Leu Leu Ile Asn His Pro Glu Thr Glu
 20 25 30
 Ile Val Phe Ile Asn Ser Thr Ser Asn Ala Gly Asn Lys Ile Thr Asp
 35 40 45
 Val His Glu Gly Leu Tyr Gly Glu Cys Asp Leu Ala Phe Thr Asp Glu
 50 55 60
 Leu Pro Leu Glu Asp Ile Asp Val Leu Phe Phe Cys Thr Ala His Gly
 65 70 75 80
 Asp Thr Lys Lys Phe Met Glu Ser His Asn Ile Pro Glu Glu Leu Lys
 85 90 95
 Ile Ile Asp Leu Ser Met Asp Tyr Arg Ile Ala Ser Pro Asp His Asp
 100 105 110
 Phe Ile Tyr Gly Leu Pro Glu Leu Asn Arg Arg Ala Thr Cys Thr Ala
 115 120 125
 Lys His Val Ala Asn Pro Gly Cys Phe Ala Thr Cys Ile Gln Leu Gly
 130 135 140
 Leu Leu Pro Leu Ala Lys His Leu Met Leu Asn Glu Asp Val Met Val
 145 150 155 160
 Asn Ala Ile Thr Gly Ser Thr Gly Ala Gly Val Lys Pro Gly Ala Thr
 165 170 175
 Ser His Phe Ser Trp Arg Asn Asn Asn Met Ser Val Tyr Lys Ala Phe
 180 185 190
 Glu His Gln His Val Pro Glu Ile Lys Gln Ser Leu Lys Gln Leu Gln
 195 200 205
 Asn Ser Phe Asp Ala Glu Ile Asp Phe Ile Pro Tyr Arg Gly Asp Phe
 210 215 220
 Pro Arg Gly Ile Phe Ala Thr Leu Val Val Lys Thr Lys Val Ala Leu
 225 230 235 240
 Glu Glu Ile Val Arg Met Tyr Glu Glu Tyr Tyr Ala Lys Asp Ser Phe
 245 250 255
 Val His Ile Val Asp Lys Asn Ile Asp Leu Lys Gln Val Val Asn Thr
 260 265 270
 Asn Lys Cys Leu Ile His Leu Glu Lys His Gly Asp Lys Leu Leu Ile
 275 280 285
 Ile Ser Cys Ile Asp Asn Leu Leu Lys Gly Ala Ser Gly Gln Ala Val
 290 295 300
 His Asn Met Asn Leu Met Phe Asn Leu Glu Glu Thr Val Gly Leu Arg
 305 310 315 320
 Leu Lys Pro Ser Ala Phe
 325

<210> 6598

<211> 228

<212> PRT

<213> B.fragilis

<400> 6598

Leu Lys Pro Ile Arg Ile Met Lys Lys Ile His Val Ser Ala Ile Leu
 1 5 10 15
 Ile Leu Leu Val Val Met Ser Ser Cys Ala Gly Leu Ile Leu Asn Phe
 20 25 30
 Lys Asn Ser Gln Leu Met Ser Ile Gln Lys Gly Met Thr Gln Gln Glu
 35 40 45
 Val Lys Ala Ile Leu Gly Lys Pro Asn Tyr Arg Arg Phe Asp Gly Ala
 50 55 60

Met Glu Glu Trp Glu Tyr Arg Gly Tyr Leu Ser Lys Ala Gly His Ser
65 70 75 80
Val Ile Cys Val Asn Phe Ile Asp Asn Arg Val Val Gly Leu Asp Ser
85 90 95
Phe Arg Asp Gly Ala Pro Thr Ala Pro Pro Ala Pro Ser Phe Ser Leu
100 105 110
Gly Ile Gly Gly Thr Val Thr Ala Ser Asp Ile Ala Pro Ala Cys Asp
115 120 125
Tyr Arg Ala Met Arg Asn Asp Glu Phe Ala Arg Phe Leu Asn Asp Val
130 135 140
Lys Ser Lys Thr Phe Asp Ser Asp Arg Thr Asp Phe Ile Glu Lys Ala
145 150 155 160
Thr Arg Ser Thr Gly Phe Thr Ser Glu Gln Cys Cys Arg Leu Ile Lys
165 170 175
Leu Tyr Ser Phe Asp Asp Asp Arg Thr Lys Val Leu Lys Ile Leu Tyr
180 185 190
Pro Ser Val Val Asp Lys Asp Asn Phe Ser Ala Ala Ile Asp Gly Leu
195 200 205
Asp Phe Leu Ser Asn Gln Asp Thr Val Lys Asn Phe Val Arg Asn Tyr
210 215 220
Asn Arg Ile Lys
225

<210> 6599
<211> 260
<212> PRT
<213> B.fragilis

<400> 6599
Leu Tyr Asn Met Lys Val Ala Ile Ile Gly Ala Gly Asn Met Gly Gly
1 5 10 15
Ser Ile Ala Cys Gly Leu Ala Lys Gly Lys Leu Ile Pro Ala Ser Asp
20 25 30
Ile Ile Val Ser Asn Pro Ser Ile Gly Lys Leu Glu Ala Leu Lys Lys
35 40 45
Glu Phe Pro Ser Ile Ala Ile Thr Arg Asn Asn Ala Glu Ala Ala Thr
50 55 60
Gly Ala Asp Ile Val Ile Leu Ala Val Lys Pro Trp Leu Ile Arg Gly
65 70 75 80
Val Leu Arg Glu Met Lys Leu Arg Ser Lys Gln Ile Leu Val Ser Val
85 90 95
Ala Ala Gly Ile Ser Phe Glu Gln Leu Ala His Asp Val Val Glu Pro
100 105 110
Glu Met Pro Met Phe Arg Ile Val Pro Asn Thr Ala Ile Ser Glu Leu
115 120 125
Gln Ser Met Thr Leu Ile Ala Ser Arg Asn Ala Gly Gln Glu Leu Glu
130 135 140
Thr Leu Met Val Asn Leu Phe Ser Glu Met Gly Met Ala Met Ile Leu
145 150 155 160
Pro Glu Asp Lys Leu Glu Ala Ala Thr Ala Leu Thr Ser Cys Gly Ile
165 170 175
Ala Tyr Val Leu Lys Tyr Ile Gln Ala Ala Met Gln Ala Gly Ile Glu
180 185 190
Met Gly Ile Arg Pro Ser Asp Ala Met Asp Met Ile Ala Gln Ser Val
195 200 205
Lys Gly Ala Ala Glu Leu Ile Leu Asn Asn Asp Thr His Pro Ser Val
210 215 220
Glu Ile Asp Lys Val Thr Thr Pro Gly Gly Ile Thr Ile Lys Gly Ile
225 230 235 240

6599 260 PRT B.fragilis

Asn Glu Leu Glu His Asn Gly Phe Thr Ser Ala Ile Ile Lys Ala Met
 245 250 255
 Lys Ala Ser Arg
 260

<210> 6600
 <211> 230
 <212> PRT
 <213> B.fragilis

<400> 6600
 Ser Arg Ser Ile Ser Val Phe Leu His Pro Val Ile Ile Ile Val Ser
 1 5 10 15
 Leu Val Met Lys Asn Leu Glu Arg Leu Phe Ala Glu Lys Leu Leu Lys
 20 25 30
 Ile Lys Ala Ile Lys Leu Gln Pro Ala Asn Pro Phe Thr Trp Ala Ser
 35 40 45
 Gly Trp Lys Ser Pro Phe Tyr Cys Asp Asn Arg Lys Thr Leu Ser Tyr
 50 55 60
 Pro Ser Leu Arg Ser Phe Val Lys Phe Glu Ile Thr Arg Leu Val Leu
 65 70 75 80
 Glu Arg Phe Gly Gln Val Asp Ala Ile Ala Gly Val Ala Thr Gly Ala
 85 90 95
 Ile Pro Gln Gly Ala Leu Val Ala Asp Ala Leu Asn Leu Pro Phe Val
 100 105 110
 Tyr Val Arg Ser Thr Pro Lys Asp His Gly Leu Glu Asn Leu Ile Glu
 115 120 125
 Gly Glu Leu Arg Pro Gly Met Lys Val Val Val Val Glu Asp Leu Ile
 130 135 140
 Ser Thr Gly Gly Ser Ser Leu Lys Ala Val Glu Ala Ile Arg Arg Asp
 145 150 155 160
 Gly Cys Glu Val Ile Gly Met Val Ala Ala Tyr Thr Tyr Gly Phe Pro
 165 170 175
 Val Ala Glu Gln Ala Phe Lys Asp Ala Lys Val Pro Leu Val Thr Leu
 180 185 190
 Thr Asn Tyr Glu Ala Val Leu Asp Val Ala Leu Arg Thr Gly Tyr Ile
 195 200 205
 Glu Glu Glu Asp Ile Ala Thr Leu Asn Glu Trp Arg Lys Asp Pro Ala
 210 215 220
 His Trp Glu Thr Gly Lys
 225 230

<210> 6601
 <211> 458
 <212> PRT
 <213> B.fragilis

<400> 6601
 Ile Asn Thr Ile Phe Gln Met Arg Ile Lys Phe Leu Ser Val Ile Val
 1 5 10 15
 Ser Phe Phe Leu Val Ser Phe Ala Val Thr Ser Cys Leu Asp Thr Glu
 20 25 30
 Glu Ile Glu Tyr Ser Pro Asp Ala Thr Ile His Ala Phe Ala Leu Asp
 35 40 45
 Thr Ile His Gly Val Asn Tyr Lys Phe Thr Ile Asp Gln Leu Gly Pro
 50 55 60
 Asp Gly Val Gly Leu Ile Tyr Asn Gln Asp Ser Leu Pro Val Gly Ser
 65 70 75 80
 Asp Thr Ile Ile Asp Arg Ile Leu Ile Lys Thr Leu Thr Thr Thr Ser

				85				90					95				
Gly	Ile	Ile	Thr	Ala	Lys	Asn	Ala	Glu	Gly	Gln	Asp	Thr	Leu	Phe	Asn		
			100					105					110				
Tyr	Ser	Asp	Ser	Ile	Asp	Phe	Arg	Gly	Thr	Met	Gln	Lys	Pro	Met	Arg		
		115					120					125					
Ile	Lys	Val	Trp	Ala	Ala	Asp	Met	Gln	Tyr	Thr	Lys	Glu	Tyr	Thr	Ile		
	130					135					140						
Ser	Val	Arg	Val	His	Gln	Gln	Asp	Pro	Asp	Ser	Met	Asn	Trp	Thr	Lys		
145					150					155					160		
Met	Thr	Asp	Asn	Phe	Ala	Asn	Tyr	Ser	Gly	Tyr	Gln	Lys	Ser	Val	Thr		
			165						170					175			
Leu	Asn	Glu	Asp	Leu	Leu	Ile	Tyr	Thr	Ser	Asn	Thr	Thr	Ala	Tyr	Gln		
	180							185					190				
Ser	Ser	Gly	Asp	Val	Ile	Ser	Lys	Gly	Arg	Ser	Trp	Thr	Pro	Val	Ser		
	195						200					205					
Ile	Thr	Gly	Leu	Pro	Asp	Asn	Ile	Lys	Leu	Ser	Ser	Ile	Ile	Ser	Phe		
	210					215					220						
Gly	Gly	Lys	Leu	Tyr	Ala	Thr	Asn	Gly	Glu	Ser	Ala	Tyr	Val	Ser	Ser		
225					230					235					240		
Asp	Gly	Ala	Leu	Trp	Asn	Val	Ala	Thr	Asp	Leu	Asn	Lys	Asn	Gly	Lys		
			245						250					255			
Val	Glu	Met	Leu	Ile	Ala	Pro	Phe	Pro	Lys	Asn	Glu	Gly	Asn	Leu	Leu		
	260							265					270				
Gly	Ile	Ser	Gly	Ile	Ala	Gly	Ile	Ile	Asn	Asn	Gly	Asp	Gln	Ser	Thr		
	275						280					285					
Phe	Ala	Ile	Thr	Asn	Pro	Glu	Ala	Thr	Ala	Trp	Asn	Ile	Gly	Ser	Glu		
	290					295					300						
Thr	Val	Gly	Ala	Asp	Phe	Pro	Leu	Glu	Asn	Leu	Ser	Ala	Thr	Ser	Tyr		
305					310						315				320		
Leu	Thr	Ala	Thr	Gly	Ile	Gln	Thr	Ile	Ala	Val	Met	Gly	Asn	Asn	Arg		
			325					330					335				
Asn	Ala	Asn	Asp	Thr	Thr	Ser	Ile	Ala	Trp	Thr	Ser	Gln	Asp	Gly	Leu		
	340							345					350				
Leu	Trp	Ile	Pro	Leu	Lys	Thr	Ser	Ser	Ser	Thr	Ala	Tyr	Cys	Pro	Lys		
	355						360					365					
Leu	Asp	Asn	Pro	Ser	Phe	Phe	Tyr	Tyr	Asp	Asn	Ala	Phe	Leu	Ala	Phe		
	370					375					380						
Gly	Gly	Asn	Phe	Glu	Thr	Ile	Tyr	Thr	Ser	Glu	Ala	Gly	Ile	Ala	Trp		
385					390					395					400		
Tyr	Lys	Ala	Asn	Lys	Lys	Ile	Phe	Leu	Pro	Ala	Glu	Phe	Lys	Asp	Arg		
			405					410					415				
Gly	Asn	Asn	Tyr	Ser	Thr	Val	Val	Asp	Lys	Asn	Asn	Phe	Ile	Trp	Val		
	420							425				430					
Ile	Trp	Ser	Asn	Gly	Gly	Ala	Asn	Glu	Val	Trp	Arg	Gly	Arg	Leu	Asn		
	435					440						445					
Lys	Phe	Gly	Phe	Glu	Arg	Gln	Asn	Asn	Asn								
	450					455											

<210> 6602

<211> 203

<212> PRT

<213> B.fragilis

<400> 6602

Leu	Thr	Thr	Ile	Ile	Leu	Tyr	Thr	Lys	Ser	Thr	Met	Asp	Thr	Gln	Gln		
1				5				10					15				
Ile	Asp	Val	Met	Val	Ala	Asp	Ala	Ser	His	Glu	Val	Tyr	Val	Asp	Thr		
		20					25					30					
Ile	Leu	Glu	Thr	Ile	Arg	Asn	Ala	Ala	Lys	Val	Arg	Gly	Thr	Gly	Ile		

35	40	45
Ala Glu Arg Thr His Glu Tyr Val Ala Thr Lys Met Lys Glu Gly Lys		
50	55	60
Ala Ile Ile Ala Leu Cys Gly Asp Val Phe Ala Gly Phe Thr Tyr Ile		
65	70	75
Glu Ser Trp Gly Asn Lys Gln Tyr Val Ala Thr Ser Gly Leu Ile Val		80
	85	90
His Pro Asp Phe Arg Gly Leu Gly Leu Ala Lys Arg Ile Lys Gln Ala		95
	100	105
Ser Phe Gln Leu Ala Arg Leu Arg Trp Pro Arg Ala Lys Ile Phe Ser		110
	115	120
Leu Thr Ser Gly Ala Ala Val Met Lys Met Asn Thr Glu Leu Gly Tyr		125
	130	135
Val Pro Val Thr Phe Asn Glu Leu Thr Asp Asp Glu Ala Phe Trp Lys		140
145	150	155
Gly Cys Glu Gly Cys Ile Asn His Glu Ile Leu Met Ala Lys Asp Arg		160
	165	170
Lys Phe Cys Ile Cys Thr Ala Met Leu Tyr Asp Pro Thr Asp Pro His		175
	180	185
Asn Ile Lys Lys Glu Gln Glu Arg Asn Asn Ile		190
	195	200

<210> 6603

<211> 377

<212> PRT

<213> B.fragilis

<400> 6603

Glu Glu Thr Met Asn Leu Phe Asp Val Tyr Pro Leu Phe Asp Ile Asn		
1	5	10
Ile Ile Lys Gly Lys Gly Cys His Val Trp Asp Glu Asn Gly Thr Glu		15
	20	25
Tyr Leu Asp Leu Tyr Gly Gly His Ala Val Ile Ser Ile Gly His Ala		30
	35	40
His Pro His Tyr Val Asp Met Ile Ser Lys Gln Val Ala Thr Leu Gly		45
	50	55
Phe Tyr Ser Asn Ser Val Ile Asn Lys Leu Gln Gln Gln Val Ala Glu		60
65	70	75
Arg Leu Gly Lys Ile Ser Gly Tyr Glu Asp Tyr Ser Leu Phe Leu Ile		80
	85	90
Asn Ser Gly Ala Glu Ala Asn Glu Asn Ala Leu Lys Leu Ala Ser Phe		95
	100	105
His Asn Gly Arg Thr Lys Val Ile Ser Phe Gly Lys Ala Phe His Gly		110
	115	120
Arg Thr Ser Leu Ala Val Glu Ala Thr Asp Asn Pro Lys Ile Ile Ala		125
	130	135
Pro Ile Asn Ala Asn Gly His Ile Thr Tyr Leu Pro Leu Asn Asp Ile		140
145	150	155
Glu Ala Ala Lys Thr Glu Leu Ala Lys Glu Asp Ile Cys Ala Val Ile		160
	165	170
Ile Glu Gly Ile Gln Gly Val Gly Gly Ile Lys Ile Pro Thr Pro Glu		175
	180	185
Phe Leu Gln Glu Leu Arg Lys Ala Cys Thr Glu His Gly Thr Ile Leu		190
	195	200
Ile Leu Asp Glu Ile Gln Ser Gly Tyr Gly Arg Ser Gly Lys Phe Phe		205
	210	215
Ala His Gln Tyr Ala Gly Ile Lys Pro Asp Ile Ile Thr Val Ala Lys		220
225	230	235
Gly Ile Gly Asn Gly Phe Pro Met Ala Gly Val Leu Ile Ser Pro Met		240

				245					250				255				
Phe	Thr	Pro	Val	Tyr	Gly	Met	Leu	Gly	Thr	Thr	Phe	Gly	Gly	Asn	His		
			260					265					270				
Leu	Ala	Cys	Ser	Ala	Ala	Leu	Ala	Val	Met	Asp	Val	Ile	Glu	Gln	Glu		
		275					280					285					
Asn	Leu	Val	Glu	Asn	Ala	Ala	Asn	Ile	Gly	Ser	Tyr	Leu	Leu	Glu	Glu		
	290						295				300						
Leu	Lys	Lys	Phe	Lys	Glu	Ile	Lys	Glu	Val	Arg	Gly	Cys	Gly	Leu	Met		
305					310					315					320		
Ile	Gly	Met	Glu	Phe	Asp	Gln	Pro	Val	Lys	Glu	Ile	Arg	Ser	Arg	Leu		
				325					330					335			
Ile	His	Glu	Gln	Lys	Val	Phe	Thr	Gly	Ala	Ser	Gly	Thr	Asn	Val	Ile		
		340						345					350				
Arg	Leu	Leu	Pro	Pro	Leu	Cys	Leu	Ser	Lys	Glu	Glu	Ala	Asp	Glu	Phe		
		355					360					365					
Leu	Ala	Arg	Leu	Arg	Lys	Val	Leu	Gly									
	370					375											

<210> 6604

<211> 413

<212> PRT

<213> B.fragilis

<400> 6604

Lys	Tyr	Met	Met	Ile	Tyr	Ile	Ile	Phe	Ser	Val	Phe	Ile	Ile	Ile	Ile		
1				5				10					15				
Leu	Phe	Ile	Cys	Ala	Arg	Tyr	Trp	Tyr	Leu	Trp	Arg	Lys	Ile	Ser	Val		
			20					25				30					
Gln	Lys	Asn	Glu	Trp	Val	Ala	Gln	Thr	Lys	Glu	Ser	Asp	Thr	Ile	Leu		
		35					40					45					
Arg	Ser	Met	Asn	Ala	Cys	Phe	Ile	Leu	Ile	Asn	Ser	Asp	Leu	Val	Val		
	50					55				60							
Ile	Arg	Thr	Asn	Tyr	Tyr	Asp	Leu	Ser	Gly	Ile	Ser	Glu	Glu	Pro	Glu		
65				70					75					80			
Ser	Ser	Gly	Arg	Val	Gly	Asp	Leu	Leu	Asn	Cys	Lys	Asn	Ala	Val	Arg		
			85					90						95			
Ser	Gly	Gly	Gly	Cys	Gly	Ala	His	Lys	Asn	Cys	Glu	Asn	Cys	Met	Ile		
			100					105					110				
Arg	His	Thr	Ile	Glu	Asn	Ala	Phe	Cys	His	Lys	Lys	Gly	Phe	His	Lys		
		115					120						125				
Leu	Glu	Ala	Ser	Met	Arg	Leu	Leu	Ser	Ser	Asp	His	Gln	Gln	Ile	Ile		
	130					135				140							
Pro	Cys	Asp	Val	Ser	Val	Ser	Gly	Thr	Tyr	Leu	Asn	Asn	Glu	Gly	His		
145					150				155						160		
Glu	Gln	Met	Leu	Leu	Thr	Val	Tyr	Asp	Ile	Thr	Glu	Leu	Lys	Asn	Met		
			165						170					175			
Gln	Arg	Leu	Leu	Asn	Ile	Glu	Lys	Glu	Asn	Ala	Val	Ser	Ala	Glu	Lys		
		180						185					190				
Leu	Lys	Ser	Ala	Phe	Ile	Ala	Asn	Met	Ser	His	Glu	Ile	Arg	Thr	Pro		
		195					200					205					
Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Gly	Leu	Leu	Ala	Ser	Ala	Asp	Asp		
	210					215					220						
Asp	Thr	Glu	Lys	Lys	Met	Tyr	Leu	Asp	Ile	Val	Ala	Glu	Asn	Asn	Asp		
225					230					235					240		
Arg	Leu	Leu	Gln	Ile	Val	Thr	Asp	Val	Leu	Asp	Leu	Ser	Lys	Ile	Glu		
			245						250					255			
Ser	Gly	Ser	Leu	Asp	Phe	His	Tyr	Ser	Glu	Phe	Asp	Val	Asn	Asp	Leu		
		260						265					270				
Leu	Cys	Ala	Leu	His	Gly	Ile	Leu	Asn	Ile	Arg	Leu	Lys	Asp	Lys	Pro		

275	280	285
Glu Ile Lys Leu Ile Cys Lys Ala Gly Thr Asp Glu Trp Ile Ile Tyr		
290	295	300
Ser Glu Gln His Arg Ile Val Gln Ile Ile Thr Asn Leu Val His Asn		
305	310	315
Ala Met Lys Phe Thr His Ser Gly Glu Ile Cys Phe Gly Cys Arg Pro		
	325	330
Gln Gly Glu Asp Glu Ile Tyr Phe Tyr Val Ser Asp Thr Gly Ile Gly		
	340	345
Ile Pro Ala Gly Glu Gln Asp Lys Ile Phe Asp Arg Phe Thr Lys Leu		
	355	360
Asp His Glu Val Pro Gly Thr Gly Leu Gly Leu Thr Leu Ser Gln Thr		
	370	375
Ile Val Gln Asn Leu Gly Gly Glu Met Gly Val Glu Ser Glu Val Thr		
385	390	395
Lys Gly Ser Thr Phe Trp Phe Thr Leu Pro Leu Lys Ser		
	405	410

<210> 6605

<211> 659

<212> PRT

<213> B.fragilis

<400> 6605

Leu Ser Val Ile Cys Ile Thr Glu Lys Tyr Asn Arg Leu Leu Asn Thr		
1	5	10
His Ala Leu Asn Met Lys Leu Lys Phe Leu Phe Leu Phe Leu Ser Tyr		
	20	25
Ser Leu Ser Ile His Ser Gln Asn Asn Leu Leu Tyr Ala Asp Ser Ser		
	35	40
Lys Asp Ser Leu Phe Phe Glu Gln Lys Lys Ala Leu Leu Thr Ala Thr		
	50	55
Trp His Lys Pro Phe Ser Tyr Ser Ser Ile Gln Ser Asn His Ala Pro		
65	70	75
Leu Gly Pro Tyr Met Gly Asn Gly Asp Val Gly Val Val Ala Phe Thr		
	85	90
Ser Asp Asn Ser Gln Thr Leu Lys Ile Ser Lys Val Asp Phe Val Thr		
	100	105
Asp Gly Trp Thr Asp Trp Ala Gly Ser Gly Pro Ala Ala Leu Pro Ile		
	115	120
Gly Gly Val Asn Ile Thr Val Asn Ser Pro Val Tyr Ser Gly Phe Val		
	130	135
Thr Val Asn Arg Ala Asp Pro Ser Gly Phe Ser Tyr Gln Met Asp Gln		
145	150	155
Leu Asn Ser Glu Leu Arg Met Thr Thr Ala Thr Ala Gln Gln Val Lys		
	165	170
Met Val Thr Trp Met Gly Val Asn Glu Asn Met Ile Ile Thr Glu Leu		
	180	185
Thr Thr Ser Ser Lys Thr Pro Val Pro Ile Ser Val Asp Thr Tyr Ala		
	195	200
Asp Asn Gln Ser Ala Ser Tyr Thr Thr Thr Ala Gln Val Asn Gly Gln		
	210	215
Ile Ala Gln Val Thr Arg Gln Thr Lys Thr Asp Ala Val Arg Trp Ile		
225	230	235
Ser Cys Ala Gly Ile Ser Thr Lys Ile Val Gly Val Met Ser Lys Pro		
	245	250
Glu Cys Leu Ser Glu Ser Met Val Arg Ser Asn Phe Gln Leu Thr Ala		
	260	265
Ser Asp Thr Leu Leu Val Val Val Tyr Val Ser Gly Gly Gly Lys Gly		
		270

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      275              280              285
Asn Asp Pro Gln Leu Pro Thr Ala Tyr Asn Lys Leu Leu Thr Leu Asn
 290              295              300
Lys Ala Asp Val Thr Gln Leu Lys Met Ala Lys Lys Ala Trp Trp Lys
 305              310              315              320
Asp Met Trp Thr Arg Ser Tyr Val Glu Thr Asn Asp Glu Leu Leu Asn
      325              330              335
Arg His Tyr Leu Ser Ser Ile Tyr Leu Leu Ala Ser Ala Tyr Asn Glu
      340              345              350
His Ser Pro Val Ser Gly Gly Met Tyr Gly Val Trp Asn Met Asp Asp
      355              360              365
Lys Met Met Tyr His Gly Asp Ile His Leu Asn Tyr Asn Ser Gln Ala
      370              375              380
Gly Phe Tyr Ser Ala Phe Ser Ser Asn Arg Pro Glu Ile Ala Leu Pro
 385              390              395              400
Phe Tyr Lys Thr Ile Glu Leu Leu Ile Pro Glu Gly Lys Arg Arg Ala
      405              410              415
Lys Glu Glu Met Gly Ile Met His Pro Ser Trp Glu Gly Lys Ser Cys
      420              425              430
Arg Gly Ile Leu Phe Pro Val Gly Ala Leu Gly Ile Gly Val Phe Tyr
      435              440              445
Asn Tyr Tyr Trp Gln Gln Thr Met Asn Ala Pro Phe Asn Val Pro Leu
      450              455              460
Phe Ser Trp Tyr Tyr Glu Tyr Thr Gly Asp Leu Asn Phe Leu Arg Tyr
 465              470              475              480
Arg Ala Tyr Pro Tyr Ile Arg Leu Cys Gly Asp Phe Tyr Glu Asp Tyr
      485              490              495
Met Gln Lys Glu Thr Tyr Gly Lys Ser Tyr Arg Tyr Thr Ile Thr Thr
      500              505              510
Gly Gly His Glu Asp Ser Trp Asp Leu Asn Pro Pro Ser Asp Leu Ala
      515              520              525
Phe Val Lys Gln Thr Phe Gly Leu Leu Val Arg Tyr Ser Lys Leu Leu
      530              535              540
Gly Val Asp Gln Lys Arg Arg Lys Lys Trp Asp Asp Ile Leu Ser His
 545              550              555              560
Leu Pro Glu Tyr Lys Val Ile Met Pro Thr Lys Thr Pro Asn Gln Gly
      565              570              575
Leu Pro Val Tyr Ala Lys Asn Glu Ala Gly Trp Asp Leu Pro Ser His
      580              585              590
Ala Ile Gln Leu His Ala Ala Tyr Pro Cys Glu Ile Leu Asn Leu His
      595              600              605
Ser Asp Ser Thr Ala Leu Gln Ile Ala Arg Asn Thr Leu Tyr Tyr Tyr
      610              615              620
Glu Val Ser Gln Lys Gly Phe Thr Asn Thr Met Asn Glu Leu Gly Leu
 625              630              635              640
Ser Ala Phe Val Met Gly Pro Val Ser Asp Leu Leu Pro Ile Ser Tyr
      645              650              655
Trp Lys Ile

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<210> 6606
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 6606
 Leu Tyr Lys Met Lys Lys Lys Ala Asn Arg Leu Asp Ala Ile Lys Met
 1 5 10 15
 Ile Ile Ser Ser Lys Glu Val Gly Ser Gln Glu Glu Leu Leu Gln Glu

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<210> 6607
<211> 554
<212> PRT
<213> B.fragilis
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<400> 6607															
Ile	Asn	Lys	Met	Ile	Asp	Arg	Phe	Leu	Ser	Gln	Thr	Ser	Phe	Asn	Ser
1			5					10					15		
Gln	Glu	Asp	Phe	Val	Lys	Asn	Leu	Lys	Ile	His	Val	Pro	Asp	Asn	Phe
			20				25					30			
Asn	Phe	Gly	Tyr	Asp	Ile	Val	Asp	Ala	Trp	Ala	Ala	Glu	Gln	Pro	Asp
		35					40					45			
Lys	Pro	Ala	Leu	Leu	Trp	Thr	Asn	Asp	Lys	Gly	Glu	His	His	Gln	Phe
	50					55					60				
Ser	Phe	Ala	Asp	Met	Lys	Gln	Tyr	Thr	Asp	Arg	Thr	Ala	Ser	Tyr	Phe
65					70					75				80	
Gln	Ser	Leu	Gly	Ile	Gly	His	Gly	Asp	Met	Val	Met	Leu	Ile	Leu	Lys
				85					90					95	
Arg	Arg	Tyr	Glu	Phe	Trp	Phe	Ser	Ile	Ile	Ala	Leu	His	Lys	Leu	Gly
			100					105					110		
Ala	Val	Val	Ile	Pro	Ala	Thr	His	Leu	Leu	Thr	Lys	Lys	Asp	Ile	Val
		115					120					125			
Tyr	Arg	Cys	Asn	Ala	Ala	Asp	Ile	Lys	Met	Ile	Val	Ala	Ala	Gly	Glu
	130					135					140				
Glu	Val	Val	Thr	Lys	His	Ile	Ile	Asp	Ala	Met	Pro	Asp	Ser	Pro	Thr
145					150					155				160	
Val	Lys	His	Leu	Val	Ser	Val	Gly	Pro	Glu	Ile	Pro	Glu	Gly	Phe	Asp
				165					170					175	
Asp	Phe	His	Gln	Gly	Ile	Glu	His	Ala	Ala	Pro	Phe	Val	Lys	Pro	Glu
			180					185					190		
His	Pro	Asn	Thr	Asn	Asp	Asp	Ile	Ser	Leu	Met	Tyr	Phe	Thr	Ser	Gly
		195					200					205			
Thr	Thr	Gly	Glu	Pro	Lys	Met	Val	Ala	His	Asp	Phe	Thr	Tyr	Pro	Leu
		210				215						220			
Gly	His	Ile	Val	Thr	Gly	Ser	Phe	Trp	His	Asn	Leu	Lys	Glu	Asn	Ser
225					230					235				240	
Leu	His	Leu	Thr	Ile	Ala	Asp	Thr	Gly	Trp	Gly	Lys	Ala	Val	Trp	Gly
				245					250					255	
Lys	Leu	Tyr	Gly	Gln	Trp	Ile	Ala	Gly	Ala	Asn	Val	Phe	Val	Tyr	Asp
			260					265					270		
His	Glu	Lys	Phe	Thr	Pro	Ala	Asp	Ile	Leu	Glu	Lys	Ile	Gln	Asn	Tyr

	275		280		285										
His	Val	Thr	Ser	Leu	Cys	Ala	Pro	Pro	Thr	Ile	Phe	Arg	Phe	Leu	Ile
	290					295					300				
His	Glu	Asp	Leu	Thr	Lys	Tyr	Asp	Leu	Ser	Ser	Leu	Glu	Tyr	Cys	Thr
305					310					315					320
Ile	Ala	Gly	Glu	Ala	Leu	Asn	Pro	Ala	Val	Phe	Asp	Thr	Phe	Lys	Lys
			325						330					335	
Leu	Thr	Gly	Ile	Lys	Leu	Met	Glu	Gly	Phe	Gly	Gln	Thr	Glu	Thr	Thr
		340						345					350		
Leu	Thr	Val	Ala	Thr	Phe	Pro	Trp	Met	Glu	Pro	Lys	Pro	Gly	Ser	Met
	355						360					365			
Gly	Val	Pro	Asn	Pro	Gln	Tyr	Asn	Val	Asp	Leu	Ile	Asp	Tyr	Glu	Gly
	370				375						380				
Arg	Ser	Val	Glu	Ala	Gly	Glu	Gln	Gly	Gln	Ile	Val	Ile	Arg	Thr	Asp
385					390					395					400
Lys	Gly	Lys	Pro	Leu	Gly	Leu	Phe	Lys	Glu	Tyr	Tyr	Arg	Asp	Ala	Ser
			405						410				415		
Arg	Thr	His	Glu	Ala	Trp	His	Asp	Gly	Ile	Tyr	Tyr	Thr	Gly	Asp	Val
	420						425						430		
Ala	Trp	Lys	Asp	Glu	Asp	Gly	Tyr	Leu	Trp	Phe	Val	Gly	Arg	Ala	Asp
	435						440					445			
Asp	Val	Ile	Lys	Ser	Ser	Gly	Tyr	Arg	Ile	Gly	Pro	Phe	Glu	Val	Glu
	450					455					460				
Ser	Ala	Leu	Met	Thr	His	Pro	Ala	Val	Val	Glu	Cys	Ala	Ile	Thr	Gly
465					470					475					480
Val	Pro	Asp	Glu	Ile	Arg	Gly	Gln	Val	Val	Lys	Ala	Thr	Ile	Val	Leu
			485				490						495		
Ala	Lys	Glu	Tyr	Arg	Glu	Arg	Lys	Gly	Glu	Asp	Leu	Val	Lys	Glu	Leu
		500					505					510			
Gln	Asn	His	Val	Lys	Lys	Val	Thr	Ala	Pro	Tyr	Lys	Tyr	Pro	Arg	Val
	515						520					525			
Ile	Glu	Phe	Val	Asp	Glu	Leu	Pro	Lys	Thr	Ile	Ser	Gly	Lys	Ile	Arg
	530					535					540				
Arg	Val	Glu	Ile	Arg	Lys	Asn	Asp	Glu	Lys						
545					550										

<210> 6608

<211> 334

<212> PRT

<213> B.fragilis

<400> 6608

Ile	Met	Glu	Phe	Leu	Thr	Asn	Glu	Lys	Leu	Thr	Ile	Val	Gly	Ala	Ala
1			5						10				15		
Gly	Met	Ile	Gly	Ser	Asn	Met	Ala	Gln	Thr	Ala	Leu	Met	Met	Lys	Leu
	20							25				30			
Thr	Pro	Asn	Ile	Cys	Leu	Tyr	Asp	Pro	Tyr	Ala	Pro	Ala	Leu	Glu	Gly
	35						40					45			
Val	Ala	Glu	Glu	Leu	Tyr	His	Cys	Ala	Phe	Glu	Gly	Val	Asn	Leu	Thr
	50					55					60				
Tyr	Thr	Ser	Asp	Ile	Lys	Glu	Ala	Leu	Ser	Gly	Ala	Lys	Tyr	Ile	Val
65					70					75				80	
Ser	Ser	Gly	Gly	Ala	Ala	Arg	Lys	Ala	Gly	Met	Thr	Arg	Glu	Asp	Leu
			85					90					95		
Leu	Lys	Gly	Asn	Ala	Glu	Ile	Ala	Ala	Gln	Phe	Gly	Lys	Asp	Ile	Arg
		100						105					110		
Gln	Tyr	Cys	Pro	Asp	Val	Lys	His	Val	Val	Val	Val	Phe	Asn	Pro	Ala
	115						120					125			
Asp	Ile	Thr	Gly	Leu	Ile	Val	Leu	Leu	Tyr	Ala	Gly	Leu	Lys	Pro	Ser

130		135		140
Gln Val Ser Thr Leu	Ala Ala Leu Asp Ser Thr Arg Leu Gln Asn Glu			
145		150		160
Leu Val Lys Tyr Leu	His Ile Pro Ala Ser Glu Ile Val Asn Cys Arg			
	165		170	175
Thr Tyr Gly Gly His	Gly Glu Gln Met Ala Val Phe Ala Ser Thr Thr			
	180		185	190
Lys Val Gln Gly Glu	Ala Leu Thr Lys Ile Ile Asp Thr Pro Arg Met			
	195		200	205
Pro Met Gln Asp Trp	Glu Asp Leu Lys Val Arg Val Ile Gln Gly Gly			
	210		215	220
Lys His Ile Ile Asp	Leu Arg Gly Arg Ser Ser Phe Gln Ser Pro Ala			
225		230		240
Tyr Leu Ser Ile Glu	Met Ile Ala Ala Ala Met Gly Gly Gln Pro Phe			
	245		250	255
Arg Trp Pro Ala Gly	Thr Tyr Val Ser Asp Lys Lys Phe Asp His Ile			
	260		265	270
Leu Met Ala Met Glu	Thr Ser Ile Thr Lys Glu Gly Val Ser Tyr Lys			
	275		280	285
Glu Ile Gln Gly Thr	Pro Glu Glu Gln Lys Glu Met Glu Glu Ser Tyr			
	290		295	300
Ala His Leu Cys Lys	Leu Arg Asp Glu Val Ile Ala Met Gly Ile Leu			
305		310		320
Pro Glu Ile Asn Lys	Trp His Glu Leu Asn Lys His Ile Asn			
	325		330	

<210> 6609

<211> 760

<212> PRT

<213> B.fragilis

<400> 6609

Met Asn Asn Ser Lys	Ile Ile Asn Val Arg Leu Met Lys Lys Val Leu
1	5 10 15
Val Leu Val Leu Ser	Phe Leu Ser Val Thr Ala Phe Ala Gln Asn Ile
	20 25 30
Thr Val Lys Gly Ile	Val Lys Asp Gly Thr Gly Glu Pro Ile Ile Gly
	35 40 45
Gly Ser Val Leu Val	Lys Gly Ser Ser Ile Gly Thr Val Thr Asp Val
	50 55 60
Asp Gly Asn Tyr Thr	Leu Ser Asn Val Pro Ala Asp Gly Val Leu Glu
65	70 75 80
Phe Ser Tyr Ile Gly	Met Lys Lys Gln Asp Val Lys Val Ser Gly Lys
	85 90 95
Thr Val Ile Asn Val	Val Leu Gln Glu Asp Thr Gln Ile Leu Asp Glu
	100 105 110
Val Val Val Thr Ala	Leu Gly Leu Lys Arg Glu Gln Lys Ala Leu Gly
	115 120 125
Tyr Ala Val Thr Glu	Val Lys Gly Asp Asp Leu Lys Ala Ala Asn Thr
	130 135 140
Ile Ser Pro Val Ala	Ala Leu Gln Gly Lys Val Ala Gly Val Glu Ile
145	150 155 160
Arg Gln Ser Asp Gly	Gly Met Phe Gly Ala Thr Lys Ile Gln Ile Arg
	165 170 175
Gly Ala Ser Thr Leu	Lys Gly Asn Asn Gln Pro Ile Tyr Val Ile Asp
	180 185 190
Gly Val Ile Leu Asp	Asn Ser Thr Ser Gly Asn Thr Thr Met Asp Trp
	195 200 205
Asp Ala Gly Asn Asn	Asn Ala Asn Asp Tyr Gly Asn Glu Leu Lys Asn

210	215	220
Leu Asn Pro Asp Asp Phe Glu Thr Val Ser Val Leu Lys Gly Ala Ala		
225	230	235
Ala Thr Ala Leu Tyr Gly Ser Arg Gly Leu Asn Gly Ala Val Val Ile		240
	245	250
Thr Thr Lys Ser Gly Lys Gly Phe Lys Gly Phe Gly Val Ser Val Ser		255
	260	265
Gln Thr Phe Gly Ile Asp His Ala Tyr Arg Thr Pro Asp Ile Gln Thr		270
	275	280
Glu Tyr Gly Val Gly Leu Met Pro Gly Trp Lys Asp Thr Asp Asn Asn		285
	290	295
Gly Ser Val Trp Asp Pro Phe Gln Phe Lys Leu Asp Asp Lys Gly Asp		300
305	310	315
Arg Thr Leu Ile Gly Ala Gly Ser Tyr Gly Trp Gly Pro Lys Tyr Asp		320
	325	330
Gly Gln Pro Ile Arg Asn Tyr Asp Gly Thr Trp Thr Asn Tyr Ser Pro		335
	340	345
His Lys Asn Asn Met Leu Asp Leu Tyr Gln Leu Gly Leu Asn Ser Asn		350
	355	360
Thr Asn Val Ala Ile Arg Gly Gly Asn Asp Lys Thr Ser Tyr Tyr Thr		365
370	375	380
Ser Leu Ser Tyr Lys Lys Ala Arg Ser Thr Ser Glu Lys Asn Thr Phe		385
	390	395
Glu Arg Tyr Ser Phe Leu Leu Lys Gly Ser His Lys Ile Ser Asp Arg		400
	405	410
Val Glu Val Ser Ala Ala Met Ser Phe Thr Asn Ser Asn Pro Lys Asn		415
	420	425
Ser Pro Arg Thr Val Gly Glu Arg Phe Val Asn Pro Asn Gly Thr Ile		430
	435	440
Met Thr Pro Met Leu Asp Val Asn Tyr Phe Arg Asp Lys Tyr Leu Gly		445
450	455	460
Glu His Gly Gly Leu Ala Ser Thr Ser Tyr Gly Asp Lys Tyr Gly Ser		465
	470	475
Val Pro Gly Arg Asp Leu Phe Phe Met Ile Asp Lys Tyr Asp Tyr Ser		480
	485	490
Gln Lys Glu Thr Val Val Arg Pro Gln Met Glu Val Asn Val Gln Ile		495
	500	505
Leu Asp Trp Leu Arg Phe Lys Ala Asp Ala Asn Met Asn Tyr Tyr Tyr		510
	515	520
Thr Lys Phe Glu Glu Lys Gln Leu Gly Ser Gly Tyr Ala Asn Glu Gly		525
530	535	540
Gly Lys Tyr Thr Met Gly Gln Thr Thr Lys Glu Gln Ala Thr Phe Gly		545
	550	555
Gly Thr Phe Thr Val Asn Lys Gln Ile Gln Asp Phe Ser Val Gly Gly		560
	565	570
Phe Ala Arg Tyr Glu Tyr Tyr Thr Ser Arg Ser Glu Ala Tyr Lys Val		575
	580	585
Tyr Thr Asp Gly Gly Met Val Val Pro Gly Gln Trp Phe Val Asp Asn		590
	595	600
Ser Lys Asn Pro Lys Lys Ser Glu Ala Ser Ile Ser Asn Thr Lys Arg		605
610	615	620
Met Met Ser Ala Val Phe Ala Leu Asn Leu Gly Trp Lys Asn Gln Val		625
	630	635
Tyr Leu Asp Val Thr Gly Arg Asn Asp Trp Ser Ser Ser Leu Val Tyr		640
	645	650
Gln Asn Gly Met Gly Thr Tyr Ser Tyr Phe Tyr Pro Ser Val Ser Gly		655
	660	665
Ser Trp Leu Leu Asn Glu Thr Phe Asp Leu Pro His Trp Ile Thr Phe		670
675	680	685

Ala Lys Val Arg Gly Ser Trp Ala Gln Val Gly Asn Asp Thr Asp Pro
 690 695 700
 Tyr Tyr Val Asn Ser Val Tyr Gly Phe Glu Thr Lys Glu Met Tyr Asp
 705 710 715 720
 Gly Asn Ile Tyr Val Asn Thr Leu Asp Lys Thr Met Lys Ser Leu Lys
 725 730 735
 Leu Lys Pro Glu Arg Lys Asn Ala Trp Glu Val Gly Leu Asp Leu Arg
 740 745 750
 Leu Phe Asp Ser Ser Leu Thr Leu
 755 760

<210> 6610
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 6610
 Ile Cys Ile Ser Val Pro Gln Leu Ile Ala Cys Cys Gly Leu Asp Cys
 1 5 10 15
 Glu Asn Cys Asp Ala Arg Ile Ala Thr Val Arg Asp Asp Asn Glu Leu
 20 25 30
 Arg Glu Lys Thr Ala Gln Lys Trp Ser Ile Met Asn Asn Ala Pro Glu
 35 40 45
 Ile Thr Pro Ala Thr Ile Asn Cys Met Gly Cys Arg Thr Asp Gly Ala
 50 55 60
 Lys Phe Ala Tyr Cys Asn Asp Tyr Cys Pro Ile Arg Lys Cys Val Asn
 65 70 75 80
 Glu Lys Gly Tyr Asn Thr Cys Gly Asp Cys Lys Glu Leu Asp Asp Cys
 85 90 95
 Gln Ile Val Gly Ala Ile Phe Gln His Ala Pro Asp Ala Lys Glu Asn
 100 105 110
 Leu Leu

<210> 6611
 <211> 321
 <212> PRT
 <213> B.fragilis

<400> 6611
 Ile Val Thr Ser Leu Lys Leu Glu Asp Arg Leu Met Lys Asp Pro Phe
 1 5 10 15
 Lys Leu Asn Val Lys Ser Ile Met Ala Leu Tyr Glu Leu Phe Pro Thr
 20 25 30
 Glu Glu Ala Cys Ile Lys His Leu Glu Ala Ile Asn Trp His Asp Lys
 35 40 45
 Pro Val Ser Pro Phe Asp Lys Thr Ser Arg Val Tyr Lys Leu Lys Ser
 50 55 60
 Gly Lys Tyr Arg Cys Lys Asn Thr Gly Lys Asn Phe Thr Val Arg Thr
 65 70 75 80
 Gly Thr Met Phe Glu Lys Thr Lys Ile Ser Leu Arg Lys Trp Phe Ile
 85 90 95
 Ala Ile Trp Leu Val Thr Asn His Lys Ile Gly Leu Ser Ser Tyr Gln
 100 105 110
 Leu Ala Asn Asp Ile Glu Val Thr Gln Lys Thr Ala Trp Tyr Met Leu
 115 120 125
 His Lys Ile Arg His Ala Met Arg Leu Ala Asn Glu Asn Ile Leu Glu
 130 135 140
 Glu Ala Val Glu Ile Asp Glu Thr Val Val Gly Gly Lys Asn Gly Asn

145		150		155		160									
Arg	His	Lys	Asp	Lys	Lys	Val	Pro	His	Ser	Gln	Gly	Arg	Ser	His	Lys
		165							170					175	
Asp	Lys	Phe	Pro	Val	Val	Gly	Met	Ile	Gln	Arg	Glu	Asn	Leu	Met	Asn
		180							185					190	
Ala	Arg	Ala	Thr	Pro	Asp	Thr	Lys	Ser	Asp	Thr	Leu	Ser	Ala	Phe	Ile
		195							200					205	
Lys	Glu	Tyr	Ile	His	Pro	Asp	Ala	Ile	Ile	Tyr	Thr	Asp	Glu	Tyr	Asn
		210							215					220	
Ala	Tyr	Asp	Gln	Ile	Gly	Phe	Ser	Tyr	Thr	Arg	Phe	Tyr	Val	Asp	His
		225												230	
Ser	Lys	Lys	Leu	Tyr	Ser	Tyr	Asp	His	Ile	Thr	Thr	Asn	Arg	Ile	Glu
														245	
Gly	Ala	Trp	Thr	His	Phe	Lys	Arg	Met	Val	Lys	Gly	Thr	Tyr	Arg	Thr
														250	
Leu	Leu	Lys	Lys	Tyr	Leu	Gln	Lys	Tyr	Val	Asp	Glu	Phe	Val	Tyr	Arg
		260												265	
Tyr	Asn	Leu	Arg	Asp	Ile	Ser	Asn	Ser	Asp	Arg	Leu	Asn	Cys	Phe	Leu
		275												280	
Cys	Cys	Ala	Asp	Thr	Arg	Tyr	Thr	Tyr	Lys	Gln	Ile	Arg	Lys	Ser	Ala
		290												295	
														300	
		305												310	
														315	
															320

<210> 6612
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 6612															
Arg	Thr	Gln	Ser	Phe	Lys	Lys	Thr	Lys	Arg	Thr	Asn	His	Ala	Ile	Ala
1				5					10					15	
Lys	Ser	Met	Arg	Phe	Tyr	Ser	Ile	Pro	Ile	Phe	Gln	Ala	Gly	Lys	Asn
				20					25					30	
Arg	Phe	Ser	Ala	Phe	Ser	Lys	Tyr	Lys	Met	Thr	Asn	Arg	Leu	Leu	Ile
				35					40					45	
Arg	Tyr	Ser	Thr	His	Asp	Phe	Gln	Cys	Cys	Ile	Gln				
				50					55					60	

<210> 6613
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 6613															
Pro	Thr	Arg	Ser	His	Thr	Met	Lys	Leu	Arg	Lys	Pro	Phe	Arg	Ile	Leu
1				5					10					15	
Arg	Asn	Leu	Ile	Leu	Phe	Phe	Phe	Ile	Ser	Ser	Ile	Gly	Ala	Val	Ile
				20					25					30	
Phe	Tyr	Arg	Phe	Val	Pro	Val	Tyr	Val	Thr	Pro	Leu	Met	Ile	Ile	Arg
				35					40					45	
Ser	Val	Gln	Gln	Leu	Val	Ser	Gly	Glu	Lys	Val	Val	Cys	Lys	His	Thr
				50					55					60	
Trp	Val	Pro	Phe	Asp	Lys	Ile	Ser	Pro	Ser	Leu	Pro	Met	Ala	Val	Ile
				65					70					75	
Ala	Ser	Glu	Asp	Asn	Arg	Phe	Ala	Ser	His	Asn	Gly	Phe	Asp	Met	Ile
				85					90					95	
Glu	Ile	Lys	Lys	Ala	Met	Lys	Glu	Asn	Glu	Thr	Arg	Lys	Lys	Glu	Thr
				100					105					110	

Gly Cys Gln Tyr His Gln Pro Ala Asp Ser Glu Lys Arg Leu Ser Leu
 115 120 125
 Ala Thr Ile Phe Val Asp Thr Lys Arg Ile
 130 135

<210> 6614
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 6614
 Glu Ser Pro Ser Thr Pro Cys Ser Cys Leu Ser Arg Arg Ser Thr Arg
 1 5 10 15
 Asn Met Tyr Cys Lys Pro His Arg Pro Gly Asn Thr Pro Gln Val Pro
 20 25 30
 Asp Asn Lys Gly Lys Cys Thr Arg Leu Val Asp Tyr Leu Ser Lys Glu
 35 40 45
 Ser Gln Val Glu Arg Pro Tyr Tyr Asp Asn Phe Phe Ser Gln Gln Lys
 50 55 60
 Asp Tyr Val Ile Pro Leu Thr Val Lys Asn His Ile Asp Asn Asn His
 65 70 75 80
 Arg Thr Leu Lys Ser Asn Asp Asp Lys Phe Tyr Met Leu Ser Ile Asn
 85 90 95
 Pro Ser Gly Asp Glu Gln Arg His Leu Ile Glu Arg Val Thr Gly Arg
 100 105 110
 Lys Val Gly Glu Phe Ser Glu Leu Thr Pro Gly Glu Gln Glu Ser Val
 115 120 125
 Leu Ala Gln Met Lys Lys Phe Thr Arg Glu Cys Met Asp Glu Tyr Ala
 130 135 140
 Arg Asn Phe Tyr Arg Glu Lys Ile Lys Ser Gly Asp Asp Leu Val Trp
 145 150 155 160
 Tyr Gly Arg Val Glu Thr Glu Arg His Tyr Lys Asn Asp Asp Pro Glu
 165 170 175
 Val Lys Ala Gly Arg Ala Lys Ala Gly Asp Lys Lys Pro Gly Leu Gln
 180 185 190
 Leu His Val His Val Ile Val Ser Arg Met Asp Arg Thr Gln Thr Val
 195 200 205
 Ser Leu Ser Pro Leu Ser Lys Ser Arg Gly Asn Arg Gln Val Leu Glu
 210 215 220
 Gly Arg Glu Val Val Val Gly Phe Asp Arg Ser Gln Trp Ser Ser Arg
 225 230 235 240
 Cys Ala Ser Arg Phe Asn Gln Leu Tyr Asp Tyr Phe Pro Asn Tyr Tyr
 245 250 255
 Ser Arg Asp Glu Ser Leu Arg Lys Tyr Ser Glu Asn Trp Gln Ala Lys
 260 265 270
 Asn Glu Leu Lys Asn Glu Ala Val Ser Lys Leu Lys Gln Glu Val Leu
 275 280 285
 Lys Gly Glu Leu Lys Glu Glu Arg Arg Leu Tyr Ala Asn Thr Phe Arg
 290 295 300
 Ile Tyr Arg Phe Val Val Asn Pro Arg Lys Ala Ile Ile Gln Glu Leu
 305 310 315 320
 Lys Arg Leu Gly Thr Asp Leu Leu Ser Gly Arg Asp Leu
 325 330

<210> 6615
 <211> 322
 <212> PRT
 <213> B.fragilis

<400> 6615

Thr Ala Thr Pro Tyr Lys Asn Lys Asp Trp Gln Trp Asp Val Ala Met
 1 5 10 15
 Thr Tyr Thr Lys Asn Lys Asn Thr Ile Ile Ser Leu His Glu Asn Val
 20 25 30
 Ala Asp Tyr Ile Ala Leu Ser Gly Tyr Ala Asn Asp Tyr Asp Tyr His
 35 40 45
 Ile Gly Ser Val Ala Lys Val Gly Gly Asp Tyr Gly Leu Leu Met Ser
 50 55 60
 Asp Ile Leu Pro Ala Lys Asn Glu Lys Gly Glu Thr Leu Leu Glu Trp
 65 70 75 80
 Asp Asp Ser Trp Arg Gly Ala Tyr Glu Ala Arg Ser Gly Lys Val Gln
 85 90 95
 Glu Val Gly Lys Met Thr Pro Asp Phe Leu Gly Ser Leu Ser Thr Thr
 100 105 110
 Leu Ser Trp Lys Asn Leu Ser Leu His Ile Ala Thr Asp Met Arg Phe
 115 120 125
 Gly Gly Leu Val Ala Ser Tyr Ser Asn Leu Tyr Gly Thr Gln Ala Gly
 130 135 140
 Trp Ile Lys Ser Ser Leu Lys Trp Arg Asp Pro Glu His Gly Gly Leu
 145 150 155 160
 Ser Trp Thr Ser Gln Tyr Gly Asp Ser Lys Gly Ile Ser Tyr Gly Asp
 165 170 175
 Gly Val Ile Pro Asp Gly Val Phe Lys Asn Gly Thr Phe Ala Thr Leu
 180 185 190
 Val Asp Gly Thr Lys Met Asp Val Ser Gly Met Ser Tyr Lys Gln Leu
 195 200 205
 Val Ala Glu Gly Lys Leu Glu Pro Thr His Ala Gly Thr Tyr His Val
 210 215 220
 Asn Arg Ala Ala Trp Gly Gln Asn Thr Ile Phe Asp Thr Trp Val His
 225 230 235 240
 Glu Leu Asn Tyr Ile Ala Leu Arg Glu Ile Thr Leu Ser Tyr Arg Phe
 245 250 255
 Pro Lys Ser Val Ala Ser Lys Phe Gly Ala Gln Gly Leu Gly Leu Ser
 260 265 270
 Phe Ser Ala Arg Asn Leu Gly Tyr Leu Tyr Asn Ser Leu Pro Asn His
 275 280 285
 Leu Asn Pro Glu Ser Val Arg Gly Asn Thr Ala Ser Glu Phe Arg Ile
 290 295 300
 Arg Gly Tyr Glu Pro Tyr Thr Ala Asn Tyr Met Met Thr Ile Asn Val
 305 310 315 320
 Asp Phe

<210> 6616

<211> 288

<212> PRT

<213> B.fragilis

<400> 6616

Glu Leu Tyr Pro Asp Ile Met Asn Arg Ile Glu Lys Asn Lys Thr Gln
 1 5 10 15
 Thr Asp Gln Ala Trp Asn Lys Leu His Asn Arg Leu Glu Thr Asp Gly
 20 25 30
 Leu Leu Pro Thr Val Thr Glu Arg Arg Phe Ala Thr Arg Pro Thr Val
 35 40 45
 Trp Ile Gly Ile Ala Ala Ile Ala Ala Ile Ile Ser Leu Cys Val Tyr
 50 55 60
 Leu Pro Thr Val Leu Arg Thr Asp Arg His Leu Ser Gly Gly Glu Leu

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65              70              75              80
Leu Val Lys Ala Asn Lys Glu Glu Ser Ile Leu Val Thr Thr Leu Glu
              85              90              95
Asp Gly Ser Val Val Tyr Leu Ser Glu Gln Thr Ser Leu Glu Tyr Pro
              100             105             110
Lys His Phe Ser Lys Lys Arg Arg Glu Val Ser Leu Lys Gly Asn Ala
              115             120             125
Leu Phe Asp Ile Ala Gly Asn Arg Ala Arg Pro Phe Phe Ile Glu Thr
              130             135             140
Gly Lys Val Gln Ile Glu Val Ile Gly Thr Ala Phe His Val Arg Asn
145              150              155              160
Ser Gly Asn Ser Pro Phe Glu Leu Ala Val Gln Arg Gly Glu Val Lys
              165              170              175
Val Thr Gln Lys Gln Asn Gly Gln Glu Ile His Val Lys Ala Gly Glu
              180             185             190
Thr Ala Thr Leu Leu Gly Asp Glu Trp Gln Leu Thr Val Thr Glu Asn
              195             200             205
Ser Glu Gln Phe Thr Arg Tyr Met Gln Asn Met Arg Phe Lys Asp Glu
              210             215             220
Gln Leu Asp His Ile Leu His Ala Ile Asn Leu Arg Gln Thr Glu Ile
225              230              235              240
His Leu Gln Ser Ser Pro Glu Leu Gly Lys His Val Leu Thr Val Ser
              245             250             255
Phe Ser Glu Asp Ser Pro Glu Lys Met Ala Glu Leu Ile Gly Leu Ala
              260             265             270
Leu Asn Leu Lys Cys Thr Arg Asn Gln Asn Ile Ile Thr Leu Ser Glu
              275             280             285

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<210> 6617
<211> 148
<212> PRT
<213> B.fragilis

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<400> 6617
Ala Leu Phe Pro Leu Ala Pro Ser Leu Pro Leu Ala Pro Ser Phe Pro
1              5              10              15
Ala Ala Pro Ser Leu Pro Leu Ile Pro Ser Phe Pro Leu Ala Pro Ser
              20              25              30
Phe Pro Leu Ala Pro Ser Leu Pro Leu Met Pro Ser Leu Pro Leu Ala
              35              40              45
Pro Ser Leu Pro Tyr Ala Arg Ile Pro Val Ser Phe Pro Leu Ile Tyr
              50              55              60
Gln Phe Pro Leu Val Pro Ile Ile Thr Ser Gly Asp Leu Pro Ser Leu
65              70              75              80
Pro Ile Ala Ala Phe Pro Val Ser Phe Pro Leu Ile Thr Gln Phe Pro
              85              90              95
Phe Ser Pro Ile Val Thr Val Gly Val Val Pro Ala Thr Pro Ser Ser
              100             105             110
Pro Leu Glu Gly Phe Pro Val Ser Thr Pro Ser Ile Asn Gln Leu Pro
              115             120             125
Leu Ser Pro Ile Val Thr Thr Gly Gly Thr Ala Ser Ser Pro Phe Cys
              130             135             140
Pro Ser Leu Pro
145

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<210> 6618
<211> 96
<212> PRT
<213> B.fragilis

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Tyr	Gly	Pro	Phe	Glu	Gly	Leu	Leu	Arg	Pro	Gly	Glu	His	Arg	Ala	Glu
1				5					10					15	
Trp	Phe	Pro	Val	Phe	Gly	Gln	Leu	Leu	Phe	Asp	Ala	Thr	Val	Val	Asn
			20					25					30		
Ser	Thr	Glu	Tyr	Ala	His	Val	Lys	Gly	Tyr	Gly	Val	Arg	His	Asn	Pro
		35					40					45			
Cys	Cys	Ser	Gln	Val	Arg	Leu	Ile	Ile	Phe	His	Glu	Tyr	Met	Val	Tyr
	50					55					60				
Arg	Ala	Asn	Val	Asn	Val	Pro	Val	Ile	Pro	Glu	Leu	Phe	Glu	Thr	Ala
65					70					75					80
Lys	Arg	Ser	Ile	Ile	Val	Leu	Gly	Gly	Ala	Gly	Val	Val	Gln	Leu	Pro
				85					90					95	

 $\langle 211 \rangle$ 466

<212> PRT

<213> B.fragilis

Gly 1	Leu	Gln	Pro	Glu 5	Glu	Ser	Arg	Ile	Phe 10	Ala	Thr	His	Phe	Leu 15	Leu
Asn	Asn	Ile	Met 20	Gln	Gly	Ile	Lys	Asn 25	Leu	Thr	Gln	Gly	Pro 30	Ile	Asn
Lys	Gln	Leu	Phe 35	Asn	Leu	Ala	Met 40	Pro	Ile	Met	Ala	Thr	Ser 45	Phe	Ile
Gln	Met 50	Ala	Tyr	Ser	Leu	Thr 55	Asp	Met	Ala	Trp	Val 60	Gly	Arg	Leu	Gly
Ser 65	Glu	Ala	Val	Ala	Ala 70	Val	Gly	Ser	Val	Gly 75	Ile	Leu	Thr	Trp	Met 80
Ser	Gly	Ser	Ile	Ser 85	Leu	Leu	Asn	Lys	Val 90	Gly	Ser	Glu	Val	Ser 95	Val
Gly	Gln	Ser	Ile 100	Gly	Ala	Gln	Asn	His 105	Glu	Asp	Ala	Arg	Asn 110	Phe	Ala
Ser	His	Asn 115	Ile	Thr	Ile	Ala	Leu	Ile 120	Ile	Ser	Leu	Cys 125	Trp	Gly	Gly
Leu	Leu 130	Phe	Leu	Leu	Ala	Arg	Pro	Ile 135	Ile	Gly	Ile	Tyr 140	Glu	Leu	Glu
Ala 145	His	Ile	Thr	Glu	Asn 150	Ala	Ile	Ala	Tyr	Leu 155	Arg	Ile	Ile	Ser	Thr 160
Gly	Leu	Pro	Phe	Ile 165	Phe	Leu	Ser	Ala	Ala 170	Phe	Thr	Gly	Ile	Tyr 175	Asn
Ala	Ala	Gly	Arg 180	Ser	Lys	Ile	Pro	Phe 185	Tyr	Ile	Ser	Gly	Thr 190	Gly	Leu
Val	Leu	Asn 195	Ile	Leu	Leu	Asp	Pro 200	Leu	Phe	Ile	Phe	Gly 205	Phe	Gly	Leu
Gly	Thr 210	Asn	Gly	Ala	Ala	Tyr 215	Ala	Thr	Trp	Ile	Ser	Gln 220	Ala	Ala	Val
Phe 225	Gly	Ile	Phe	Ile	Tyr 230	Gln	Leu	Arg	Cys	Arg 235	Asp	Ala	Leu	Leu	Gly 240
Arg	Phe	Tyr	Phe	Phe 245	Thr	Arg	Leu	Lys	Lys 250	Lys	Tyr	Thr	His	Arg 255	Ile
Leu	Lys	Leu	Gly 260	Leu	Pro	Val	Ala	Thr 265	Leu	Asn	Thr	Leu	Phe	Ala 270	Phe
Val	Asn	Met 275	Phe	Leu	Cys	Arg	Thr 280	Ala	Ser	Glu	Gln	Gly 285	Gly	His	Ile
Gly	Leu 290	Met	Thr	Phe	Thr	Thr 295	Gly	Gly	Gln	Ile	Glu	Ala 300	Ile	Thr	Trp

3200

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Asn Thr Ser Gln Gly Phe Ser Thr Ala Leu Ser Ala Phe Ile Ala Gln
305                      310                      315                      320
Asn Tyr Ala Ala Gly Arg Thr Asp Arg Val Ile Lys Ser Trp His Met
                      325                      330                      335
Thr Leu Leu Met Thr Ser Ile Phe Gly Thr Leu Cys Thr Leu Leu Phe
                      340                      345                      350
Val Phe Phe Gly Asn Glu Ile Phe Ala Leu Phe Val Pro Glu Gln Ala
                      355                      360                      365
Ala Tyr Glu Ala Gly Gly Val Phe Leu Arg Ile Asp Gly Tyr Ser Gln
                      370                      375                      380
Leu Phe Met Met Leu Glu Ile Thr Thr Gln Gly Val Phe Tyr Gly Ile
385                      390                      395                      400
Gly Arg Thr Ile Pro Pro Ala Ile Ile Ser Ile Thr Cys Asn Tyr Met
                      405                      410                      415
Arg Ile Pro Leu Ala Ile Leu Phe Val Arg Met Gly Met Gly Val Glu
                      420                      425                      430
Gly Ile Trp Trp Ala Val Cys Val Thr Thr Val Ala Lys Gly Leu Ile
                      435                      440                      445
Leu Ala Gly Trp Phe Ala Leu Ile Lys Arg Lys Val Leu Ser Arg Pro
450                      455                      460
Ile Leu
465

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<210> 6620
<211> 78
<212> PRT
<213> B.fragilis

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<400> 6620
Leu Pro Ser Thr Thr His Asp Ile Asp Thr His Met Ile Thr Ala Thr
1                      5                      10                      15
Met Glu Gly Asn Ala Ala Ala Gln Asp Phe Leu Ser His Leu Pro Leu
                      20                      25                      30
Lys Ala Thr Leu Pro Phe Ile Pro Arg Gly Val Ala Leu Gln Phe Ser
                      35                      40                      45
Ala Phe Leu Thr Pro Thr His Leu Ser Ser Glu Lys Phe Val Ala Val
50                      55                      60
Val Leu Met Thr Asn Ser Phe Val Thr Val Cys Glu Trp Gln
65                      70                      75

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<210> 6621
<211> 401
<212> PRT
<213> B.fragilis

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<400> 6621
Ser Met Ala Thr Val Lys Ala Lys Phe Arg Pro Ser Thr Val Lys Asp
1                      5                      10                      15
Arg Pro Gly Thr Ile Val Tyr Val Val Ile His Arg Arg Thr Val Arg
20                      25                      30
Gln Ile Thr Thr Gly Tyr Lys Val Phe Pro His Glu Trp Asp Glu Glu
35                      40                      45
Arg Ser Lys Pro Val Leu Ala Asp Asn Val Arg Arg Thr Thr Val Met
50                      55                      60
Gln Ser Ile Thr Arg Lys Leu Gln Ser Asp Met Lys Arg Leu Tyr Lys
65                      70                      75                      80
Ile Ile Glu Arg Phe Asp Lys Gln Cys Arg Ser Tyr Ser Ser Asp Asp
85                      90                      95
Val Val Ala Glu Phe Arg His Ser Glu Glu Gly Asp Ser Phe Phe Asn

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      100      105      110
Phe Met Glu Gly Val Ile Glu Arg Leu Arg Gln Leu Asn His Ser Gly
      115      120      125
Thr Ala Lys Asn Tyr Asn Ala Ala Leu Gly Ser Phe Lys Gln Phe Arg
      130      135      140
Asp Asn Arg Asp Ile Tyr Ile Gly Ser Ile Asp His Ile Leu Met Glu
145      150      155      160
Asp Tyr Gln Ala Tyr Leu Thr Ala Thr Gly Ile Val Pro Asn Ser Ile
      165      170      175
Ser Phe Tyr Met Arg Ile Leu Arg Ala Val Tyr Asn Arg Gly Val Glu
      180      185      190
Gln Glu Leu Thr Glu Asp Arg Lys Pro Phe Arg Thr Val Phe Thr Gly
      195      200      205
Thr Glu Lys Thr Leu Lys Arg Ala Ile Ser Ile Asn Asp Ile Arg Arg
      210      215      220
Ile Arg Asn Leu Asp Leu Ser Leu Lys Pro Gly Leu Glu Phe Ala Arg
225      230      235      240
Asp Leu Phe Leu Phe Leu Phe Leu Cys Arg Gly Met Ser Phe Ile Asp
      245      250      255
Ala Ala Phe Leu Lys Lys Ala Asp Ile Gln Asn Gly Val Leu Thr Tyr
      260      265      270
Arg Arg His Lys Thr Gly Gln Leu His Ile Lys Val Ile Lys Gln
      275      280      285
Ile Glu Glu Ile Val Asp Arg His Ser Asp Lys Glu Ser Pro Tyr Leu
      290      295      300
Phe Pro Val Ile Thr Arg Pro Gly Glu Asn Glu Arg Lys Gln Tyr Glu
305      310      315      320
Thr Ala Leu His His Val Asn Lys Ser Leu Lys Ile Ile Ala Gly Met
      325      330      335
Ile Lys Leu Pro Val Ala Leu Thr Thr Tyr Thr Thr Arg His Ala Trp
      340      345      350
Ala Thr Ile Ala Lys Ser Lys Asn Val Pro Val Asn Val Ile Ser Asp
      355      360      365
Ala Leu Gly His Asp Ser Ile Thr Thr Thr Gln Ile Tyr Leu Ala Ser
      370      375      380
Ile Asp Val Ser Val Ile Asp Lys Ala Asn Glu Leu Ile Ile Lys Asp
385      390      395      400
Leu

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<210> 6622

<211> 193

<212> PRT

<213> B.fragilis

<400> 6622

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Arg Thr Leu Thr Pro Asp Ile Ser Pro Asn Met Leu Asn Asp Val Phe
1      5      10      15
Ile Leu Thr Gln Ile Lys Glu Gly Asn Ile Lys Ala Phe Glu Thr Leu
      20      25      30
Phe Arg Gln Tyr Tyr Thr Pro Leu Arg Leu Tyr Ala Ala Ser Ile Thr
      35      40      45
Gly Glu Pro Asp Val Ala Glu Glu Ile Val Glu Glu Leu Phe Tyr Val
      50      55      60
Phe Trp Lys Asp Arg Glu Lys Leu Glu Ile Phe His Ser Val Lys Asn
65      70      75      80
Tyr Leu Tyr Arg Ser Val Arg Asn Arg Ser Ile Gln Tyr Cys Glu His
      85      90      95
Gln Asp Val Arg Arg Arg Tyr Gln Asp Ala Ile Leu Ser Val Pro Val

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      100      105      110
Asn Ile Ala Ser Pro Asp Pro Gln Glu Gln Ile Glu Tyr Lys Glu Leu
      115      120      125
Gln Gln Ile Ile Asn Arg Thr Leu Glu Lys Leu Pro Glu Arg Arg Leu
      130      135      140
His Ile Phe Arg Leu His His Thr Glu Gly Lys Lys Tyr Ser Glu Ile
145      150      155      160
Ala Ser Leu Leu Ser Leu Ser Val Lys Thr Val Glu Lys Glu Met Thr
      165      170      175
Arg Ala Leu Arg Thr Leu Arg Lys Glu Ile Glu Asn Tyr Ile Gln Ile
      180      185      190
Ser

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<210> 6623
<211> 93
<212> PRT
<213> B.fragilis

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<400> 6623
Arg Lys Ala Thr Pro Tyr Thr Ile Asp Thr Asp Gly Gly Ser Arg Cys
1      5      10      15
Leu Phe Ile Ser Glu Lys Val Met Glu Val Phe Asp Asp Gly Phe Asp
      20      25      30
Tyr Arg Glu Val Ala Asn His Lys Glu Leu Thr Asp Leu Thr Val Ala
      35      40      45
Leu Phe Ala Gly Met Ile Ser Ala Gln Pro Pro Arg Thr Ala Ala Met
      50      55      60
Glu Val Pro Val Ala Cys Leu Arg Glu Asp Ala Arg Thr Gly Thr Asn
65      70      75      80
Gly Asn Gly His Ala Val Ala Pro Val Lys Arg Lys Gly
      85      90

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<210> 6624
<211> 296
<212> PRT
<213> B.fragilis

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<400> 6624
Ile Ala Glu Thr Met Glu Ile Phe Ser Leu Lys Glu His Val Ser Cys
1      5      10      15
Tyr Asn Tyr Ala Lys Cys Ile Arg Glu Gly Phe Ser Tyr Tyr Glu Ser
      20      25      30
Ser Lys Thr Glu Thr Asp Glu Gly Pro His Glu Thr Asp Cys Ile Leu
      35      40      45
Phe Val Met Glu Gly Glu Leu Glu Leu Ser Cys Asn Gly Glu Arg Ile
      50      55      60
Lys Leu Pro Ala Gly Asn Met Ile Cys Cys Ser Arg Glu Ser Met Tyr
65      70      75      80
Arg Val Phe Ser Gln Gly Lys Met Ser Ile Val Ile Ala Gln Phe Asp
      85      90      95
Asn Ala Val Gln Ser Cys Glu Lys Val Ser Phe Ser Gln Leu Asn Ser
      100      105      110
Leu Asn Ser Ser Gly Glu Lys Gly Ile Tyr Pro Leu Glu Ile Arg Asp
      115      120      125
Arg Leu Gln Leu Phe Leu Lys Leu Leu Ile Gly Tyr Leu Gly Asp Gly
      130      135      140
Ala Ser Cys Val His Phe His Glu Thr Lys Leu Lys Glu Leu Phe Trp
145      150      155      160

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Asn Ile Arg Phe Tyr Tyr Thr Arg Thr Glu Gln Ala Ser Phe Phe Arg
 165 170 175
 Pro Ile Leu Gly Asn Asp His Glu Phe Lys Lys Lys Val Leu Asp Asn
 180 185 190
 Tyr Arg Asn Ala Arg Thr Val Lys Glu Leu Ala Gln Met Cys Glu Ser
 195 200 205
 Ser Leu Ser Thr Phe Lys Arg Lys Phe Phe Lys Glu Phe Arg Glu Pro
 210 215 220
 Ala Ser Glu Trp Leu Gln Lys Gln Met Asn Ser Ile Ile Lys Tyr Lys
 225 230 235 240
 Leu Ala Asp Glu Asp Ile Pro Ile Arg Asn Ile Ala Asp Glu Leu His
 245 250 255
 Phe Ser Ser Gln Pro Gln Phe Cys Arg Tyr Cys Lys Arg Asn Phe Gly
 260 265 270
 Tyr Thr Pro Gly Glu Trp Arg Lys Leu Leu Lys Asn Arg Asp Lys Thr
 275 280 285
 Pro Arg Arg Pro Ser Gly Arg Val
 290 295

<210> 6625

<211> 123

<212> PRT

<213> B.fragilis

<400> 6625

Pro Tyr Arg Thr Arg Gln Ser Leu Gln Gln Ile Glu Cys Arg Leu Met
 1 5 10 15
 Ile Lys Cys Asp Pro Leu Cys Gly Asn Ser Thr Ile Ser Lys Val Ser
 20 25 30
 Gly Gly Ile Cys Lys Thr Thr Lys Val Asn Phe Pro Val Tyr Gly Leu
 35 40 45
 Ser Glu Asn Lys Arg Thr Arg Tyr Pro Met Ile Ala Ala Leu Ile Asp
 50 55 60
 Arg Phe Asn Arg Lys Phe Leu Ala Ile His Met Leu Pro Tyr Leu Ile
 65 70 75 80
 Leu Thr Ile Glu Tyr Ile Ala Arg Arg Glu Ile Leu Ile Asp Ser His
 85 90 95
 Leu Val Leu Tyr Ile Leu Ile Gly Cys Leu Ala Val Glu Ala Asp Met
 100 105 110
 Gly Ala Val Ile Pro Tyr Val Asp Ser Gly Gly
 115 120

<210> 6626

<211> 162

<212> PRT

<213> B.fragilis

<400> 6626

Ile Ile Met Thr Ser Lys Asp Phe Ile Glu Ala Glu Ala Gly Asn Asn
 1 5 10 15
 Gly Ser Ile Ile Leu Tyr Arg Glu Gly Leu Phe Trp Lys Ala Tyr Glu
 20 25 30
 Lys Ser Ala Tyr Ala Val Cys Thr Gln Ile Lys Pro Leu Lys Ala Ile
 35 40 45
 Lys Arg Arg Leu Lys Ser Leu Gly Gly Gly Glu Ile Val Ser Val Gly
 50 55 60
 Phe Pro Cys Lys His Gln Lys Tyr Ile Gly Ser Leu Glu His Met
 65 70 75 80
 Glu Thr Met Pro Asp Arg Leu Val Leu Arg Thr Leu Lys Pro Ile Asp

				85					90					95			
Gly	Gln	Arg	Phe	Glu	Glu	Trp	Lys	Gln	Glu	Leu	Ser	Ser	Glu	His	Ser		
			100					105					110				
Val	Val	Gly	Arg	Arg	Asp	Ala	Cys	Val	Gln	Asn	Leu	Ser	Arg	Ser	Asn		
		115					120					125					
Ile	Pro	His	Gly	Glu	Leu	Ile	Met	Arg	Ile	Arg	Met	Phe	Asn	Leu	Ala		
	130					135					140						
Glu	Ser	Thr	Pro	Met	Asp	Cys	Met	Leu	Phe	Val	Asn	Glu	Leu	Lys	Lys		
145				150						155					160		
Met	Leu																

<210> 6627
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6627																	
Ala	Val	Ile	Ala	Phe	Cys	Lys	Ile	Glu	Thr	Ile	Ile	Lys	Ile	Ser	Tyr		
1			5						10					15			
Leu	Gln	Val	Thr	Gly	Glu	Glu	Val	Tyr	Arg	Ser	Leu	Ser	Thr	Tyr	Pro		
		20					25					30					
His	Gly	Leu	Val	Gly	Leu	Val	Asp	Glu	Pro	Asn	Trp	Ile	Gln	Lys	Phe		
	35					40					45						
Arg	Asp	Phe	Cys	Cys	Leu	Tyr	Asn	Tyr	Lys	Asn	His	Ala	Ile	Phe			
	50					55					60						

<210> 6628
 <211> 428
 <212> PRT
 <213> B.fragilis

<400> 6628																	
Cys	Phe	Val	Ala	Phe	Met	Arg	Phe	Leu	Gln	Pro	Phe	Ser	Tyr	Lys	Gln		
1			5						10					15			
Leu	Ile	Tyr	Ile	Ile	Ile	Cys	Asn	Ser	Phe	Ile	Val	Met	Ala	Thr	Val		
		20					25					30					
Lys	Thr	Val	Leu	Val	Lys	Gly	Arg	Cys	Asn	Ser	Arg	Gly	Ala	Tyr	Pro		
	35					40					45						
Leu	Ala	Val	Gln	Val	Leu	His	Lys	Arg	Lys	Lys	Lys	Val	Phe	Tyr	Thr		
	50					55					60						
Gly	Tyr	Ser	Ile	Glu	Pro	Cys	Gln	Phe	Asp	Ser	Ile	Ser	Gly	Arg	Val		
65				70					75					80			
Ile	Phe	Asn	Gly	Met	Tyr	Thr	Met	Glu	Thr	Ile	Arg	Arg	Met	Asn	Arg		
			85						90					95			
Val	Cys	Arg	Lys	Ile	Ser	Lys	Val	Leu	Asp	Lys	Ala	Ile	Asp	Ile	Leu		
		100						105					110				
Glu	Lys	Gly	Asp	Ser	Glu	Tyr	Thr	Thr	Cys	Asp	Ile	Ser	Arg	Ile	Tyr		
	115						120					125					
Glu	Thr	Leu	Thr	Gly	Lys	Val	Gly	Phe	Tyr	Ser	Tyr	Phe	Gln	Glu	Arg		
	130					135					140						
Ile	Arg	Val	Leu	Phe	Asp	Thr	Gly	His	Glu	Gly	Thr	Ala	Lys	Ala	Tyr		
145					150					155					160		
Glu	Ser	Thr	Leu	His	Ser	Met	Gln	Arg	His	Leu	Cys	Glu	Ser	Asp	Phe		
			165					170						175			
Pro	Phe	Pro	His	Leu	Ser	Ser	Arg	Leu	Val	Ile	Lys	Tyr	Arg	Asp	Ala		
		180						185					190				
Leu	Gln	Glu	Ala	Gly	Val	Gly	Lys	Asn	Thr	Ile	Gly	Phe	Tyr	Leu	His		
	195						200						205				

Asn Met Lys Ala Val Tyr Arg Arg Gly Cys Leu Glu Leu Asn Leu Val
 210 215 220
 Phe Pro Ser Pro Phe Ser Asp Ile Arg Ile Arg Ser Glu Lys Thr Val
 225 230 235 240
 Lys Gln Ser Leu Pro Met Asn Gln Val Arg Ser Leu Ala Arg Leu Ser
 245 250 255
 Leu Ser Ala Gly Thr Pro Glu Cys Leu Ala Arg Asp Ile Phe Ile Phe
 260 265 270
 Ser Ile Tyr Thr Arg Gly Met Ser Phe Val Asp Ile Ala Leu Leu Lys
 275 280 285
 Lys Ser Asp Val Phe Pro Gly Val Ile Arg Tyr Arg Arg His Lys Thr
 290 295 300
 Gly Gln Leu Leu Glu Ile Gly Ile Asn Arg Gln Ile Gln Ser Leu Leu
 305 310 315 320
 Asp Arg Tyr Gly Asp Thr Ala Gly Asn Tyr Leu Phe Pro Leu Val Asp
 325 330 335
 Glu Ser Glu Thr Pro Tyr Ser Gly Tyr Lys Lys Ala Tyr Asn Lys Met
 340 345 350
 Arg Tyr Ala Leu Lys Lys Val Ser Lys Ser Ile Gly Met Asn Pro Pro
 355 360 365
 Leu Arg Leu His Ala Ala Arg His Cys Trp Ala Thr Met Ala Arg Glu
 370 375 380
 Asn Gly Thr Pro Leu His Thr Ile Ser Glu Cys Leu Gly His Ser Ser
 385 390 395 400
 Glu Lys Met Thr Arg Ile Tyr Leu Lys Glu Leu Asp Arg Ser Val Leu
 405 410 415
 Asp Glu Val Asn Asn His Ile Ala Asp Asn Ile Cys
 420 425

<210> 6629

<211> 523

<212> PRT

<213> B.fragilis

<400> 6629

Thr Asp Thr Ala Met Glu Ile Arg Lys Gln Tyr Phe Lys Glu Lys Gln
 1 5 10 15
 Tyr Met Trp His Lys Val Arg Glu Leu Gln Leu Lys Gly Leu Asn Lys
 20 25 30
 Thr Gln Ile Gly Ile Tyr Leu Gly Val Asn Arg Lys Thr Val Arg Arg
 35 40 45
 Tyr Leu Asn Met Thr Met Glu Glu Phe Val Lys Lys Gln Ser Ser His
 50 55 60
 Arg Lys Tyr Arg Leu Lys Leu Glu Asn Tyr Glu Gln Tyr Val Arg Ala
 65 70 75 80
 Asn Leu Glu Glu Tyr Pro Tyr Ile Ser Ala Ala Arg Ile His Asp Trp
 85 90 95
 Leu Lys Glu Cys Tyr Pro Asp Phe Pro Arg Val Cys Asn Arg Thr Val
 100 105 110
 Ser Gly Phe Val Glu Arg Val Arg Lys Lys Tyr Gly Ile Gly Lys Lys
 115 120 125
 Val Glu Thr His Lys Arg Asn Tyr Glu Lys Gln Pro Asp Thr Pro Tyr
 130 135 140
 Gly Glu Tyr Ala Gln Ala Asp Phe Gly Glu Lys Trp Met Arg Thr Glu
 145 150 155 160
 Asn Gly Lys Ser Ile Lys Val Tyr Phe Phe Ala Ile Val Leu Ser Arg
 165 170 175
 Ser Arg Tyr Lys Phe Ile Tyr Phe Ser Arg Arg Pro Phe Asp Thr Gly
 180 185 190

Leu Ala Val Tyr Ala His Glu Leu Ala Phe Glu Tyr Phe Gly Gly Arg
 195 200 205
 Pro Gln Lys Ile Ile Tyr Asp Gln Asp Lys Val Leu Ile Ala Arg Ala
 210 215 220
 Asn Met Gly Asp Leu Ile Leu Thr Gly Lys Phe Gln Ala Phe Val Lys
 225 230 235 240
 Glu Gln His Phe His Pro Val Phe Cys His Lys Ala Asp Pro Glu Ser
 245 250 255
 Lys Gly Lys Val Glu Asn Val Val Lys Tyr Val Lys Thr Asn Phe Leu
 260 265 270
 Thr Ala Arg Ile Phe Gln Asn Val Asp Arg Leu Asn Glu Glu Ala Arg
 275 280 285
 Leu Trp Leu Glu Arg Thr Gly Asn Gly Lys Glu His Gly Thr Thr His
 290 295 300
 Arg Ile Pro Leu Glu Glu Phe Ala Gln Glu Arg Glu Tyr Leu Val Pro
 305 310 315 320
 Tyr His Gly Thr Pro His Ser Pro Gly Gly Glu Met Lys Glu Tyr His
 325 330 335
 Val Arg Lys Asp Asn Thr Val Gln Tyr Arg Gly Asn Tyr Tyr Ser Leu
 340 345 350
 Pro Cys Gly Thr Tyr Arg Gly Gly Glu Thr Thr Val Trp Leu His Glu
 355 360 365
 Thr Asp Gly Cys Leu Glu Leu Tyr Asn Lys Glu Thr Gly Lys Leu Val
 370 375 380
 Cys Arg His Asp Leu Cys Glu Leu Lys Gly Lys Thr Ile Tyr Gly Glu
 385 390 395 400
 Gly His Arg Arg Gln Arg Asn Ile Gly Ala Gln Lys Leu Ala Glu Arg
 405 410 415
 Ile Leu Ile Tyr Val Ser Tyr Asn Arg Glu Val Ala Leu Trp Leu Glu
 420 425 430
 Asn Leu Gln Arg Arg Lys Glu Arg Tyr Tyr Arg Glu Asn Leu Glu Val
 435 440 445
 Ile Leu Arg Ile Ile Pro Gly Tyr Asp Lys Ala Ile Leu Thr Glu Ala
 450 455 460
 Val Ser Val Cys Leu Asp Lys Gly Ile Tyr Asn Gly Glu Ser Val Lys
 465 470 475 480
 Ser Leu Cys Gly His Ile Trp Lys Lys Lys Met Gly Glu Ser Asp Val
 485 490 495
 Gly Lys Asn Pro Ala Ser Arg Thr Gln Ser Thr Gly Leu Val Lys Thr
 500 505 510
 Tyr Asn Glu Ile Phe Arg Asn Asn Gly Lys Val
 515 520

<210> 6630

<211> 478

<212> PRT

<213> B.fragilis

<400> 6630

Gln Thr Asp Ala Pro Leu Ser Thr Leu Ile Phe Lys Thr Phe Ile Thr
 1 5 10 15
 Met Asn Gln Thr Val Thr Glu Asn His Arg Leu Arg Asp Thr Ile Ile
 20 25 30
 Ile Gly Ala Gly Leu Thr Gly Leu Thr Thr Ala Tyr Cys Leu Thr Arg
 35 40 45
 Lys Gly Cys Asp Ile Glu Val Ile Glu Gln Ser Pro Cys Val Gly Gly
 50 55 60
 Gln Ile Arg Thr Tyr His Glu Asn Gly Phe Thr Phe Glu Ser Gly Pro
 65 70 75 80

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Asn Thr Gly Val Ile Ser His Pro Glu Val Ala Glu Leu Leu Ala Glu
      85                      90                      95
Leu Ser Pro Thr Cys Arg Leu Glu Thr Ala Arg Glu Ala Ser Arg Gln
      100                    105                    110
Arg Leu Ile Trp Lys Gly Asp Arg Phe His Ser Leu Pro Ser Gly Leu
      115                    120                    125
Phe Ser Ala Ile Thr Thr Pro Leu Phe Ser Thr Lys Asp Lys Phe Asn
      130                    135                    140
Ile Leu Gly Glu Pro Phe Arg Ala Lys Gly Asn Asn Pro Asp Glu Thr
      145                    150                    155                    160
Ile Gly Glu Leu Val Gln Arg Arg Leu Gly Ile Ser Tyr Leu His Tyr
      165                    170                    175
Ala Val Asp Pro Phe Ile Ser Gly Val Tyr Ala Gly Asp Pro Met Arg
      180                    185                    190
Leu Val Thr Arg His Ala Leu Pro Lys Leu Tyr Gln Leu Glu Gln Thr
      195                    200                    205
Tyr Gly Ser Phe Ile Leu Gly Gly Ile Ala Lys Ser Phe Ser His Arg
      210                    215                    220
Ser Glu His Asp Arg Leu Ala Thr Arg Lys Val Phe Ser Thr Tyr Gly
      225                    230                    235                    240
Gly Leu Ser Asn Leu Thr Lys Ala Leu Glu Gln Ala Ile Gly Ile Lys
      245                    250                    255
Arg Phe Ser Leu Gly Ala Thr Ser Thr Ser Leu Met Pro Cys Glu Gln
      260                    265                    270
Gly Trp Val Val Ser Phe Thr Asp Ser Cys Gly Ile Val Asn Arg Ile
      275                    280                    285
His Cys Arg Lys Val Ile Thr Thr Thr Pro Ala Phe Val Leu Pro Ser
      290                    295                    300
Leu Leu Pro Phe Val Pro Asp Lys Gln Met Asn Arg Ile Ser Asn Leu
      305                    310                    315                    320
Thr Tyr Ala Pro Val Met Gln Val Ser Val Gly Leu Arg Asn Thr Tyr
      325                    330                    335
Gly Lys Glu Phe His Ala Phe Gly Gly Leu Val Pro Ser Cys Glu Gln
      340                    345                    350
Lys Pro Val Leu Gly Ile Leu Phe Pro Ser Ala Cys Phe Asp Asn Arg
      355                    360                    365
Ser Pro Glu Gly Gly Ala Leu Tyr Ser Tyr Phe Leu Gly Gly Thr Arg
      370                    375                    380
His Pro Glu Leu Leu Glu Lys Ser Asp Asp Glu Ile Ile Arg Leu Ile
      385                    390                    395                    400
Thr Thr Gly Leu Asn Glu Met Leu Asp Tyr Pro Ala Gly Ile Val Pro
      405                    410                    415
Asp Leu Ile Arg Ile Phe Arg His Lys Lys Ala Ile Pro Gln Tyr Glu
      420                    425                    430
Ser Ser Ser Thr Asp Arg Phe Ala Ala Ile Asn Glu Leu Gln Lys Gln
      435                    440                    445
Tyr Pro Gly Leu Val Val Ala Gly Asn Leu Lys Gly Gly Ile Gly Met
      450                    455                    460
Ala Asp Arg Ile Lys Gln Ala Val Glu Ile Ala Arg Glu Arg
      465                    470                    475

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<210> 6631

<211> 157

<212> PRT

<213> B.fragilis

<400> 6631

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Gly Thr Ser Ala Ile Pro Thr Asp Leu Thr Val Ser Phe Val Ala Leu
1                      5                      10                      15

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Thr His Val Ile His Thr Ser Lys Ser Glu Asn Gln Arg Leu Lys Met
      20              25              30
Lys Arg Arg Lys Glu Pro Thr Glu Phe Arg Leu Gly Thr Ile Ile Val
      35              40              45
Pro Tyr Ile Glu Met Phe Asp Glu Ala Val Ala Ile Arg Thr Asp Gly
      50              55              60
Val Arg Leu Ile Ile Asp Thr Tyr Phe Asn Asp Leu Ser Ile Asp Asp
      65              70              75              80
Ile Pro Gln Gln Tyr Val Phe Thr Trp Asn Trp Leu Gly Lys Gly Tyr
      85              90              95
Lys Phe Thr Val Ile Asn His Leu Tyr Lys Ser Ser Lys Ala Lys Thr
      100             105             110
Lys Arg Gly Phe Lys Lys Leu Leu Ala Glu Ala Leu Pro Leu Leu Ile
      115             120             125
Asp Pro Lys Asn Gly Leu Ile Lys Lys Pro Glu Leu Ser Pro Ala Asp
      130             135             140
Leu Asn Arg Phe Asn Thr Val Leu Lys Thr Cys Ser Lys
      145             150             155

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<210> 6632
<211> 88
<212> PRT
<213> B.fragilis

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<400> 6632
Glu Leu Phe Tyr Arg Asp Ile Tyr Leu Leu Leu Thr Ser Cys Gln Leu
1              5              10              15
Ile Asn Gln Asn Pro Phe Thr Tyr Glu Leu Leu Val Pro Ile Leu His
      20              25              30
Gln Asp Thr Phe Val Gln Met Val Leu Arg Gly Ile Thr Tyr Leu Pro
      35              40              45
Leu Leu Ile Leu Val Met Val Val Met Asp Gly Leu Leu Cys Ile Ile
      50              55              60
Gly Leu Leu Pro Phe Ala Asp Arg Asn Lys Gly Ile Gly His Glu Tyr
      65              70              75              80
Asp Cys Asn Glu Leu Phe Gly Arg
      85

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<210> 6633
<211> 62
<212> PRT
<213> B.fragilis

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<400> 6633
Asn Leu Leu Tyr Gly Phe Thr Gln Leu Phe Phe Arg Arg Asn Tyr Ile
1              5              10              15
Glu Ile Phe Pro Lys Ala Phe Val Val Tyr Lys Trp Asn Phe Arg Lys
      20              25              30
Asp Gly Met Tyr Gly Gln Pro Leu Ile Met Val Glu Thr Ala Asp Ile
      35              40              45
Ile Arg Phe Tyr Leu Ala Gly Asp His Phe Lys Pro Cys Met
      50              55              60

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<210> 6634
<211> 67
<212> PRT
<213> B.fragilis

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```

<400> 6634

```

6632 88 B.fragilis
 6633 62 B.fragilis
 6634 67 B.fragilis

Asn Tyr Asn Leu Gln Gly Gln Arg Ala Gln Asp Val Glu Ala Val Phe
 1 5 10 15
 Gly Asn Leu Lys Thr Thr Asn Asn Pro Arg Arg Phe Tyr Leu Arg Arg
 20 25 30
 Val Glu Lys Val Asp Ile Glu Phe Gly Leu Leu Ala Ile Ala Tyr Asn
 35 40 45
 Leu Ala Lys Val Ala Ser Ser Thr Thr Phe Cys Ala Pro Lys Asp Ile
 50 55 60
 Leu Lys Gly
 65

<210> 6635

<211> 527

<212> PRT

<213> B.fragilis

<400> 6635

Ser Arg Asn Gln Asn Pro Lys Thr Met Lys Ala Ser Lys Ser Leu Cys
 1 5 10 15
 Leu Gln Cys Leu Phe Thr Cys Leu Leu Phe Ile Ala Ala Arg Val
 20 25 30
 Lys Ala Asp Asp Ser Gly Ile Leu Asp Arg Ile Ile Arg Leu Pro Lys
 35 40 45
 Ser Glu Met Thr Val Tyr Lys Leu Leu Ser Lys Ile Thr Glu Glu Thr
 50 55 60
 Gly Tyr Leu Phe Ile Tyr Asp Ser Lys Leu Val Asp Asn Glu Arg Thr
 65 70 75 80
 Val Lys Leu Lys Gly Gly Lys Gln Thr Val Arg Gln Ala Ile Tyr Ser
 85 90 95
 Ile Ile Gly Asn Asp Asn Leu Lys Leu Arg Ser Val Asp Lys His Ile
 100 105 110
 Ile Ile Tyr Arg Pro Glu Thr Ala Leu Ser Ile Ser Lys Glu Glu Gly
 115 120 125
 Leu Cys Arg Asp Ser Thr Leu Ser Phe Thr Leu Glu Gly Thr Leu Ile
 130 135 140
 Asp Gln Leu Ser Arg Glu Pro Ile Pro Tyr Ala Thr Val Gly Ala Glu
 145 150 155 160
 Gly Ser Ser Ile Gly Ser Val Thr Asn Gln Asn Gly Ser Phe Arg Leu
 165 170 175
 His Leu Pro Asp Ser Leu Arg Asn Gly Arg Ile Arg Phe Ser His Leu
 180 185 190
 Gly Tyr Val Pro Gln Thr Thr Asp Ala Ser Leu Leu Ala Gly Arg Asn
 195 200 205
 Gly Thr Phe Ala Leu Glu Pro Lys Val Ile Pro Leu Gln Glu Val Ile
 210 215 220
 Val Arg Ile Val Asn Pro Val Arg Leu Leu Arg Glu Met Leu Gln Phe
 225 230 235 240
 Arg Lys Lys Asn Tyr Ser Lys Val Pro Val Tyr Leu Thr Ser Phe Tyr
 245 250 255
 Arg Glu Gly Ile Glu Gln Lys Asn Arg Phe Val Ser Leu Thr Glu Gly
 260 265 270
 Ile Phe Lys Ile Tyr Lys Ala Ser Ser Ser Thr Pro Glu Lys Thr Asp
 275 280 285
 Gln Val Lys Leu Leu Lys Met Arg Arg Ile Thr Asn Gln Ala Val Lys
 290 295 300
 Asp Thr Leu Ile Ala Lys Met Lys Ser Gly Ile His Ala Ser Ile Glu
 305 310 315 320
 Leu Asp Leu Ile Lys Ser Leu Pro Asp Phe Leu Leu Pro Asp Ser Lys
 325 330 335

Glu Cys Val Tyr Val Tyr Thr Ser Ser Asp Leu Ala Ile Ile Asp Asn
 340 345 350
 Arg Leu Ala His Val Val Ser Phe Glu Gln Arg Pro Ser Ile Lys Tyr
 355 360 365
 Pro Tyr Tyr Cys Gly Glu Leu Tyr Ile Asp Ser Glu Asn Ser Ala Leu
 370 375 380
 Leu Arg Ala Arg Phe Glu Leu Thr Pro Arg Tyr Ile His Lys Ala Ala
 385 390 395 400
 Asn Met Leu Val Glu Lys Arg Ser Arg Asn Ile Arg Ile Ile Pro Gln
 405 410 415
 Lys Val Val Tyr Thr Val Ser Tyr Lys Pro Trp Lys Gln Thr Tyr Tyr
 420 425 430
 Ile His His Val Arg Gly Asp Leu His Phe Lys Ile Lys Gln Lys Asn
 435 440 445
 Lys Trp Leu Asn Asn Thr Ile Leu His Thr Trp Phe Glu Met Val Thr
 450 455 460
 Cys Lys Ile Glu Thr Asp Asn Val Ser Arg Phe Asp His Asn Glu Arg
 465 470 475 480
 Leu Ser Val His Thr Ile Phe Ala Glu Ile Pro Phe Val Tyr Asp Lys
 485 490 495
 Ser Phe Trp Glu Asp Phe Asn Val Ile Pro Pro Glu Lys Glu Leu Ser
 500 505 510
 Glu Ala Ile Glu Lys Ile Ser Ser Lys Ile Glu Glu Thr Glu Asn
 515 520 525

<210> 6636
 <211> 187
 <212> PRT
 <213> B.fragilis

<400> 6636
 Lys Ile Lys His Leu Ile Thr Met Ile Val Gln Asp Leu Asn Phe Asp
 1 5 10 15
 Gln Thr Val Ala Met Ala Lys Ala Lys Ala Glu Ser Met Ile Gln Asn
 20 25 30
 Gly Leu Tyr Ser Arg Phe Gly Leu Ser Glu Lys Glu Arg Leu Asp Lys
 35 40 45
 Ala Leu Leu Gly Cys Ile Gly Glu Leu Ala Phe Gln Lys His Leu Lys
 50 55 60
 Asn Leu Gly Ile Pro Phe Glu Leu Asp Gln Thr Asp Phe Gln Ser His
 65 70 75 80
 His Ser Asp Glu Phe Asp Val Lys Val Asn Gly Ala Lys Ile Asp Ile
 85 90 95
 Lys Val Ala Lys Lys Thr Thr Ala Asn Pro Pro Thr Asp Asn Trp Thr
 100 105 110
 Tyr Gly Tyr Pro Gln Glu Gln His Pro Glu Thr Lys Asp Tyr Val Val
 115 120 125
 Val Gly Trp Val Asp Phe Asn Arg Lys Glu Val Gly Phe Tyr Gly Trp
 130 135 140
 Ile Arg Gly Lys Gln Ile Val Glu Phe Lys Val Val Thr Gln Asn Ser
 145 150 155 160
 Tyr Ala Lys Tyr Pro Tyr Leu Thr Pro Asn His Glu Phe Lys Trp Gly
 165 170 175
 Cys Leu Thr Lys Asp Leu Asn Glu Ile Leu Lys
 180 185

<210> 6637
 <211> 434
 <212> PRT

<213> B.fragilis

<400> 6637

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Ile Thr Met His Met Phe Lys Lys Leu Leu Ile Leu Leu Leu Ser Leu
1      5      10      15
Leu Asp Cys Ile Pro Val Phe Cys Gly Asp Thr Leu His Tyr Arg
20      25      30
Phe Tyr Phe Arg Val Gly Ala Ser Ser Leu Asp Leu Ser Tyr Arg Asp
35      40      45
Asn Gly Leu Arg Leu Asp Ser Leu Leu Ser Val Ile His Ser Arg Gln
50      55      60
Ala His Ala Val Leu Arg Arg Val Ser Leu Tyr Ser Ser Ala Ser Pro
65      70      75      80
Glu Gly Gly Ser Ala Leu Asn Lys Arg Leu Ser Asp Arg Arg Leu Ala
85      90      95
Ser Leu Arg Thr Val Ile Gln His Arg Leu Ala Ile Pro Asp Ser Ile
100     105     110
Leu Ile Ser Phe Ser Leu Gly Glu Asp Trp Asp Gly Leu Ser Ser Leu
115     120     125
Val Glu Gly Ser Asp Ile Pro Tyr Arg Gly Glu Val Leu Arg Ile Leu
130     135     140
Arg Asp Thr Pro Val Trp Val Ile Arg Asn Gly Ile Val Val Asp Ser
145     150     155     160
Arg Lys Arg Gln Leu Met Asn Leu Arg Gly Gly Arg Val Trp Arg Tyr
165     170     175
Met His Glu His Phe Phe Pro Glu Leu Arg Asn Ser Ser Val Ile Glu
180     185     190
Cys Glu Phe Glu Pro Phe Val Ala Glu Asn Asp Asp Val Pro Ala Pro
195     200     205
Ser Gln Lys Gly Val Cys Pro Pro Asp Thr Val Ile Leu Arg Asp Thr
210     215     220
Val Glu Arg Ala Ile Met Met Arg Asp Thr Val Glu Val Pro Val Pro
225     230     235     240
Ile Ala Asn Ile Pro Lys Pro Phe Tyr Met Gly Leu Lys Thr Asn Leu
245     250     255
Leu Tyr Asp Ala Leu Leu Val Pro Asn Ile Gly Val Glu Phe Tyr Leu
260     265     270
Gly Lys Gly Trp Ser Leu Gly Gly Asn Trp Met Tyr Ala Trp Trp Asn
275     280     285
Asn Asp Arg Arg His Arg Tyr Trp Arg Val Tyr Gly Gly Glu Ile Gly
290     295     300
Leu Arg Lys Tyr Phe Ala Pro Arg Ala Ala Tyr Thr Pro Phe Ile Gly
305     310     315     320
His His Val Gly Leu Tyr Gly Gln Met Leu Thr Tyr Asp Phe Glu Phe
325     330     335
Gly Gly Lys Gly Tyr Met Gly Gly Arg Pro Gly Gly Ser Leu Trp Glu
340     345     350
Lys Ser Asn Tyr Gly Phe Gly Leu Glu Tyr Gly Tyr Ser Leu Ala Ile
355     360     365
Gly Arg Arg Leu Asn Leu Asp Phe Ser Leu Gly Val Gly Tyr Leu Gly
370     375     380
Gly Thr Tyr Tyr Glu Tyr Ala Pro Met Asp Gly His Tyr Val Trp Glu
385     390     395     400
Ala Thr Lys Asn Arg Arg Trp Phe Gly Pro Thr Lys Ala Glu Val Ser
405     410     415
Leu Val Trp Leu Leu Gly Arg Gly Asn Tyr Asn Asp Lys Lys Gly Gly
420     425     430
Arg Arg

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<210> 6638
 <211> 324
 <212> PRT
 <213> B.fragilis

<400> 6638

Arg	His	Met	Gln	Tyr	Val	Gly	Ile	Gln	Thr	Gln	Gln	Ser	Arg	Asn	Asn
1			5					10						15	
Leu	Arg	Ser	Gly	Ile	Leu	Leu	Ile	Leu	Phe	Pro	Cys	Leu	Val	Ala	Val
			20					25					30		
Leu	Thr	Tyr	Leu	Phe	Cys	Tyr	Leu	Leu	Ile	Thr	Phe	Thr	Val	Glu	Asp
		35					40					45			
Asp	Tyr	Gly	Gln	Tyr	Asn	Thr	Leu	Ala	Met	Thr	Asn	Gln	Met	Phe	Ile
	50					55					60				
Asn	Leu	Ile	Pro	Tyr	Ile	Ile	Gly	Gly	Val	Leu	Val	Trp	Phe	Ile	Ile
65					70					75				80	
Ala	Tyr	Phe	Thr	Asn	Ser	Ser	Ile	Ile	Lys	Ala	Ala	Thr	Gly	Ala	Arg
				85					90					95	
Pro	Leu	Glu	Arg	Lys	Glu	Asn	Lys	Arg	Ile	Tyr	Asn	Leu	Val	Glu	Asn
			100					105					110		
Leu	Cys	Met	Ser	Gln	Gly	Met	Lys	Met	Pro	Lys	Ile	Asn	Ile	Ile	Asp
		115					120					125			
Asp	Asp	Ser	Leu	Asn	Ala	Tyr	Ala	Ser	Gly	Ile	Asn	Glu	Gln	Thr	Tyr
	130					135					140				
Thr	Val	Thr	Leu	Ser	Lys	Gly	Ile	Ile	Glu	Lys	Leu	Asn	Asp	Glu	Glu
145					150					155					160
Leu	Glu	Gly	Val	Ile	Ala	His	Glu	Leu	Thr	His	Ile	Arg	Asn	His	Asp
				165						170				175	
Val	Arg	Leu	Leu	Ile	Ile	Ser	Ile	Val	Phe	Val	Gly	Ile	Phe	Ser	Met
			180					185					190		
Leu	Ala	Gln	Ile	Ala	Leu	Arg	Ser	Val	Tyr	Tyr	Ser	Ser	Trp	Thr	Arg
		195					200					205			
Ser	Arg	Asn	Asp	Lys	Asn	Asn	Gly	Ala	Ile	Leu	Ile	Leu	Val	Leu	Ala
	210					215					220				
Met	Ile	Val	Ala	Ala	Ile	Gly	Tyr	Phe	Phe	Ala	Thr	Leu	Met	Arg	Phe
225					230					235					240
Ala	Ile	Ser	Arg	Lys	Arg	Glu	Tyr	Met	Ala	Asp	Ala	Gly	Ala	Ala	Glu
				245					250					255	
Met	Thr	Lys	Asn	Pro	Leu	Ala	Leu	Ala	Ser	Ala	Leu	Arg	Lys	Ile	Ser
		260						265					270		
Ala	Asp	Pro	Asp	Ile	Glu	Ala	Val	Glu	Arg	Glu	Asp	Val	Ala	Gln	Leu
	275						280					285			
Phe	Ile	Gln	His	Pro	Gly	Lys	Gln	Ala	Lys	Ser	Ala	Leu	Ser	Gly	Leu
	290					295				300					
Ser	Gly	Leu	Phe	Ala	Thr	His	Pro	Pro	Ile	Glu	Lys	Arg	Ile	Ala	Ile
305					310					315					320
Leu	Glu	Gln	Phe												

<210> 6639
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6639

Gln	Glu	Gln	Gln	Asn	Leu	Phe	Pro	Glu	Asn	Gln	Gly	Ser	Lys	Gly	Thr
1				5				10						15	
Val	Trp	Leu	Tyr	Leu	Glu	Ser	Lys	Arg	Gly	Ile	Pro	His	Leu	His	Gly

[illegible]

<210> 6640

 $\langle 211 \rangle$ 322

<212> PRT

<213> B.fragilis

<400> 6640

Glu	Arg	Arg	Gln	Thr	Met	Asn	Arg	Ile	Leu	Thr	Thr	Asn	His	Ile	Leu
1				5					10					15	
His	Val	Val	Ser	Val	Phe	Thr	Ile	Leu	Leu	Leu	Thr	Ser	Cys	Glu	His
			20					25					30		
Lys	Asp	Leu	Cys	Tyr	Asp	His	Ser	Asp	Ala	Thr	Glu	Ile	Gln	Val	Val
		35					40					45			
Phe	Asp	Trp	Thr	Asn	Ala	Pro	Asp	Ala	Thr	Pro	Glu	Thr	Met	Arg	Leu
	50					55					60				
Tyr	Leu	Phe	Pro	Val	Gly	Gly	Thr	Pro	His	Thr	Tyr	Glu	Phe	Pro	
65					70				75					80	
Asp	Tyr	Arg	Gly	Gly	Arg	Ile	Asn	Val	Pro	Ala	Gly	Arg	Tyr	Lys	Ala
				85					90					95	
Leu	Cys	Ile	Asn	Ser	Asp	Thr	Glu	Ser	Ile	Leu	Tyr	Arg	Asn	Ile	Asp
			100					105					110		
Ser	Phe	Asp	Ser	Phe	Glu	Ala	Tyr	Ala	Ala	Asp	Gly	Val	Leu	Asn	Val
		115					120					125			
Arg	Ser	Ser	Ser	Ser	Pro	Arg	Ala	Glu	Gly	Thr	Ala	Asp	Glu	Arg	Ile
						135					140				
Ala	Arg	Ser	Pro	Asp	Arg	Phe	Tyr	Ser	Ala	Arg	Leu	Asp	Asp	Val	Thr
145					150					155				160	
Ile	Glu	Leu	Ser	Lys	Glu	Asn	Arg	Thr	Val	Thr	Leu	Tyr	Pro	Glu	Pro
				165					170					175	
Ser	Val	Cys	Arg	Cys	Arg	Val	Thr	Ile	Thr	Asn	Val	Ser	Asn	Leu	Lys
			180					185					190		
Tyr	Ile	Ser	Ser	Asp	Gly	Ile	Ser	Gly	Ala	Leu	Ser	Gly	Met	Cys	Gly
		195					200					205			
Gly	Leu	Leu	Val	Gly	Arg	Asn	Glu	Ala	Thr	Ser	Asp	Pro	Val	Thr	Val
						215					220				
Pro	Phe	Gly	Val	Val	Ser	Asp	Gly	Ala	Ser	Thr	Leu	Thr	Ala	Asp	Phe
225					230					235				240	
Leu	Val	Phe	Gly	Gln	Ile	Gly	Pro	Ser	Gly	Tyr	Pro	Ala	His	Lys	Leu
				245					250					255	
Val	Ile	Tyr	Ala	Ile	Met	Ser	Asp	Gly	Ser	Lys	Asn	Tyr	Tyr	Thr	Phe
			260					265					270		
Asp	Val	Thr	Arg	Gln	Val	Asp	Glu	Ala	Ala	Asp	Ser	His	Asp	Ile	His
		275					280					285			
Ile	Thr	Leu	Asp	Gly	Leu	Pro	Phe	Pro	Lys	Pro	Ile	Val	Asn	Gly	Gly

290 295 300
 Gly Phe His Pro Ala Val Asp Glu Trp Gln Asn Val Asp Val Asp Val
 305 310 315 320
 Ser Met

<210> 6641
 <211> 242
 <212> PRT
 <213> B.fragilis

<400> 6641
 Glu Arg Arg His Glu Met Lys Lys Val Tyr Thr Val Met Glu Tyr Val
 1 5 10 15
 Pro Leu Leu Ala Gly Met Leu Met Leu Leu Ser Ser Cys Gly His Lys
 20 25 30
 Asp Leu Cys Phe Asp His Asp Val His Ala Pro Lys Ser Glu Val Arg
 35 40 45
 Ile Glu Ala Arg Tyr Glu Lys Glu Trp Gln Tyr Thr His Glu Gly Ser
 50 55 60
 Thr Asp Trp Lys Ser His Ser Thr Trp Pro Glu Ser Phe Gly Met Glu
 65 70 75 80
 Tyr Asp Ala Leu Arg Pro Gly Ile Pro Asp Gly Leu Arg Val Gln Val
 85 90 95
 Tyr Asn Ala Asp Gly Ser Asp Glu Ile Ile Asn Thr Ala Pro Glu Gly
 100 105 110
 Asp Val Val Tyr Met Arg Pro Gly Glu His Ser Leu Leu Phe Tyr Asn
 115 120 125
 Asn Tyr Thr Glu Tyr Ile Val Phe His Glu Met Gln Ser Phe Ala Ser
 130 135 140
 Ala Lys Ala Thr Thr Arg Thr Arg Thr Arg Ser Ser Tyr Leu Gly Asn
 145 150 155 160
 Ser Tyr Met Glu Thr Ala Ser Glu Asn Thr Val Asn Gln Pro Asp Met
 165 170 175
 Leu Tyr Arg Ser Tyr Met Glu Ser Tyr Cys Gly Gly Thr Leu Asp Arg
 180 185 190
 Asn Arg Arg Asp Thr Arg His His Ala Pro Asp Gly Val His Leu Ser
 195 200 205
 Gly Thr Leu Arg Val Gln Pro Arg Gly Gly Ile Arg Val Ser Gly Thr
 210 215 220
 Arg Cys Leu Gly Trp Tyr Gly Ala Gly Gly Met Val Glu Gln Arg Thr
 225 230 235 240
 His Val

<210> 6642
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 6642
 Leu Trp Val Asn Phe Ser Val Phe Ile Phe Ala Ala Val Asn Lys Gln
 1 5 10 15
 Thr Thr Lys Pro Asp Leu Arg Asn Thr Val Ser Ile Thr Leu Lys Thr
 20 25 30
 Leu Glu Phe Cys Phe Pro Phe Phe Pro Ile His Ala Gly Thr Thr Thr
 35 40 45
 Phe Gln Lys Glu Ser Ile Trp Val Leu Ser Lys Gln Val Ile Pro Leu
 50 55 60

Ser Val Ala
65

<210> 6643
<211> 216
<212> PRT
<213> B.fragilis

<400> 6643
Cys Phe Pro Asn Arg His Lys Asp Ile Ile Leu Leu Tyr Asp Asp Thr
1 5 10 15
Ser Leu Lys Ile Gly Val Tyr Phe Leu Met Ile Cys Leu Thr Gly His
20 25 30
Gly Thr Lys Lys Ile Gly Arg Arg Asn His Asp Gly Lys Ser Gly Ile
35 40 45
Tyr Phe Leu Ser His Gly Ile Asn Asp Ile Gln Tyr Ile Thr Gly Glu
50 55 60
Ser Arg Asn Lys Lys Gln Glu Thr Arg Asn Lys Lys His Pro Glu Leu
65 70 75 80
Ile Phe His Ile Ile Lys Asp Asn Leu Leu Pro Ser Gly Leu Asp Ala
85 90 95
Thr Gly Ile Trp Asp Phe Met Arg Leu Thr Gln Glu Lys Ser Lys Lys
100 105 110
Val Lys Asn Ser Val Ile His Ile Glu Val Ser Arg Ala Pro Glu His
115 120 125
Thr Lys Asp Phe Thr Ile Asp Asp Trp Arg Arg Leu Trp Asp Asp Phe
130 135 140
Met Gly Glu Phe Asp Asn Ile Glu Leu Leu Asp Lys Asn Ser Lys Thr
145 150 155 160
Tyr Ser Pro Lys Thr Lys Ala Ala Arg Ala Arg Cys Gly Cys Ile Trp
165 170 175
Asn Pro Arg Glu Ala Phe Pro Ile Phe Thr Ala Arg Ser Ala Val Ser
180 185 190
Thr Asn Gly Glu Met Ser Thr Thr Thr Met Thr Tyr Thr Cys Glu His
195 200 205
Ser Gly Gln Pro Gly Val Trp Pro
210 215

<210> 6644
<211> 431
<212> PRT
<213> B.fragilis

<400> 6644
Ser Lys Asp Asn Met His Met Arg Gly Leu Ile Val Ser Ala Phe Leu
1 5 10 15
Leu Leu Gly Cys Ile Gln Ala Phe Gly Gln Glu Asn Arg Lys Glu Val
20 25 30
Cys Ile Gly Phe Pro Val Gly Asn Ser Thr Leu Asp Thr Ala Tyr Gly
35 40 45
Asn Asn Ala Ala Arg Leu Ser Glu Val Val Ser Phe Leu Glu Ser Val
50 55 60
Lys Lys Asp Ser Thr Leu Glu Leu Thr Gly Val Ser Phe Cys Gly Ser
65 70 75 80
Ala Ser Pro Glu Gly Gly Phe Thr Val Asn Arg Met Leu Ala Glu Lys
85 90 95
Arg Arg Asn Ser Leu Glu Arg Tyr Val Arg Glu Arg Val Ser Leu Pro
100 105 110
Asp Gly Ile Ile Ser Arg Pro Glu Gly Phe Ile Ala Trp Glu Arg Leu

115	120	125
Ala Glu Leu Val Glu Val Ser Asp Met Pro His Lys Glu Glu Ala Val		
130	135	140
Asp Val Leu Arg Asn Val Pro Glu Phe Thr Tyr Gly Asn Lys Gly Val		
145	150	155
Leu Val Asp Ser Arg Lys Lys His Leu Met Glu Leu Gln Tyr Gly Arg		
165	170	175
Thr Trp His Tyr Met His Lys His Phe Phe Asp Arg Ile Arg Asn Ala		
180	185	190
Ser Val Ile Leu Val Thr Val Arg Gln Lys Pro Leu Ile Glu Glu Lys		
195	200	205
Thr Val Val Lys Glu Glu Pro Val Val Pro Thr Pro Ala Asp Asp Thr		
210	215	220
Thr Thr Val Val Glu Lys Ala Asp Thr Val Val Ala Val Ser Ser Glu		
225	230	235
Thr Ser Lys Pro Phe Tyr Met Ala Leu Lys Thr Asp Met Leu Tyr Asp		
245	250	255
Val Leu Ala Val Pro Asn Ile Gly Val Glu Phe Tyr Leu Gly Lys Asn		
260	265	270
Trp Ser Ile Ser Gly Asn Trp Met Tyr Gly Trp Trp Lys Lys Asn Ser		
275	280	285
Asn His Arg Tyr Trp Arg Val Tyr Gly Gly Asp Leu Ala Val Arg Tyr		
290	295	300
Trp Leu Gly Lys Lys Ala His Glu Lys Pro Leu Thr Gly His His Ile		
305	310	315
Gly Ile Tyr Gly Gln Ala Phe Thr Tyr Asp Phe Glu Trp Gly Gly Lys		
325	330	335
Gly Tyr Met Gly Gly Glu Pro Gly Gly Met Leu Trp Asp Lys Thr Asn		
340	345	350
Tyr Ala Ala Gly Val Glu Tyr Gly Tyr Ser Leu Pro Ile Ala Asn Arg		
355	360	365
Leu Asn Ile Asp Phe Thr Leu Gly Val Gly Tyr Trp Gly Gly Lys Tyr		
370	375	380
Tyr Glu Tyr Val Pro Leu Asp Ser His Tyr Val Trp Gln Ala Thr Lys		
385	390	395
Asn Arg His Trp Phe Gly Pro Thr Lys Ala Glu Ile Ser Leu Val Trp		
405	410	415
Leu Leu Gly Arg Gly Asn Ser Asn Asn Lys Lys Gly Gly Met Lys		
420	425	430

<210> 6645

<211> 197

<212> PRT

<213> B.fragilis

<400> 6645

Tyr Gln Cys Lys Asn Arg Lys Glu Ile Asn Met Thr Ile Arg Glu Phe	
1	5
Lys Glu His Val Lys Thr Arg Lys Leu Asp Thr Glu Glu Ile His	
20	25
Gln Phe Met Asp Ile Met Ser Asn Glu Ala Arg Arg Ile Thr Phe Gln	
35	40
Leu Asn Thr Thr Tyr His Thr Pro Asn Glu Val Arg Glu Leu Leu Ser	
50	55
Glu Leu Phe Gly Tyr Arg Val Pro Ser Ser Phe Arg Val Phe Pro Pro	
65	70
Phe Tyr Thr Asp Phe Gly Lys Asn Ile Thr Ile Gly Glu Asp Val Phe	
85	90
Ile Asn Ala Cys Cys His Phe Gln Asp His Gly Gly Ile Thr Ile Gly	


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      100      105      110
Asp Gly Cys Gln Ile Gly His Asn Val Val Phe Ala Thr Leu Asn His
      115      120      125
Gly Leu Leu Pro Glu Glu Arg Lys Ser Thr Gln Pro Ala Pro Ile Val
      130      135      140
Leu Gly Lys Asn Val Trp Val Gly Ser Asn Ala Thr Ile Leu Gln Gly
      145      150      155      160
Val Ser Ile Gly Asn Asn Ala Ile Val Ala Ala Gly Ala Val Val Thr
      165      170      175
Lys Asp Val Pro Ser Asp Thr Val Val Gly Gly Val Pro Ala Lys Phe
      180      185      190
Ile Lys Thr Ile Arg
      195

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<210> 6646
 <211> 88
 <212> PRT
 <213> B.fragilis

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<400> 6646
Ile Lys Asn Lys Lys Ile Asn Gly Met Asn Met Asn Lys Lys Met Tyr
1      5      10      15
Ile Leu Pro Gly Asp Glu Arg Ile Ala Ala Ser Asp Ala Lys Glu Phe
      20      25      30
Val His Glu Leu Arg Thr Gly Ser Trp Met Asp Ser Asn Cys Thr Asp
      35      40      45
Glu Gln Tyr Met Cys Asn Phe Ala Glu Arg Tyr Val Ile Gln Ala Gly
      50      55      60
Val Arg Ile Ala Thr Asp Thr Pro Glu Asn Phe Leu Ala Asp Leu Ile
      65      70      75      80
Arg Thr Gly Tyr Ala Lys Glu Met
      85

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<210> 6647
 <211> 690
 <212> PRT
 <213> B.fragilis

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<400> 6647
Asn Met Ile Lys Arg Leu Phe Phe Leu Leu Pro Phe Ser Thr Ile Val
1      5      10      15
Ser Ala Asn Glu Pro Asp Thr Ile Gln Val Lys Arg Ile Asp Leu Asp
      20      25      30
Glu Val Thr Ile Val Ala Phe Lys Gln Asn Thr Pro Asn Arg Glu Pro
      35      40      45
Leu Ser Ile Ser Thr Leu Asp Asn Arg Phe Leu Lys Glu Asn Glu Ile
      50      55      60
Ser Gly Ala Lys Asp Leu Ser Ser Leu Leu Pro Asn Phe Tyr Met Pro
      65      70      75      80
Asp Tyr Gly Ser Lys Gln Asn Ser Pro Val Tyr Ile Arg Gly Ile Gly
      85      90      95
Ala Lys Lys Asp Ala Pro Ser Val Gly Phe Tyr Val Asp Gly Ile Pro
      100      105      110
Tyr Phe Glu Thr Ser Ala Phe Asp Ile Asp Leu Ser Asp Ile Ser Ser
      115      120      125
Ile Glu Val Leu Arg Gly Pro Gln Gly Thr Leu Tyr Gly Arg Asn Ser
      130      135      140
Ile Gly Gly Thr Ile Asn Val Tyr Thr His Ser Pro Leu Asp Tyr Gln
      145      150      155      160

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Gly Thr Tyr Phe Arg Leu Gly Tyr Gly Ser Tyr Asn Asp Met Arg Leu
 165 170 175
 Ile Ala Ser Asn Tyr Thr Lys Val Asn Glu Gln Leu Gly Leu Ser Phe
 180 185 190
 Ser Gly Asn Tyr His His Asn Asp Gly Phe Phe Thr Asn Leu His Thr
 195 200 205
 His Lys Lys Ala Asp Lys Leu Asp Asn Gly Ala Gly Arg Ile Gly Leu
 210 215 220
 Thr Trp Lys Pro Ala Ala His Trp Thr Thr Arg Phe Ile Thr Ser Tyr
 225 230 235 240
 Glu Tyr Ser Asn Gln Gly Gly Tyr Pro Tyr Gly Leu Tyr Asn Ala Asp
 245 250 255
 Lys Gly Thr Thr Glu Ala Val Asn Tyr Asn Asn Glu Gly Leu Tyr Arg
 260 265 270
 Arg Asn Leu Leu Thr Ser Gly Ile Asn Ile Arg Tyr Asn Gly Pro His
 275 280 285
 Ile Ser Phe Asn Ser Gln Thr Ser Tyr Gln Tyr Ile Gln Asp Lys Met
 290 295 300
 Gly Ile Asp Gln Asp Phe Ser Pro Arg Asn Ile Phe Tyr Gly Gln Asn
 305 310 315 320
 Lys Ile Arg Gln His Met Tyr Cys Gln Glu Phe Thr Ile Lys Ser Val
 325 330 335
 Asn Lys Ser Arg Tyr His Trp Ile Thr Gly Ala Phe Val Phe Arg Gln
 340 345 350
 Thr Ile Asn Arg Lys Val Asp Leu Ser Arg Phe Thr Asp Thr Thr Arg
 355 360 365
 His Leu Thr Asn Ser Gly Ile Pro Thr Gln Gly Ile Ala Phe Tyr His
 370 375 380
 Gln Ser Thr Leu Asp Leu Leu Gln Gly Leu Ser Cys Ser Val Gly Leu
 385 390 395 400
 Arg Tyr Asp Tyr Glu His Ala Arg Cys Asp Phe Ser Lys Val Gln Gln
 405 410 415
 Pro Leu Asn Gly Asn Gly Glu Thr Lys Ser Leu Glu Gln Phe Asn Arg
 420 425 430
 Ser Leu His Phe Gly Gln Phe Thr Pro Arg Phe Ser Met Gln Tyr Leu
 435 440 445
 Ser Ser His Asn Gln Leu Phe Tyr Ala Ser Val Ser Lys Gly Tyr Lys
 450 455 460
 Ala Gly Gly Phe Asn Val Ser Phe Leu Asn Asn Asp Asp Tyr Leu Tyr
 465 470 475 480
 Ser Pro Glu Tyr Asn Trp Asn Tyr Glu Ile Gly Thr Lys Leu Ser Phe
 485 490 495
 Leu Asn Asn Arg Leu Ser Ala Asp Leu Ser Leu Phe Tyr Ile Asp Trp
 500 505 510
 Arg Asn Gln Gln Ile Thr Asn Thr Ile Pro Thr Val Gly Asn Val Ile
 515 520 525
 Arg Asn Ala Gly Arg Ser Arg Asn Lys Gly Ile Glu Ala Ser Phe Gln
 530 535 540
 Ala Arg Pro Thr Lys Ser Trp Met Met Tyr Met Asn Tyr Gly Tyr Thr
 545 550 555 560
 Asp Ala Arg Phe Val His Tyr Gln Lys Glu Glu Arg Gly Ile Leu Lys
 565 570 575
 Asp Tyr Glu Gly Asn Tyr Leu Pro Met Val Pro Arg His Thr Phe Ser
 580 585 590
 Leu Thr Thr Gly Tyr Ser Phe Tyr Asp Ile Cys Ser Trp Ile Asp Arg
 595 600 605
 Leu Thr Leu Asn Ala Gly Val Ser Val Thr Gly Pro Ile Tyr Trp Tyr
 610 615 620
 Glu Asp Asn His Pro Ser Gln Ser Pro Tyr Ala Leu Val Asn Leu Arg

625		630		635		640
Ile Ser Ile Asn Lys Gly Cys Phe Thr Trp Glu Ala Trp Ser Lys Asn						
		645		650		655
Leu Thr Asn Thr Asp Tyr Leu Ser Tyr Tyr Phe Val Thr Ser Lys Ala						
		660		665		670
Tyr Ala Gln Lys Gly Lys Pro Ile Thr Leu Gly Thr Ser Val Ser Ile						
		675		680		685
Ser Leu						
690						

<210> 6648
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 6648	
Tyr Pro Thr Asn Thr Tyr Ile Tyr Ile Lys Lys Asn Thr Ile Tyr Met	
1	15
Tyr Gln Thr Ile Ser Glu Tyr Glu Ser Leu Gln Pro Val Thr Tyr Gln	
20	30
Ile Asp Thr Asn Arg Phe Glu Lys Asn Gln Ile Lys Asp Ser Ala Lys	
35	45
Glu Gln Tyr Lys Ser Val Thr Asn Leu Tyr Leu Pro Arg Asn Asp Lys	
50	60
Asn Cys Ile Cys Thr Ser Val Pro Asn Val Asn Thr Gln Glu Ala Lys	
65	80
Pro Gly Arg	

<210> 6649
 <211> 231
 <212> PRT
 <213> B.fragilis

<400> 6649	
Leu Tyr Lys Lys Ser Leu Ile Met Lys Lys Ile Lys Phe Met Ala Leu	
1	15
Phe Leu Ser Met Ala Leu Val Phe Gly Ser Cys Gly Ser Met Asn Asn	
20	30
Thr Ala Lys Gly Gly Val Ile Gly Gly Gly Ser Gly Ala Ala Leu Gly	
35	45
Ala Ile Ile Gly Gly Ile Ala Gly Lys Gly Lys Gly Ala Ala Ile Gly	
50	60
Ala Ala Val Gly Thr Ala Val Gly Ala Gly Ala Gly Val Leu Ile Gly	
65	80
Arg Lys Met Asp Lys Lys Ala Ala Glu Ala Ala Lys Ile Lys Asp Ala	
85	95
Gln Val Glu Gln Val Thr Asp Asn Asn Gly Leu Ala Ala Val Lys Val	
100	110
Thr Phe Pro Ser Gly Ile Leu Phe Ala Phe Asn Ser Ser Ala Leu Ser	
115	125
Ala Ala Ser Lys Gln Ser Leu Ala Glu Phe Ala Asn Ile Leu Lys Glu	
130	140
Asp Pro Thr Val Asp Val Ala Ile Ile Gly His Thr Asp Lys Val Gly	
145	160
Ser Tyr Glu Ala Asn Gln Lys Val Ser Ala Asn Arg Ala Tyr Ala Val	
165	175
Glu Asn Tyr Leu Gln Ala Cys Gly Val Lys Pro Tyr Gln Phe Lys Lys	
180	190

Val	Glu	Gly	Val	Gly	Tyr	Ser	Gln	Tyr	Asn	Glu	Ser	Glu	Thr	Pro	Glu
	195						200					205			
Gln	Asn	Arg	Arg	Val	Glu	Ile	Phe	Met	Tyr	Ala	Ser	Glu	Gln	Met	Ile
	210					215					220				
Lys	Asn	Ala	Glu	Ala	Gly	Lys									
225					230										

<210> 6650

<211> 424

<212> PRT

<213> B.fragilis

<400> 6650

Thr	Leu	Lys	Lys	Met	Lys	Thr	Gln	Trp	Ile	Arg	Ser	Ile	Gly	Cys	Ile
1				5					10					15	
Leu	Ala	Val	Leu	Ile	Leu	Ser	Gly	Ile	Met	Pro	Leu	Ala	Ala	Gln	Asp
			20					25					30		
Asn	Ala	Glu	Arg	Tyr	Thr	Thr	Ile	Ser	Gly	Val	Val	Lys	Asp	Lys	Leu
		35					40					45			
Asn	Lys	Lys	Lys	Leu	Glu	Tyr	Val	Asn	Val	Ser	Ile	Pro	Gly	Ser	Ser
	50					55					60				
Val	Gly	Thr	Val	Thr	Asn	Ala	Asp	Gly	Glu	Phe	Thr	Leu	Lys	Ile	Pro
65					70					75					80
Glu	Ser	Val	Gln	Ala	Lys	Asp	Ile	Glu	Ala	Ser	His	Val	Gly	Tyr	Leu
				85					90					95	
Asn	Ser	Arg	Ile	Pro	Leu	Lys	Glu	Glu	Asn	Pro	Thr	Glu	Arg	Ile	Val
			100					105						110	
Trp	Leu	Thr	Pro	Tyr	Ala	Asn	Leu	Leu	Ser	Glu	Ile	Leu	Val	Arg	Ala
		115					120						125		
Arg	Asp	Pro	Arg	Ser	Ile	Val	Glu	Glu	Ala	Leu	Arg	Lys	Ile	Pro	Ala
	130					135						140			
Asn	Tyr	Ser	Pro	Gln	Ser	Asn	Met	Leu	Thr	Gly	Phe	Tyr	Arg	Glu	Leu
	145				150					155					160
Ala	Gln	Lys	Gly	Arg	Arg	Tyr	Ile	Asn	Ile	Ser	Glu	Ala	Val	Ile	Asp
				165					170					175	
Ile	Tyr	Lys	Thr	Pro	Tyr	Asn	Glu	Thr	Ala	Glu	His	Asp	Arg	Val	Gln
			180					185					190		
Ile	Tyr	Arg	Gly	Arg	Arg	Leu	Leu	Ser	Gln	Lys	Gln	Ser	Asp	Thr	Leu
	195						200						205		
Ala	Val	Lys	Leu	Leu	Gly	Gly	Pro	Asn	Met	Ala	Ile	Tyr	Met	Asp	Ile
	210					215						220			
Val	Lys	Asn	Pro	Asp	Cys	Leu	Leu	Ala	Gln	Glu	Asp	Leu	Leu	Phe	Tyr
	225				230					235					240
Glu	Phe	Arg	Met	Glu	Asp	Pro	Thr	Ser	Ile	Asp	Asp	Arg	Ser	Gln	Tyr
				245					250					255	
Val	Ile	Ser	Phe	Arg	Pro	Arg	Val	Lys	Leu	Ser	Tyr	Pro	Leu	Cys	Tyr
			260					265					270		
Gly	Thr	Leu	Tyr	Ile	Asp	Lys	Glu	Arg	Leu	Ser	Phe	Thr	Arg	Ala	Glu
		275					280						285		
Phe	Asn	Leu	Ser	Met	Asp	Asp	Lys	Asn	Lys	Ala	Thr	Gln	Ala	Ile	Leu
	290					295					300				
Arg	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Phe	Lys	Pro	Val	Glu	Val	Ser	Tyr
	305				310					315					320
Leu	Ile	Ser	Tyr	Lys	Asn	Leu	Glu	Gly	Ile	Thr	Tyr	Leu	Ser	Tyr	Ile
				325					330					335	
Arg	Asn	Asn	Ile	Arg	Phe	Lys	Cys	Asp	Trp	Lys	Arg	Lys	Leu	Phe	Ser
			340					345					350		
Thr	Asn	Tyr	Thr	Ile	Leu	Ser	Glu	Met	Val	Val	Thr	Asp	Arg	Lys	Glu
	355						360						365		

Asn Asn Ile Thr Ala Ile Pro Tyr Lys Ala Ala Phe Lys Gln Asn His
 370 375 380
 Val Phe Ser Asp Lys Val Asp Asn Phe Thr Ser Asp Asn Phe Trp Gly
 385 390 395 400
 Gly Tyr Asn Ile Ile Glu Pro Thr Glu Ser Leu Glu His Ala Val Asn
 405 410 415
 Lys Leu Lys Lys Gln Gln Lys Gln
 420

<210> 6651

<211> 316

<212> PRT

<213> B.fragilis

<400> 6651

Gln Val Met Asn Glu Thr Ile Arg Arg Ile Leu Ala Glu Ser Gly Thr
 1 5 10 15
 Lys Thr Ser Lys Ile Arg Lys Leu Leu Leu Thr Gly Leu Ser His Arg
 20 25 30
 Glu Ile Ala Asp Leu Val Thr Arg Gly Asn Arg Gly Phe Val Trp Asn
 35 40 45
 Val Tyr Lys Arg Met Arg Asp Glu Gly Leu Leu Pro Ala Ser Gln Thr
 50 55 60
 Ala Thr Val Leu Arg Pro Glu Pro Asp Tyr Thr Phe Asn Arg Cys Phe
 65 70 75 80
 Gly Val Glu Ile Glu Ala Tyr Asn Cys Pro Arg Gln Thr Leu Thr Asp
 85 90 95
 Ala Leu Arg Glu Thr Gly Ile Pro Val Glu Ile Gly Ser Arg Asn Ala
 100 105 110
 Glu Thr Asn Ser Asn Trp Lys Leu Thr Thr Asp Gly Ser Leu Glu Gly
 115 120 125
 Ser His Thr Phe Glu Leu Val Ser Pro Ile Leu Cys Gly Glu Gln Gly
 130 135 140
 Leu Glu Val Leu Glu Arg Val Cys Trp Val Leu Asp Ala Tyr Asn Val
 145 150 155 160
 Lys Ile Asn Ser Ser Cys Gly Val His Val His Phe Asn Ala Gly Asp
 165 170 175
 Phe Asn Leu Thr Thr Trp Gln Asn Leu Ile Leu Ser Tyr Lys His Ala
 180 185 190
 Glu Thr Glu Ile Asp Lys Phe Met Pro Ala Ser Arg Arg Gly Asn Arg
 195 200 205
 Asn Thr Tyr Cys Arg Ser Leu Arg Ala Phe Ser Asp Glu Asp Ile Arg
 210 215 220
 Ser Ala Glu Ser Ile Glu Ser Leu Gln Arg Leu Phe Gly Ser Arg Tyr
 225 230 235 240
 Met Lys Val Asn Leu Glu Ala Tyr Ser Arg His Arg Thr Val Glu Phe
 245 250 255
 Arg Gln His Ser Gly Thr Ile Asn Phe Thr Lys Ile Glu Asn Trp Val
 260 265 270
 Arg Phe Leu Gly Arg Leu Ile Ile Phe Ala Ser Thr Ser Ser Leu Pro
 275 280 285
 Ala Gly Ile Arg Leu Glu Asp Phe Pro Phe Leu Glu Glu Lys Gln Lys
 290 295 300
 Leu Tyr Tyr Lys Leu Arg Thr Lys Lys Leu Met Glu
 305 310 315

<210> 6652

<211> 401

<212> PRT

<213> B.fragilis

<400> 6652

Asn Asn Met Asn Phe Asn Glu Ile Lys Asn Arg Leu Leu Ile Gly Ala
 1 5 10 15
 Leu Ala Ile Thr Val Phe Pro Phe Tyr Val His Ala Gln Asn Asp Lys
 20 25 30
 Met Glu Gly Gln Thr Ala His Arg Thr Lys Ala Trp Glu Ile Gly Val
 35 40 45
 Gly Gly Ala Leu Ile Asn Trp Asp Arg Val Thr Phe Ser Asn Phe Arg
 50 55 60
 Gln Val Asp Gly Asn Tyr Leu Tyr Arg Met Asn Ile Asp His Leu Phe
 65 70 75 80
 Gly Gly Ile Gln Leu Tyr Ala Ala Arg Glu Leu Asn Pro Trp Phe Tyr
 85 90 95
 Leu Asp Leu Gln Gly Thr Leu Gly Leu Ala Arg Lys Gln Val Glu Thr
 100 105 110
 Gly Gly Arg Lys Phe Asp Phe Met Tyr Met Ala Gly Pro Gly Leu Gln
 115 120 125
 Phe Arg Leu Thr Pro Leu Phe Lys Ser Lys Tyr Val Glu Pro Tyr Leu
 130 135 140
 Arg Val Gly Val Asn Tyr Leu His His Asp Phe Tyr Ala Ile Asn Ala
 145 150 155 160
 Gly Lys Phe Glu Asn Asp Pro Ile Gly Glu Ala Glu Trp Thr Ser Ser
 165 170 175
 Asn Pro Trp Asn Lys Glu Lys Ile Gly Ser Lys Gln Ser Tyr Phe Pro
 180 185 190
 Leu Ser Phe Gly Ala Gly Val Gln Ala Trp Leu Asn Asp His Trp Gly
 195 200 205
 Val Gly Leu Gln Gly Glu Tyr Ile Met Pro Val Asp Lys Lys Gln Thr
 210 215 220
 Arg Phe Val Gln Ala Ser Met Arg Ile Met Phe Arg Leu Gly Gly Ser
 225 230 235 240
 Thr Lys Arg Pro Met Pro Val Val Gln Tyr Ile Asp Arg Pro Val Asp
 245 250 255
 Arg Ile Val Glu Arg Ile Val Glu Lys Arg Ile Glu Val Pro Ala Val
 260 265 270
 Val Glu Ser His Val Cys Asp Leu Phe Asp Asn Ile His Phe Ala Phe
 275 280 285
 Asp Lys Asp Val Ile Thr Ser Glu Ser Glu Ile Thr Leu Asp Lys Ile
 290 295 300
 Ala Asp Leu Leu Lys Ser Tyr Pro Asp Asn Asn Phe Leu Ile Thr Gly
 305 310 315 320
 Tyr Thr Asp Ala Arg Gly Ser Asp Asn Tyr Asn Ile Asp Leu Ser Lys
 325 330 335
 Arg Arg Ala Lys Ala Val Tyr Ser Ala Leu Leu Lys Arg Gln Val Pro
 340 345 350
 Gln His Met Leu Lys Trp Arg Gly Val Gly Tyr His Ala Ser Ser Val
 355 360 365
 Pro Ala Ser Gly Pro Asp Lys Val Arg Met Gly Asp Arg Lys Val Ser
 370 375 380
 Ile Glu Arg Val Thr Asn Ser Asp Tyr Trp Gly Trp Leu Thr Asn Glu
 385 390 395 400
 Glu

<210> 6653

<211> 301

<212> PRT

<213> B.fragilis

<400> 6653

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Lys Asn Met Lys Thr Thr Gln Arg Thr Ala Gly Trp Tyr His Val Met
1      5      10      15
Ala Ala Val Thr Val Met Ile Trp Gly Thr Thr Phe Val Ala Thr Lys
20      25      30
Val Leu Ile Lys Tyr Gly Leu Ser Pro Val Asp Ile Leu Phe Tyr Arg
35      40      45
Phe Leu Leu Ala Tyr Ile Cys Ile Trp Phe Phe Ser Pro Arg Val Leu
50      55      60
Leu Ala Lys Ser Trp Gln Asp Glu Leu Arg Phe Val Gly Leu Gly Leu
65      70      75      80
Cys Gly Gly Ser Leu Tyr Phe Val Ala Glu Asn Thr Ala Leu Gly Met
85      90      95
Thr Leu Ala Ser Asn Val Ser Leu Ile Ile Cys Thr Thr Pro Ile Leu
100     105     110
Thr Ala Leu Leu Ala Pro Phe Phe Tyr Lys Gly Asp Lys Leu Lys Ala
115     120     125
Arg Leu Ile Gly Gly Ser Leu Met Ala Leu Ile Gly Val Gly Leu Val
130     135     140
Val Phe Asn Gly Ser Phe Ile Leu Gln Leu Ser Pro Ala Gly Asp Ile
145     150     155     160
Leu Thr Leu Ile Ala Ala Leu Met Trp Ala Phe Tyr Cys Leu Leu Leu
165     170     175
Arg Arg Met Asn Thr His Tyr Pro Thr Leu Phe Ile Thr Arg Lys Val
180     185     190
Phe Phe Tyr Gly Leu Val Thr Leu Leu Pro Leu Phe Leu Val Tyr Pro
195     200     205
Leu Gln Thr Asp Ile His Ile Leu Phe Arg Pro Val Val Ala Leu Asn
210     215     220
Leu Leu Phe Leu Gly Val Ile Ala Ser Met Leu Cys Tyr Ile Met Trp
225     230     235     240
Asn Thr Ala Val Lys Gln Leu Gly Val Val Cys Ala Thr Ser Tyr Ile
245     250     255
Tyr Val Val Pro Leu Ile Thr Leu Leu Thr Ser Ala Ile Val Ile Asp
260     265     270
Glu Thr Ile Thr Ile Val Ala Leu Leu Gly Ser Ala Leu Ile Leu Ser
275     280     285
Gly Val Tyr Ile Ala Glu Arg Gly Val Asn Leu Lys Lys
290     295     300

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<210> 6654

<211> 77

<212> PRT

<213> B.fragilis

<400> 6654

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Leu Thr Met Asn Lys Val Val Tyr Val His Leu Val Phe Glu Lys Lys
1      5      10      15
Asp Tyr Phe Phe Gly Ser Ile Ala Ala Ile Tyr Asp Tyr Leu Ser Ala
20      25      30
Asp Gln Ile Gly Ala Gly Tyr Asn Thr Leu Arg Asn Val Arg Trp Lys
35      40      45
Glu Thr Ser Val Tyr Val Thr Pro Lys Ala Ile Ile Lys Ile Gly Lys
50      55      60
Leu Leu Arg Ala Gly Ser Cys Lys Lys Gln Pro Ile Lys
65      70      75

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<210> 6655
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 6655

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Ser Val Thr Lys Met Asn Thr Asn Lys Glu Phe Leu Thr Lys Met Ile
1          5          10          15
Arg Val Ser Pro Ser Val Lys Lys Arg Met Glu Ile Phe Gln Gly Gly
          20          25          30
Asp Ser Ala Asn Ser Cys Ile Asp Arg Met Ile Thr Phe Phe Glu Ile
          35          40          45
Thr Gly Phe Asn Pro Arg Tyr Ala Ser Arg Asn Pro Thr Ala Leu Val
          50          55          60
Glu Lys Arg Ile Glu Asp Val Val Arg Ile Ile Lys Ser Gln Glu Arg
65          70          75          80
Asp Ile Leu Lys Pro Val Leu Glu Lys Leu Ser Ala Ile Asn Asn Thr
          85          90          95
Pro Gln Glu Ser Pro Asp Tyr Ala Arg Leu Met Asn Glu Leu Arg Asp
          100         105         110
Leu Lys Asp Glu Asn Arg Lys Leu Lys Glu Arg Leu Gln Ala Asp Asp
          115         120         125
Leu His Thr Gln Asp Ala Ala Val Tyr Gln Asp Lys Leu Lys Arg Leu
130         135         140
Gly Gly Leu Leu Lys Tyr Gln Leu Asp Pro Glu Lys Phe Pro Arg Ile
145         150         155         160
Lys Tyr Ser Asp Asp Val Arg Val Pro Val Asn Thr Leu Gln Leu Leu
          165         170         175
Ile Lys Lys Ile Asn Glu Glu Tyr Val Leu
          180         185

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<210> 6656
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 6656

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Arg Lys Thr Lys Pro Gly Lys Lys Lys Arg Gly Ala Ser Thr Ile Ser
1          5          10          15
Gln Gln Thr Ala Lys Asn Val Phe Leu Trp Pro Gln Ser Ser Trp Ile
          20          25          30
Arg Lys Gly Phe Glu Val Tyr Phe Thr Phe Leu Ile Glu Thr Cys Trp
          35          40          45
Ser Lys Glu Arg Ile Met Glu Val Tyr Leu Asn Ser Ile Glu Met Gly
          50          55          60
Lys Gly Ile Tyr Gly Ala Gln Ala Thr Ala Lys Tyr Lys Phe Lys Thr
65          70          75          80
Thr Ala Ala Lys Leu Thr Arg Gly Gln Cys Ala Leu Ile Ala Ala Thr
          85          90          95
Leu Pro Asn Pro Ile Arg Phe Asp Ser Ala His Pro Ser Pro Tyr Ile
          100         105         110
Lys Arg Arg Gln Gly Gln Ile Leu Arg Leu Met Asn Leu Val Pro Lys
          115         120         125
Phe Pro Pro Val Asp Lys Glu Lys Ala Lys Gly Gln Asp Thr Lys Lys
          130         135         140
Gln Lys Asn Lys Lys Lys Lys
145          150

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<210> 6657

<211> 204
 <212> PRT
 <213> B.fragilis

<400> 6657

```

Leu Ile Lys Asn Thr Ile Asp Ser Pro Asn Asn Asp Arg Ser Ile Met
1           5           10           15
Tyr Lys Ile Ile Phe Val Phe Leu Ala Ile Met Gly Ile Ala Thr Ala
           20           25           30
Ser Cys Ala Gln Gln Lys Gln Gly Ala Asn Arg Lys Gln Pro Asn Asn
           35           40           45
Lys Val Leu Ile Ala Tyr Phe Ser Ala Thr Gly Thr Thr Ala Gly Ala
           50           55           60
Ala Glu Lys Leu Ser Lys Val Thr Gly Gly Glu Leu Tyr Glu Ile Thr
65           70           75           80
Pro Ala Gln Pro Tyr Thr Asn Ala Asp Leu Asn Trp Asn Asn Lys Gln
           85           90           95
Ser Arg Ser Ser Leu Glu Met Asn Asp Pro Lys Ser Arg Pro Ala Ile
           100          105          110
Arg Lys Ser Ser Ile Asp Ile Ala Asp Tyr Asp Val Ile Phe Val Gly
           115          120          125
Tyr Pro Ile Trp Trp Asn Leu Ala Pro Arg Ile Ile Asn Thr Phe Ile
           130          135          140
Glu Ser Tyr His Leu Lys Asn Lys Thr Ile Ile Leu Phe Ala Thr Ser
145          150          155          160
Gly Ser Ser Ser Ile Thr Asn Ser Met Ala Thr Leu Lys Lys Ser Tyr
           165          170          175
Pro Glu Leu Ile Trp Lys Glu Gly Lys Leu Leu Asn Gly Met Asn Glu
           180          185          190
Asn Asp Ile Arg Glu Trp Ile Ser Lys Leu Asp Tyr
           195          200

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<210> 6658
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 6658

```

Leu Ser Trp Asn Asn Ser Asn Ser Ala Trp Pro Leu Leu Tyr Lys Lys
1           5           10           15
Glu His Gln Arg Pro Ile Thr Ala Lys Tyr Thr Gly Leu His Cys Ile
           20           25           30
Lys Ser Lys Gln Pro Thr Ile Tyr Lys Asn Glu Leu Tyr Lys Ser Val
           35           40           45
Gln Ser Ile Val Lys Lys Ser Phe Glu Thr Leu Ser Phe Ile Leu Cys
50           55           60
Glu Ile Cys Ser Asp Lys His Glu Ile Ile Leu Asn His Leu Tyr Ala
65           70           75           80
Leu Tyr Ile Leu Ser Leu Pro Ile Val Ile Phe Met
           85           90

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<210> 6659
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 6659

```

Ile Pro Asn Leu Leu Gly Val Gly Met Gly Phe Ile Gln Val Tyr Asn
1           5           10           15

```

Gly Asn Leu Lys Tyr Val Ala Thr Lys Asp Arg Lys Glu Val Asn Met
 20 25 30
 Ala Gly Lys Asn Ile His Val Val His Asn Gly Asp Gln Trp Lys Val
 35 40 45
 Lys Gln Glu Asn Ala Gln Arg Ser Ser Gly Asn Phe Arg Thr Gln Gln
 50 55 60
 Glu Ala Phe Glu Arg Ala Arg Glu Ile Ala Ile Lys Asn Gly Gln Glu
 65 70 75 80
 Val Ala Ile His Gly Leu Asp Gly Arg Ile Arg Glu Lys His Ser Tyr
 85 90 95
 Gly Asn Asp Pro Tyr Pro Pro Glu Gly
 100 105

<210> 6660
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 6660
 Ile Glu Thr Glu Ser His Thr Phe Gly Ser Ser Leu Ile Thr Leu Arg
 1 5 10 15
 Ile Lys Arg Ile Met Asn Leu Leu Ile Ile Leu Gly Ile Ile Ile Ile
 20 25 30
 Leu Val Ile Ile Ile Ala Ser Met Tyr Asn Ser Leu Val Lys Leu Arg
 35 40 45
 Asn Asn Arg Glu Asn Ala Phe Ala Asp Ile Asp Val Gln Leu Lys Gln
 50 55 60
 Arg His Asp Leu Ile Pro Gln Leu Val Asp Thr Val Lys Gly Tyr Ala
 65 70 75 80
 Ala His Glu Lys Glu Thr Leu Glu Arg Val Ile Gln Ala Arg Asn Gly
 85 90 95
 Ala Val Ser Ala Arg Thr Ile Asp Glu Lys Ile Thr Ala Glu Asn Gln
 100 105 110
 Leu Ser Ser Ala Leu Ala Gly Leu Lys Ile Thr Leu Glu Ala Tyr Pro
 115 120 125
 Asp Leu Lys Ala Asn Gln Asn Phe Leu Gln Leu Gln Glu Ile Ser
 130 135 140
 Asp Val Glu Asn Lys Leu Ala Ala Val Arg Arg Tyr Phe Asn Ser Ala
 145 150 155 160
 Thr Lys Glu Leu Asn Asn Ala Val Gln Thr Phe Pro Ser Asn Leu Ile
 165 170 175
 Ala Asn Met Phe Gly Phe His Lys Glu Met Met Phe Asp Leu Gly Thr
 180 185 190
 Glu Gln Arg Ala Asn Leu Glu Glu Ala Pro Lys Ile Lys Phe
 195 200 205

<210> 6661
 <211> 436
 <212> PRT
 <213> B.fragilis

<400> 6661
 Val Arg Ala Glu Ser Gly Ser Thr Leu Glu Glu Arg Lys Asn Gln Val
 1 5 10 15
 Val Arg Phe Arg Arg Asp Arg Pro Gly Gly Gly Ala Thr Ala Gly Arg
 20 25 30
 Cys His Arg Gly Glu Gly His Arg Asp Phe Arg Arg Arg Gly Tyr Gly
 35 40 45
 Arg Arg Leu Arg Leu Arg Arg Gly Cys Gly Arg Leu Gly Arg Leu Arg

50 55 60
 Gly His Arg Thr Ser Ser Leu Ile Cys Ile Glu Ser Tyr Gln Asn Ile
 65 70 75 80
 Phe Ile His Asn Leu Ile Phe Asn Gln Met Lys Lys Ile Phe Leu Ile
 85 90 95
 Gly Leu Ala Ala Thr Ala Met Leu Ala Ser Cys Ser Asn Asp Glu Thr
 100 105 110
 Val Glu Met Ala Gln Ser Lys Ala Ile Gly Phe Ser Asn Ala Phe Val
 115 120 125
 Asn Asn Gly Thr Arg Ser Ile Val Asp Pro Ser Phe Thr Ser Thr Ser
 130 135 140
 Leu Glu Asp Phe Ala Val Tyr Gly Phe Thr Arg Ala Gly Gln Ile Phe
 145 150 155 160
 Lys Gly Asp Lys Val Tyr Lys Glu Ser Leu Glu Ser Thr Pro Gln Trp
 165 170 175
 Ser Tyr Asp Val Leu Gln Tyr Trp Val Pro Asp Asn Thr Tyr Thr Phe
 180 185 190
 Gly Ala Ile Ala Pro Tyr Ser Val Ala Thr Asn Val Phe Asp Val Ala
 195 200 205
 Leu Pro Glu Asn Ala Thr Lys Val Glu Met Lys Val Ala Phe Thr Asn
 210 215 220
 Thr Asp Ala Asp Gln Val Asp Leu Leu His Ala Pro Thr Gln Ile
 225 230 235 240
 Ala Gly Thr Glu Val Thr Glu Thr Tyr Ala Thr Pro Val Ser Met Thr
 245 250 255
 Phe Asp His Gln Leu Ser Lys Val Lys Phe Ser Phe Glu Asn Ala Val
 260 265 270
 Gly Glu Gly Tyr Asn Val Lys Val Ser Asn Val Arg Ile Thr Asp Ala
 275 280 285
 Tyr Thr Lys Gly Thr Leu Thr Val Thr Ala Ala Gly Asn Ile Trp Ser
 290 295 300
 Ala Gln Ala Asp Asn Asn Leu Ile Leu Asn Phe Gly Asn Val Val Ala
 305 310 315 320
 Asn Asp Ala Thr Ala Asp Glu Ala Ala Val Ile Ala Asn Ala Thr Thr
 325 330 335
 Ser Glu Ser Tyr Asn Glu Lys Leu Met Ile Pro Met Ala Ala Thr Ala
 340 345 350
 Thr Tyr Thr Val Thr Phe Thr Ala Glu Leu Tyr His Gly Asp Val Leu
 355 360 365
 Leu Gly Ser Tyr Asn His Glu Val Thr Ile Lys Asn Val Glu Phe Lys
 370 375 380
 Leu Gly Tyr Cys Tyr Asp Phe Lys Ala Thr Leu Thr Ser Ser Asn Ile
 385 390 395 400
 Thr Asp Lys Pro Leu Asn Pro Ile Lys Phe Glu Val Asp Asn Ile Thr
 405 410 415
 Asp Trp Asn Lys Thr Asp Ile Asp Lys Asp Leu Ala Val Pro Thr Thr
 420 425 430
 Gln Ser Gly Asn
 435

<210> 6662

<211> 73

<212> PRT

<213> B.fragilis

<400> 6662

Gly Gln Gln Asp Asn Phe Phe Leu Tyr Thr Phe Val Tyr Ala Lys Tyr
 1 5 10 15
 Lys Met Tyr Thr Tyr Asn Arg Leu Ile Ile Asn Ala Met Arg Arg Phe

		20						25				30					
Met	Phe	Pro	Cys	Ala	Gly	Thr	Pro	Leu	Ala	Leu	Pro	Tyr	Gln	Glu	Phe		
		35						40				45					
Thr	Lys	Gly	Pro	Pro	Ala	Leu	Ser	Pro	Gly	Arg	Phe	Arg	Glu	Ala	Arg		
		50						55				60					
Asn	Ile	Arg	Gln	Gly	His	Gly	Cys	Trp									
65								70									

<210> 6663

<211> 887

<212> PRT

<213> B.fragilis

<400> 6663

Asn	Asn	Ile	Leu	Met	Arg	Pro	Ser	His	Phe	Thr	Leu	His	Ser	Cys	Arg		
1				5					10					15			
Asp	Ala	Phe	Ser	His	Phe	Leu	Leu	Phe	Thr	Leu	Val	Ser	Gly	Ser	Ile		
			20					25					30				
Cys	Leu	Ser	Ser	Cys	Glu	Asp	Asp	Met	Asp	Arg	Pro	Ser	Pro	Ser	Ser		
		35					40					45					
His	Val	Ser	Phe	Thr	Thr	Glu	Ile	Ser	Ser	Ser	Arg	Thr	Pro	Ser	Thr		
		50				55					60						
Arg	Ser	Thr	Thr	Asp	Thr	Asp	Thr	Pro	Gln	Gly	Thr	Val	Thr	Ala	Leu		
65				70					75						80		
Gln	Gly	Gly	Ser	Thr	Pro	Leu	Tyr	Leu	His	Thr	Leu	Tyr	Thr	Asp	Ser		
				85					90					95			
Ile	Ala	Leu	Pro	Pro	Ser	Asp	Ser	Arg	Pro	Asp	Arg	Gly	Val	Leu	Thr		
			100					105					110				
Arg	Ala	Thr	Pro	Ile	Lys	Asp	Ala	Asn	Met	Tyr	Glu	Ser	Phe	Gly	Val		
			115				120					125					
Ser	Ala	Tyr	Ser	Tyr	Thr	Gly	Ser	Trp	Ser	Glu	Asp	Lys	Thr	Pro	Asn		
		130				135					140						
Tyr	Phe	Tyr	Asn	Ala	Thr	Ala	Ser	Lys	Ser	Asp	Gly	Gly	Tyr	Thr	Leu		
145				150						155					160		
Ser	Ser	Thr	Tyr	Tyr	Trp	Pro	Gly	Ser	Ser	Tyr	Lys	Met	Lys	Phe	Phe		
			165						170					175			
Ala	Tyr	Ala	Pro	Thr	Ala	Asn	Thr	Gln	Tyr	Val	Leu	Ser	Gly	Arg	Thr		
			180					185						190			
His	Ala	Gly	Ser	Pro	Thr	Ile	Ser	Val	Thr	Ile	Pro	Gly	Asp	Val	Asn		
			195				200					205					
Asp	Gln	Lys	Asp	Leu	Leu	Val	Ala	Lys	Thr	Asp	Glu	Leu	Ala	Gly	Asn		
			210			215					220						
Thr	Asn	Thr	Ala	Val	Ala	Leu	Ser	Phe	Asn	His	Ala	Leu	Thr	Ala	Ile		
225				230					235						240		
Arg	Phe	Val	Cys	Gly	Asp	Asp	Met	Gln	Val	Gly	Thr	Val	Lys	Ser	Val		
			245						250					255			
Ser	Leu	Lys	Asn	Val	Tyr	Ser	Lys	Gly	Thr	Tyr	His	Met	Gly	Thr	Gln		
			260					265					270				
Ser	Trp	Ser	Asn	Val	Gly	Thr	Pro	Ala	Thr	Phe	Pro	Gln	Thr	Leu	Asn		
		275					280					285					
Lys	Ser	Ile	Thr	Gly	Thr	Pro	Asp	Glu	Pro	Leu	Thr	Val	Asp	Ala	Gln		
		290				295					300						
Thr	Phe	Met	Met	Val	Pro	Gln	Thr	Leu	Pro	Asp	Gly	Ala	Gln	Leu	Glu		
305				310						315					320		
Val	Val	Phe	Thr	Asp	Asn	Ser	Ser	Met	Asp	His	Thr	Leu	Thr	Ala	Asp		
			325						330					335			
Leu	Lys	Gly	Thr	Val	Trp	Pro	Val	Gly	Lys	Thr	Val	Thr	Tyr	Lys	Ile		
			340					345					350				
Ser	Ser	Ser	Ser	Ile	Asn	Trp	Thr	Tyr	Thr	Leu	Ala	Val	Thr	Ser	Pro		

Ala	Asp	Phe	Thr	Tyr	Glu	Gly	Gly	Thr	Gln	Gln	Tyr	Asn	Val	Thr	Ser
370						375					380				
Tyr	Arg	Gln	Asn	Thr	Lys	Gly	Val	Lys	Glu	Ala	Val	Ala	Trp	Thr	Ala
385					390					395					400
Gln	Tyr	Ser	Glu	Asp	Gly	Gly	Ala	Ser	Trp	Ser	Asn	Thr	Arg	Pro	Gly
			405						410					415	
Trp	Leu	Asp	Ala	Phe	Thr	Val	Ser	Gly	Asn	Gly	Gly	Asp	Thr	Pro	Gln
			420						425					430	
Ser	Tyr	Asn	Ala	Thr	Val	Ile	Ala	Gln	Thr	Gly	Val	Glu	Ala	Asn	Pro
		435						440				445			
Gln	His	Thr	Ala	Ala	Leu	Gln	Asn	Ala	Ser	Val	Lys	Gly	Thr	Glu	Thr
450						455					460				
Val	Pro	Tyr	Asn	Leu	Ala	Asn	Gln	Thr	Asn	Gly	Gly	Thr	Val	Asp	Glu
465					470					475					480
Asn	Thr	Ala	Asn	Cys	Tyr	Val	Val	Ser	Gly	Ser	Gly	Tyr	Tyr	Cys	Phe
				485					490					495	
Pro	Leu	Val	Tyr	Gly	Asn	Ala	Ile	Lys	Gly	Gly	Thr	Thr	Asn	Thr	Ser
			500						505				510		
Ala	Tyr	Thr	Ser	Thr	Ala	Pro	Ser	Gly	Thr	Thr	Ile	Leu	Ser	Pro	Phe
		515					520					525			
Ile	Asn	His	Ala	Gly	Asn	Ala	Ile	Thr	Ala	Pro	Tyr	Ile	Arg	Asn	Asn
530						535					540				
Ala	Asp	Cys	Thr	Pro	Ala	Lys	Ala	Glu	Leu	Val	Trp	Gln	Asp	Ala	Pro
545					550					555					560
Asn	Leu	Val	Thr	Asp	Ile	Lys	Tyr	Asn	Asn	Thr	Gly	Asn	Gly	Asn	Ile
				565					570					575	
Ser	Phe	Thr	Val	Asp	Lys	Asn	Thr	Ile	Arg	Gln	Gly	Asn	Ala	Ile	Ile
			580						585				590		
Ala	Ile	Lys	Asp	Ala	Gly	Asp	Asn	Val	Leu	Trp	Ser	Trp	His	Ile	Trp
		595					600					605			
Val	Thr	Asp	Glu	Asp	Ile	Asn	Asn	Val	Ile	Glu	Ile	Thr	Asn	Phe	Gln
610						615						620			
Gly	Lys	Lys	Tyr	Lys	Leu	Met	Ser	Val	Asn	Leu	Gly	Trp	Cys	Asp	Gly
625					630					635					640
Ser	Thr	Thr	Asn	Tyr	Ala	Glu	Arg	Ser	Cys	Lys	Val	Lys	Phe	Thr	Ala
				645					650					655	
Gly	Gly	Glu	Ser	Gln	Thr	Ile	Thr	Ile	Arg	Gln	Ala	Ser	Lys	Ser	Ile
			660						665					670	
Val	Val	Gly	Gly	Asn	Asn	Pro	Tyr	Tyr	Gln	Trp	Gly	Arg	Lys	Asp	Pro
		675					680					685			
Phe	Leu	Pro	Ser	Asn	Gly	Leu	Arg	Asp	Ile	Asn	Lys	Thr	Trp	Tyr	Asp
690						695					700				
Lys	Asp	Gly	Asn	Ala	His	Thr	Gly	Ser	Pro	Lys	Thr	Glu	Asp	Phe	Ser
705					710					715					720
Ile	Gly	Ala	Pro	Cys	Ile	Thr	Asn	Tyr	Ile	Leu	Lys	Pro	Asp	Val	Met
				725					730					735	
Gln	Ser	Gln	Asp	Tyr	Gly	Asp	Asn	Thr	Tyr	Ala	Asn	Leu	Trp	Ser	Ala
			740						745				750		
Asp	Asn	Asn	Val	Tyr	Thr	Ala	Asn	Asp	Glu	Asn	Val	Ile	Lys	Thr	Ile
		755						760				765			
Tyr	Asp	Pro	Ser	Pro	Val	Gly	Phe	Lys	Val	Pro	Pro	Ser	Asn	Ala	Phe
770						775						780			
Thr	Gly	Phe	Thr	Thr	Thr	Gly	Asn	Asn	Thr	Ser	Thr	Ser	Ser	Glu	Ile
785					790					795					800
Asn	Gly	Thr	Trp	Asp	Ser	Ser	Leu	Lys	Gly	Trp	Asn	Phe	Tyr	Thr	Asp
			805						810					815	
Ser	Ser	Lys	Asn	Lys	Thr	Ile	Phe	Phe	Pro	Ala	Ser	Gly	Phe	Arg	Asp
			820					825						830	

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<212> PRT
<213> B.fragilis
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<212> PRT
<213> B.fragilis
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<210> 6666
<211> 61
<212> PRT
<213> B.fragilis
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<400> 6666
Glu Asn Gly Arg Ala Asn Arg Pro Cys Thr Glu Pro Glu Val His Thr
1          5          10          15
Gln Ser Lys His Asn His Pro Leu Arg Val Ile Pro Glu Ser Lys Pro
          20          25          30
Lys Asn Asn Glu Ser Leu Glu Lys Ser Leu Pro Thr Met Pro Val His
          35          40          45
Leu Ser Ala Ile Ile His Ser Ser Pro Gly Lys Gly Gly
          50          55          60

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<210> 6667
 <211> 171
 <212> PRT
 <213> B.fragilis

<400> 6667

Lys Pro Gln Arg Met Lys Ser Leu Ser Phe Arg Lys Asp Leu Ile Gly
 1 5 10 15
 Val Gln Glu Glu Leu Leu Arg Phe Ala Tyr Lys Leu Thr Ala Asn Arg
 20 25 30
 Glu Glu Ala Asn Asp Leu Leu Gln Glu Thr Ser Leu Lys Ala Leu Asp
 35 40 45
 Asn Glu Asp Lys Phe Met Pro Asp Thr Asn Phe Lys Gly Trp Met Tyr
 50 55 60
 Thr Ile Met Arg Asn Ile Phe Ile Asn Asn Tyr Arg Lys Ile Val Arg
 65 70 75 80
 Asp Gln Thr Tyr Val Asp Gln Thr Asp Asn Leu Phe His Leu Asn Leu
 85 90 95
 Pro Gln Asp Ser Gly Phe Glu Ser Thr Glu Gly Ala Tyr Asp Leu Lys
 100 105 110
 Glu Met His Arg Val Val Asn Ala Leu Pro Lys Glu Tyr Lys Val Pro
 115 120 125
 Phe Ser Met His Val Ser Gly Phe Lys Tyr Arg Glu Ile Ala Glu Lys
 130 135 140
 Leu Glu Leu Pro Leu Gly Thr Val Lys Ser Arg Ile Phe Phe Thr Arg
 145 150 155 160
 Gln Arg Leu Gln Gln Glu Leu Lys Asp Phe Val
 165 170

<210> 6668
 <211> 744
 <212> PRT
 <213> B.fragilis

<400> 6668

Asp Arg Phe Ser Ile Val Tyr Ser Gly Ile Ile Ile His Gly Ile Asp
 1 5 10 15
 Asp Leu Pro Thr Gly Cys Lys Gly Leu Asn Val Pro Leu His Ser Leu
 20 25 30
 Thr Ala Val Gln Ala Asn Lys Tyr Lys Thr Glu Glu Met Lys Val His
 35 40 45
 Lys Lys Asn Pro Ser Trp Met Ala Gly Gly Met Ala Thr Met Leu Leu
 50 55 60
 Cys Thr Leu Leu Phe Ser Cys Asn Asn Glu Asp Phe Leu Glu Ser Gly
 65 70 75 80
 Asn Pro Glu Lys Ala Gly Asp Asn Ile Cys Phe Gly Ile Ser Ser Asp
 85 90 95
 Lys Asn Met Gln Thr Arg Gly Tyr Ala Gly Ser Asp Asp Glu Gly Tyr
 100 105 110
 Thr Ala Asp Arg Phe Val Leu Arg Ser Asp Asp Ser Ala Asp Thr Leu
 115 120 125
 Cys Val Arg Ala Ile Val Ser Asp Gly Ile Asn Val Ser Gly Phe Glu
 130 135 140
 Gly Glu Gln Ala Leu Thr Arg Gly Thr Leu Val Gly Lys Asp Asn Phe
 145 150 155 160
 Tyr Asn Lys Phe His Val Leu Ala Tyr Trp Ser Lys Asn Gly Ala Ser
 165 170 175
 Ile Asp Gln Phe Tyr Met Asn Thr Asn Ala Ser Asn Ala Ala Ala Ser

			180						185						190			
Val	Gly	Thr	Gly	Ala	Ile	Trp	Ser	Thr	Glu	Gln	Ile	Tyr	Tyr	Trp	Pro			
		195					200					205						
Gly	Ala	Asp	His	Ser	Phe	Gln	Phe	Tyr	Ala	Trp	Ala	Pro	Thr	Asp	Ala			
	210					215					220							
Gly	Gly	Leu	Ile	Thr	Pro	Ser	Asp	Pro	Ser	Ser	Lys	Glu	Leu	Lys	Tyr			
225					230					235					240			
Thr	Val	Pro	Ala	Asp	Ala	Ala	Asp	Gln	Lys	Asp	Ile	Val	Val	Ala	Thr			
				245					250					255				
Thr	Asn	Glu	Ile	Pro	Gly	Asn	Asn	Asn	Ala	Ala	Val	Pro	Leu	Asn	Phe			
			260				265						270					
Lys	His	Ile	Cys	Thr	Ala	Val	Arg	Phe	Ala	Val	Gly	Ser	Gln	Met	Gln			
		275					280					285						
Pro	Gly	Ser	Ile	Lys	Ser	Val	Ala	Leu	Lys	Gly	Val	Lys	Asn	Ala	Gly			
		290				295					300							
Thr	Tyr	Asp	Met	Val	Ala	Gly	Thr	Trp	Thr	Leu	Gly	Asp	Ala	Thr	Val			
305					310					315					320			
Asp	Phe	Ser	Gln	Glu	Leu	Asn	Lys	Glu	Thr	Thr	Gly	Ser	Glu	Ala	Asn			
				325					330					335				
Gly	Ala	Glu	Ile	Thr	Ser	Ala	Glu	Gly	Thr	Phe	Met	Met	Leu	Pro	Gln			
			340					345					350					
Thr	Leu	Pro	Ala	Asp	Ala	Met	Val	Glu	Val	Val	Phe	Thr	Asn	Ala	Asn			
		355					360					365						
Ala	Ser	Gly	Val	Asp	Arg	Thr	Leu	Thr	Ala	Ser	Ile	Gly	Asn	Thr	Glu			
		370				375					380							
Trp	Lys	Thr	Gly	Thr	Thr	Val	Thr	Tyr	Ile	Leu	Ser	Ile	Thr	Pro	Glu			
385					390					395					400			
Tyr	Glu	Leu	Glu	Phe	Val	Ser	Gln	Pro	Glu	Thr	Gln	Asp	Ala	His	Tyr			
				405					410					415				
Val	Ile	Tyr	Pro	Ile	Ala	Ile	Lys	Ala	Asp	Lys	Phe	Pro	Glu	Gly	Gly			
			420					425					430					
Trp	Thr	Leu	Thr	Ser	Asn	Asp	Lys	Glu	Asn	Val	Thr	Phe	Val	Glu	Lys			
		435					440					445						
Phe	Ala	Asp	Asp	Gly	Ile	Lys	Asn	Leu	Val	Asp	Gln	Gly	Tyr	Trp	Leu			
	450					455					460							
Lys	Asp	Tyr	Cys	Gly	Ala	Ser	Thr	Leu	Thr	Gly	Ser	Ser	Phe	Gly	Glu			
465					470					475					480			
Val	Pro	Ile	Tyr	Val	Phe	Leu	Lys	Glu	Asn	Ile	Ser	Glu	Lys	Asp	Arg			
				485					490					495				
Glu	Ile	Val	Leu	Ser	Leu	Ala	Pro	Ala	Asn	Asp	Pro	Asn	Ala	Lys	Pro			
			500					505					510					
Lys	Thr	Phe	Thr	Phe	Lys	Gln	His	Cys	Pro	Ala	Trp	Asn	Asn	Gly	Ile			
		515					520											

Lys Asn Arg Phe Gly Val Glu Arg Lys Ser Asn Ser Gly Glu Thr Ile
 660 665 670
 Tyr Val Pro Thr Leu Glu Gln Thr Asp Met Val Trp Tyr Leu Pro Ala
 675 680 685
 Gln Glu Glu Ala Leu Tyr Met Lys Asp Asp Leu Ser Glu Asn Tyr Trp
 690 695 700
 Thr Ser Thr Ala Ile Thr Asp Pro Gly Thr Thr Ala Tyr Thr Tyr Thr
 705 710 715 720
 Ala Glu Ser Gly Ser Thr Ser Gly Met Asp Arg Asn Glu Val Ile His
 725 730 735
 Val Arg Ala Val Arg Lys Lys Pro
 740

<210> 6669

<211> 497

<212> PRT

<213> B.fragilis

<400> 6669

Arg Gly Gly Ser Arg Ile Asp Arg Leu Pro Arg Ser Phe Tyr Phe Arg
 1 5 10 15
 Ser Tyr Ile Gly Phe His Ile Ile Asp Leu Tyr Ile Leu Phe Leu Gln
 20 25 30
 Lys Arg Ile Ser Thr His Ser Phe Leu Thr Tyr Met Tyr Thr Glu Ile
 35 40 45
 Ile Asn Lys Tyr Asn Val Pro Val Pro Arg Tyr Thr Ser Tyr Pro Pro
 50 55 60
 Ala Asn Tyr Phe Glu Pro Phe Thr Asn Ala Arg Tyr Leu Glu Ala Val
 65 70 75 80
 Gln Gln Ser Asn Gln Ala Ser Glu Arg Ala Leu Ser Phe Tyr Leu His
 85 90 95
 Ile Pro Phe Cys Arg His Leu Cys His Tyr Cys Gly Cys Asn Ser Tyr
 100 105 110
 Pro Met Ala Arg Pro Glu Ile Ile Glu Ser Tyr Val Val Ala Leu His
 115 120 125
 Gln Glu Ile Asp Leu Ile Leu Pro Leu Leu Asp Lys Asp Arg Pro Ile
 130 135 140
 Ala Gln Ile His Tyr Gly Gly Gly Ser Pro Thr Ala Ile Pro Val Ala
 145 150 155 160
 Leu Ile Lys Glu Leu Asn Ala His Leu Leu Ser Ser Phe Pro Ala Ile
 165 170 175
 Asp Arg Pro Glu Ile Ala Ile Glu Cys His Pro Gly Tyr Leu Ser Glu
 180 185 190
 Lys Asp Trp Leu Gln Leu Thr Glu Cys Gly Phe Asn Arg Leu Ser Ile
 195 200 205
 Gly Val Gln Asp Phe Asn Ile Glu Val Leu Lys Thr Val Asn Arg Arg
 210 215 220
 Pro Ser Leu Leu Pro Met Glu Asp Ile Phe Ile Leu Leu Arg Glu Lys
 225 230 235 240
 Gly Ile Ser Ile Asn Leu Asp Phe Leu Tyr Gly Leu Pro Lys Gln Thr
 245 250 255
 Val Glu Asn Phe Thr Arg Asn Ile Lys Gln Ala Ile Leu Leu Ser Pro
 260 265 270
 Asp Arg Leu Val Met Phe Ser Tyr Ala His Val Pro Trp Ile Asn Lys
 275 280 285
 Arg Gln Leu Leu Leu Glu Lys Ser Gly Leu Pro Asp Asn His Glu Lys
 290 295 300
 Gln Thr Met Phe Asp Thr Ala Ala Gly Leu Leu His Lys Ser Gly Tyr
 305 310 315 320

Gln Ser Ile Gly Met Asp His Phe Val Leu Pro Asn Asp Glu Leu Ser
 325 330 335
 Ile Ala Met Gln Thr Lys Lys Leu His Arg Asn Phe Gln Gly Tyr Cys
 340 345 350
 Thr Arg Arg Thr Thr Ala Gln Val Tyr Gly Leu Gly Val Thr Ala Ile
 355 360 365
 Ser Gln Leu Glu Ser Ala Tyr Ala Gln Asn Thr Lys Asp Ile Pro His
 370 375 380
 Tyr Ile Lys Thr Ile Ser Lys Gly Glu Leu Ser Ile Thr Lys Gly Tyr
 385 390 395 400
 Ala Leu Ser Pro Thr Glu Gln Leu Thr Arg Glu Val Ile Glu Thr Leu
 405 410 415
 Met Cys Asn Gly Cys Ile Asp Trp Arg Asp Leu Ser Lys Arg Leu His
 420 425 430
 Val Ser Val Ser Thr Leu Lys Ala Ala Thr Ala Tyr Asp Glu Lys Lys
 435 440 445
 Leu Ser Gly Phe Ala Asp Asp Gly Leu Ile Tyr Tyr Thr Asp Asp Tyr
 450 455 460
 Leu Glu Met Thr Thr Ala Gly Ser Ala Phe Val Arg Asn Val Ala Ala
 465 470 475 480
 Ser Leu Asp Lys Leu Met Leu His Ser Pro His Ser Tyr Ser Lys Pro
 485 490 495
 Leu

<210> 6670
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 6670
 Arg Gln Ile Arg Pro Ser Lys Ser Ser His Lys Arg Tyr Val Ile Tyr
 1 5 10 15
 His Ile Val Thr Lys Val Lys Glu Gln Gly Gly Gly Pro Ser Leu Thr
 20 25 30
 Pro Ser Phe Ala Gln Leu Lys Asn Tyr Thr Lys Ser Leu Pro Lys Ile
 35 40 45
 Asn Leu Phe Ile Asn Glu Lys Tyr Leu Ile Lys Gln Ser Pro Ser Val
 50 55 60
 Pro Val Ala Ile Ser Asp Gly
 65 70

<210> 6671
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 6671
 Ile Met Lys Arg Gly Lys Arg Leu Ile Leu Pro Leu Leu Gly Thr Leu
 1 5 10 15
 Ile Leu Thr Ser Leu Phe Ser Cys Gly Val Asp Arg Trp Pro Glu Tyr
 20 25 30
 Tyr Pro Glu Thr Gly Arg Asp Ile Trp Ile Asp Ser Val Met Arg Gln
 35 40 45
 Glu Tyr Leu Trp Tyr Arg Asp Met Ser Ser Pro Ala Ala Pro Asp Tyr
 50 55 60
 Phe Gln Lys Pro Glu Ala Phe Leu Lys Lys Ala Val Ala Ser Met Asp
 65 70 75 80
 Asn Gly Phe Ser Lys Ile Asp Ser Leu Leu Asp Glu Pro Ile Pro Ser

				85					90					95					
Tyr	Gly	Phe	Asp	Tyr	Thr	Leu	Tyr	Lys	Val	Leu	Asp	Asn	Asp	Thr	Ala				
			100					105					110						
Tyr	Asn	Ala	Leu	Ile	Ser	Tyr	Val	Val	Pro	Gly	Ser	Pro	Ala	Glu	Glu				
		115					120					125							
Ala	Gly	Leu	Gln	Arg	Gly	His	Trp	Ile	Met	Met	Met	Asn	Gly	Asp	Tyr				
	130					135					140								
Ile	Thr	Lys	Lys	Val	Glu	Ser	Glu	Leu	Leu	Gln	Gly	Ser	Thr	Arg	Gln				
145					150					155					160				
Leu	Gln	Ile	Gly	Val	Tyr	Lys	Glu	Val	Val	Gly	Glu	Asp	Gly	Glu	Val				
			165					170						175					
Thr	Gly	Gly	Val	Val	Pro	Ile	Gly	Glu	Thr	Thr	Met	Pro	Ala	Ser	Arg				
			180					185					190						
Ser	Leu	Val	Asp	Lys	Pro	Val	His	Arg	Phe	Glu	Ile	Ile	Pro	Trp	Asn				
		195					200					205							
Gly	Lys	Lys	Val	Gly	Tyr	Leu	Met	Tyr	Asn	Glu	Phe	Lys	Ala	Gly	Pro				
	210					215				220									
Thr	Thr	Asp	Ser	Gln	Ala	Tyr	Asn	Asp	Asp	Leu	Arg	Arg	Ala	Phe	Arg				
225				230						235					240				
Asp	Phe	Gln	Thr	Gly	Val	Asn	Glu	Phe	Val	Leu	Asp	Leu	Arg	Tyr					
			245					250					255						
Asn	Thr	Gly	Gly	Ser	Leu	Asp	Cys	Ala	Gln	Leu	Leu	Cys	Thr	Met	Leu				
		260						265					270						
Ala	Pro	Ala	Asp	Lys	Met	Asn	Gln	Leu	Leu	Ala	Leu	Leu	Arg	Tyr	Ser				
		275					280					285							
Asp	Lys	Arg	Val	Glu	Ala	Asn	Gln	Asp	Leu	Thr	Phe	Asn	Pro	Glu	Leu				
	290					295					300								
Ile	Gln	Ser	Gly	Ala	Asn	Leu	Asn	Leu	Ser	Thr	Val	Tyr	Val	Leu	Thr				
305				310						315				320					
Thr	Asn	Ala	Thr	Arg	Gly	Ala	Ala	Glu	Met	Val	Ile	Asn	Cys	Leu	Asn				
			325					330					335						
Pro	Tyr	Met	Lys	Val	Val	Leu	Ile	Gly	Thr	Lys	Thr	Ala	Gly	Glu	Tyr				
			340					345					350						
Val	Ala	Thr	Lys	Pro	Phe	Val	His	Pro	Thr	Asp	Arg	Phe	Ile	Leu	Asn				
		355					360					365							
Leu	Val	Val	Cys	Asn	Val	Tyr	Asn	Ala	Glu	Glu	Lys	Ser	Asp	Tyr	Ala				
	370					375				380									
Thr	Gly	Phe	Lys	Pro	Thr	Tyr	Glu	Tyr	Asn	Glu	Asp	Ser	Tyr	Leu	Ser				
385				390						395				400					
Thr	Tyr	Leu	Pro	Phe	Gly	Asn	Thr	Asn	Glu	Thr	Leu	Leu	Asn	Ala	Ala				
			405					410					415						
Leu	Lys	Ile	Met	Ser	Gly	Ile	Thr	Asp	Lys										
		420						425											

<210> 6672

<211> 203

<212> PRT

<213> B.fragilis

<400> 6672

Ile	Thr	Ile	Leu	Ile	Leu	Lys	Ser	Met	Lys	Lys	Asn	Phe	Ile	Thr	Val				
1			5					10					15						
Thr	Pro	Asp	Ser	Gly	Thr	Ser	Gly	Ser	Ser	Asn	Thr	Ile	Ser	Val	Ala				
		20					25					30							
Ala	Glu	Pro	Asn	Ile	Leu	Leu	Lys	Glu	Arg	Ser	Glu	Ile	Leu	Asn	Phe				
	35					40					45								
Asn	Ala	Ser	Gly	Gly	Val	Ser	Lys	Ser	Val	Gln	Val	Ile	Gln	Asn	Ser				
	50				55					60									
Met	Pro	Tyr	Phe	Pro	Ile	Arg	Phe	Pro	Phe	Val	Leu	Asn	Met	Asn	Lys				

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<210> 6673
<211> 388
<212> PRT
<213> B.fragilis
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<400> 6673															
Ser	Asn	Ile	Ile	Ile	Phe	Met	Lys	Lys	Asn	Leu	Leu	Phe	Thr	Ala	Ile
1				5					10					15	
Ala	Val	Ala	Val	Leu	Ala	Ser	Cys	Ser	Asn	Asp	Asp	Val	Val	Asp	Val
			20					25					30		
Asn	Asn	Gly	Ser	Gly	Ile	Ser	Phe	Arg	Ala	Ser	Leu	Asp	Lys	Ala	Ile
		35					40					45			
Thr	Arg	Ser	Asn	Val	Thr	Asn	Leu	Gln	Asn	Leu	Ala	Ala	Phe	Asn	Val
	50					55					60				
Thr	Ala	Ile	Gly	Asn	Gly	Ala	Asn	Phe	Phe	Thr	Asp	Leu	Ser	Val	Thr
65					70					75					80
Ser	Thr	Asp	Asn	Gly	Thr	Asn	Trp	Thr	Thr	Ala	Ser	Thr	Tyr	Tyr	Trp
				85					90					95	
Pro	Asn	Tyr	Ala	Leu	Ser	Phe	Phe	Ala	Tyr	Ala	Pro	Gln	Thr	Pro	Gly
			100					105					110		
Gly	Thr	Val	Ser	Ile	Asp	Asn	Thr	Ala	Lys	Lys	Ile	Thr	Gly	Phe	Ser
		115					120					125			
Pro	Ala	Gln	Ser	Val	Ala	Asp	Gln	Lys	Asp	Leu	Val	Ile	Ser	Tyr	Asn
		130				135					140				
Thr	Gly	Thr	Lys	Gly	Ser	Asn	Glu	Asn	Ala	Gly	Val	Ala	Met	Asn	Phe
145					150					155					160
Lys	His	Ala	Leu	Ser	Gln	Ile	Val	Val	Asn	Ala	Lys	Cys	Ser	Asn	Asp
				165					170					175	
Lys	Ile	Lys	Ile	Glu	Val	Leu	Gly	Val	Lys	Leu	Val	Asn	Ala	Ala	Ala
			180					185					190		
Lys	Ala	Asp	Phe	Ala	Phe	Pro	Glu	Ala	Val	Thr	Asn	Thr	Gly	Tyr	Thr
		195					200					205			
Leu	Pro	Gln	Gly	Gln	Trp	Ser	Asn	Leu	Ser	Glu	Lys	Asp	Asp	Pro	Ser
						215					220				
Lys	Ala	Tyr	Met	Ile	Arg	Gly	Asp	Ala	Pro	Leu	Thr	Leu	Thr	Ala	Asp
225					230					235					240
Ala	Gln	Ser	Ile	Met	Phe	Gly	Asp	Asn	Asn	Leu	Met	Leu	Ile	Pro	Gln
				245					250					255	
Gln	Leu	Thr	Ala	Trp	Asn	Gly	Thr	Val	Ala	Thr	Ala	Gly	Ala	Tyr	Leu
			260					265					270		
Ser	Val	Leu	Cys	Arg	Ile	Tyr	Ser	Leu	Asp	Gly	Gly	Asn	Glu	Thr	Leu

275	280	285
Leu Tyr Pro Glu Pro Thr Ser Thr Asp Asp Lys Ser Gly Lys Tyr Ala		
290	295	300
Phe Ser Ala Ile Gly Ile Asn Thr Asn Trp Glu Pro Gly Lys Lys Tyr		
305	310	315
Thr Tyr Thr Leu Asn Phe Cys Gly Asp Gly Gly Gly Gly Lys Ile		
325	330	335
Asp Pro Thr Pro Thr Asp Pro Thr Lys Pro Thr Asp Pro Thr Val Asp		
340	345	350
Pro Thr Pro Ile Asp Gly Gly Ser Gly Gly Asp Pro Ile Leu Gly Lys		
355	360	365
Pro Ile Lys Phe Thr Val Thr Val Asp Asp Trp Thr Asp Gln Pro Val		
370	375	380
Asp Val Pro Met		
385		

<210> 6674

<211> 291

<212> PRT

<213> B.fragilis

<400> 6674

Asn Asp Val Met Lys Leu Leu Tyr Phe Lys Glu His Leu Ser Cys Ile		
1	5	10
Asn Tyr Gln Ile Asn Val Asn Thr Gly Phe Val Tyr Tyr Asn Leu Glu		
20	25	30
Lys Asp Ser Val Ser Lys Ile Asp Asn Ser Ala Ser Pro Cys Ile Leu		
35	40	45
Phe Leu Leu Asp Gly Glu Val Ser Ile Asp Ser Gly Glu Tyr Gln Asn		
50	55	60
Val His Ile Glu Lys Asp Lys Met Val Leu Ile Pro Gln His Val Asp		
65	70	75
Asn Lys Ile Glu Val Ile Tyr Asp Ala Lys Cys Leu Leu Leu Phe Trp		
85	90	95
Asn Lys Asp Ile Arg Val Cys Asp Lys Val Tyr Met Asn Ser Leu Ser		
100	105	110
Ser Tyr Lys Glu Arg Lys Lys Glu Met Cys Val Leu Pro Ile Arg Asp		
115	120	125
Pro Leu Gln Ala Val Leu Asn Ser Val Val Ala Tyr Leu Tyr Ala Lys		
130	135	140
Met Gln Cys Lys His Met His Leu Ile Lys Gln Gln Glu Val Leu Leu		
145	150	155
Val Leu Arg Gly Tyr Tyr Thr Lys Lys Glu Leu Phe Thr Phe Phe Ser		
165	170	175
Ser Ile Leu Gly Asn Thr Gly His Phe Glu Asp Phe Val Met Asn Asn		
180	185	190
Tyr Arg Lys Val Lys Ser Val Lys Glu Phe Ala Gly Leu Tyr Cys Thr		
195	200	205
Ser Glu Arg Ser Phe Asn Arg Lys Phe Gln Asn Cys Phe Lys Glu Ser		
210	215	220
Pro Tyr Gln Trp Met Gln Lys Lys Lys Ala Glu Leu Ile Arg Glu Lys		
225	230	235
Ile Ser Glu Ser Asp Thr Pro Phe Gln Glu Ile Ala Met Asp Phe Asp		
245	250	255
Phe Asn Ser Gln Ala His Phe Thr Ser Tyr Cys Lys Arg Leu Phe Gly		
260	265	270
Met Thr Pro Ser Lys Leu Arg Thr Glu Ser Lys Lys Val Ala Pro Asp		
275	280	285
Leu Glu Tyr		

290

<210> 6675

<211> 415

<212> PRT

<213> B.fragilis

<400> 6675

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Ser Asn Asp Met Asn His Met Arg Ile Asn Lys Leu Ser Pro Leu Ser
1      5      10      15
Arg Lys Ala Leu Asn Leu Ser Thr Phe Phe Cys Leu Tyr Ile Ala Gln
      20      25      30
Ala Ile Pro Met Ser Phe Phe Ser Thr Ala Ile Gln Val Leu Met Arg
      35      40      45
Gln Ala Asp Tyr Ser Leu Ser Ser Ile Ala Leu Leu Gln Leu Ile Lys
      50      55      60
Leu Pro Trp Ile Leu Lys Phe Leu Trp Ala Pro Leu Val Asp Arg His
      65      70      75      80
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 Phe Ser Glu Glu Asp Val Lys Arg Met Lys Arg Ala Lys Ala Glu Pro
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 Ile Thr Ala Met Glu Lys Gly Arg Ile Ile Trp Glu Ile Asp Val Glu
 515 520 525
 Ser Pro Ser Met Pro Pro Glu Val Gly His Lys Tyr Glu Pro Asp Asp

530		535		540
Val Phe Cys Tyr Ile	Ala Thr Pro Trp Asn Thr Tyr Asp Arg Val Leu			
545	550	555		560
Ala Asn Phe Ser Gly Arg Ile Ile Glu Val Cys Ala Lys Gln Gly Ala				
	565	570		575
Leu Val Asn Lys Gly Asp Ala Leu Ala Tyr Val Glu Arg Cys Glu Glu				
	580	585		590
Pro Ala				

<210> 6678
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 6678
Met Ser Gln Ile Gly Tyr Lys Ser Ser Glu Thr Ser Val Val Tyr Ile
1 5 10 15
Ile Thr Lys Thr Met Pro Tyr Phe Asn Gly Gln Leu His Phe Phe Thr
20 25 30
Phe Thr Leu His Ile Gln Tyr Gln Ser Leu Lys Leu Leu Asn Met Lys
35 40 45
Leu Asp Glu Asn Ile Leu Lys Thr Cys Gln Gly Leu Val Met Asn Cys
50 55 60
Asn Cys Lys Val Leu Ile Leu Asn Val Leu Gly Glu His Arg Val Phe
65 70 75 80
Leu Val Asn Asp Val His Leu Lys Thr Arg Glu Cys Arg Tyr Asn Glu
85 90 95
Val Arg Asp Ala Gln Asp Ile Thr Thr Leu Val Leu Asn Ile Gly His
100 105 110
Asn Phe Ala Asn Gly Met Thr Glu Gln Thr Leu Leu Glu Arg Thr Gln
115 120 125
Ser Ile His Lys Lys Glu Asp Phe Lys Phe Gly Thr Asp Asn Tyr Leu Trp
130 135 140
Ile Thr Lys Val Asp Leu Asn Arg
145 150

<210> 6679
 <211> 772
 <212> PRT
 <213> B.fragilis

<400> 6679
Tyr Asn Lys Met Asn Asn Ala Lys Leu Leu His Leu Met Val Tyr Ile
1 5 10 15
Leu Thr Ile Ile Leu Gly Gln Ser Cys Thr Glu Val Asp Ile Thr Met
20 25 30
Pro Lys Gly Pro Lys Gly Asp Arg Gly Met Ser Ala Tyr Glu Phe Trp
35 40 45
Lys Glu Asn Val Glu Asn Gly Val Ile Ser Trp Pro Lys Lys Glu Thr
50 55 60
Glu Ile Thr Asp Phe Phe Lys Tyr Leu Lys Gly Lys Asp Gly Leu Asp
65 70 75 80
Gly Lys Ser Ala Phe Glu Leu Trp Lys Glu Glu Val Ala Thr Gly Ala
85 90 95
Leu Asp Asn Pro His Arg Pro Gly Ser Met Trp Pro Val Ser Gln Asn
100 105 110
Asn Leu Arg Asp Phe Trp Tyr Tyr Leu Thr Gly Ala Ser Gly Glu Asn
115 120 125

Gly	Gln	Thr	Pro	His	Ile	Gly	Asn	Asn	Met	Asn	Trp	Trp	Ile	Gly	Asn
130						135					140				
Lys	Asp	Thr	Gly	Ile	Arg	Ala	Gln	Gly	Arg	Asp	Gly	Gln	Asn	Gly	Glu
145					150					155					160
Asp	Ala	Val	Pro	Pro	Val	Val	Thr	Ile	Gly	Asp	Asn	Gly	Asn	Trp	Leu
			165						170					175	
Ile	Asp	Gly	Val	Asp	Thr	Gly	Lys	Pro	Ser	Arg	Gly	Glu	Glu	Gly	Val
		180						185					190		
Ala	Gly	Thr	Thr	Pro	Thr	Val	Thr	Ile	Gly	Glu	Asn	Gly	Asn	Trp	Val
	195						200					205			
Ile	Asn	Gly	Lys	Asp	Thr	Gly	Lys	Ala	Ala	Ile	Gly	Lys	Asp	Gly	Arg
	210					215					220				
Ser	Pro	Glu	Val	Ile	Ile	Gly	Thr	Asn	Gly	Asn	Trp	Tyr	Ile	Asn	Gly
225					230					235					240
Lys	Asp	Thr	Gly	Ile	Arg	Ala	Tyr	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys
			245						250					255	
Asp	Gly	Ile	Asn	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys	Asp	Gly	Ala	Asn
		260						265					270		
Gly	Lys	Asp	Gly	Ile	Asn	Gly	Lys	Asp	Gly	Ala	Ala	Gly	Lys	Asp	Gly
	275						280					285			
Ala	Asn	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys	Ser	Ala	Tyr	Glu	Leu	Trp
	290					295					300				
Val	Glu	Ser	Val	Glu	Ala	Gly	Cys	Asn	Asn	Thr	Gly	Pro	Lys	Val	Lys
305					310					315					320
Asn	Pro	His	Asn	Pro	Ser	Leu	Asp	Trp	Asp	Cys	Gly	Lys	Thr	Thr	Leu
			325						330					335	
Ser	Asp	Phe	Trp	Glu	Phe	Leu	Arg	Gly	Ala	Asp	Gly	Lys	Asp	Gly	Ala
		340						345					350		
Asp	Gly	Lys	Asp	Gly	Lys	Pro	Gly	Val	Pro	Gly	Lys	Pro	Gly	Ala	Glu
	355						360					365			
Val	Thr	Ile	Ile	Lys	Gly	Val	Pro	Asn	Val	Ile	Ala	Leu	Tyr	Ser	Gln
	370					375					380				
Gln	Glu	Phe	Gly	Glu	Tyr	Val	Arg	Thr	Thr	Asp	Gly	Gly	Val	Ala	Tyr
385					390					395					400
Arg	Val	Tyr	Asp	Glu	Ser	Gly	Asn	Lys	Ala	Pro	Lys	Ala	Val	Val	Lys
			405						410					415	
Gly	Ile	Pro	Gly	Leu	Asp	Pro	Ala	Lys	Thr	Tyr	Thr	Ala	Asn	Glu	Glu
		420						425					430		
Gly	Glu	Phe	Ile	Ile	Pro	Lys	Glu	Asp	Leu	Pro	Gln	Ile	Asp	Asp	Ile
	435						440				445				
Asp	Ala	Arg	Trp	Gly	Lys	Val	Lys	Glu	Val	Thr	Ile	Asn	Lys	Val	Thr
	450					455					460				
Lys	Glu	Ser	Ala	Glu	Asn	Thr	Tyr	Val	Pro	Asn	Arg	Met	Gln	Ile	Arg
465					470					475					480
Met	Ile	Tyr	Ile	Ala	Thr	Ser	Pro	Tyr	Leu	Asp	Tyr	Glu	His	Asn	Leu
			485						490					495	
Gln	Phe	Arg	Val	Glu	Arg	Lys	Thr	Asp	Pro	Ser	Ala	Glu	Trp	Lys	Thr
		500						505					510		
Leu	Pro	Ser	Tyr	Leu	Pro	Asn	Val	Asn	Ala	Val	Phe	Thr	Ala	Tyr	Gln
	515						520					525			
Val	Thr	Asn	Pro	Glu	Asp	Pro	Thr	Ser	Leu	Asp	Lys	Thr	Lys	Lys	Ile
	530					535					540				
Glu	Ser	Thr	Thr	Pro	Asn	Met	Ser	Ser	Thr	Ser	Met	Ser	Ile	Asn	Pro
545					550					555					560
Asn	Arg	Tyr	Val	Lys	Glu	Asn	Pro	Ala	Gly	Ile	Lys	Asn	Gly	Ile	Thr
			565						570					575	
Asp	Phe	Trp	Asp	Gly	Lys	Asp	Asn	Tyr	Phe	Ser	Ile	Val	Lys	Asp	Thr
		580						585					590		
Pro	Tyr	Tyr	Gly	Glu	Thr	Ile	Tyr	Trp	Asn	Gly	Val	Cys	Lys	Met	Ala

595	600	605
Pro Tyr Gln Ile Pro Pro Thr Leu Lys Thr Leu Ala Leu Thr Lys Ala		
610	615	620
Ser Ala Glu Ser Gly Asp Val Phe Leu Asn Lys Ala Gln Gly Glu		
625	630	635
Phe Asp Phe Ser Thr Ile Asp Phe Asn Ile Ile Cys Lys His Glu Leu		
645	650	655
Val Lys Thr Val Lys Pro Asn Gly Ile Asp Tyr Ile Glu Pro Glu Tyr		
660	665	670
Tyr Ala Pro Glu Glu Ala Lys Glu Leu Leu Leu Cys Tyr Val Lys Phe		
675	680	685
Thr Tyr Thr Ser Pro Leu Gly Val Gln Thr Ala Thr Ser Glu Leu Asn		
690	695	700
Met Ser Ser Tyr Lys Lys Pro Glu Tyr Ala Ala Leu Ser Pro Tyr Leu		
705	710	715
Gly Ala Thr Ile Tyr Ser Val Gly Ala Ser Ser Thr Phe Ile Tyr Ser		
725	730	735
Ser Asn Val Ser Leu Gly Val Leu Lys Lys Lys Ala Asp Asn Gly Thr		
740	745	750
Tyr Tyr Val Glu Asn Thr Tyr Lys Asp Met Pro Glu Ile Ser Val Thr		
755	760	765
Tyr Lys Glu Lys		
770		

<210> 6680
 <211> 182
 <212> PRT
 <213> B.fragilis

<400> 6680

Thr Ser Pro Ile Cys Phe Thr Ala Val Thr Trp Ser His Thr Val Ala		
1	5	10
Glu Arg Ser Thr Glu Thr Asp Val Ile Pro Val Thr Met His Pro Met		
20	25	30
Val Phe Thr Tyr Leu Val Arg Tyr Glu Phe Ser His Gly Val Glu Tyr		
35	40	45
Val Ser Leu Ala Arg Gly Ala Leu Ala Gly Met Ala Gln Ala Val Trp		
50	55	60
Leu Asn Ser Gly His Thr Ser Asp Glu Ala Ala Thr Val Leu Tyr Asp		
65	70	75
Cys Thr Val Glu Asp Phe Gly Thr Gln Ala Leu Val Arg Ser Phe Gly		
85	90	95
Ile Pro Asp Phe Pro Asn Glu His Tyr Gly Thr Arg Ala Glu Arg Lys		
100	105	110
Tyr Gly Leu Asn Leu Glu Val Arg Leu Lys Asn Gly Lys Ile Lys Ser		
115	120	125
Phe Asp Phe Asp Val Thr Asp Gln Val Val Ala Gln Pro Gln Gly Gly		
130	135	140
Val Ile Val Val Lys Gly Ile Glu Ile Ser Asp Glu Glu Gly Thr Glu		
145	150	155
Gly Gly Ser Gly Phe Asp Val Asp Val Asp Trp Gly Asp Tyr Glu		
165	170	175
Asp Ile Glu Leu Pro Leu		
180		

<210> 6681
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 6681

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Arg Tyr Glu Ile Phe Ile Ile Val Ser Ile Leu Gln Lys Ala Met Thr
1      5      10      15
Ala Tyr Asp Leu Lys Asn Ile Ala Ser Ala Gly Gly Asn Ile Val Val
20     25     30
Asn Ala Glu Asp Phe Ser Ala Tyr Asp Leu Lys Asn Ile Ala Glu Asn
35     40     45
Gly Val Ala Thr Lys Ala Lys Leu Thr Ile Lys Asn Ala Gly Gly Leu
50     55     60
Ser Gly Tyr Asp Cys Lys Asn Ile Ala Ser Ala Asn Pro Gly Asn Val
65     70     75     80
Thr Phe Asp Phe Ser Glu
85

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<210> 6682

<211> 234

<212> PRT

<213> B.fragilis

<400> 6682

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Thr Leu Trp Ile Ile Lys Gly Ser Ala Leu Ile Leu Glu Glu Ser Pro
1      5      10      15
Ile Gln Gln Lys Val Gln Thr Arg His Ser Gly Gln Pro Ile Ser Ser
20     25     30
Gly Leu Phe Ile Cys Val Phe Val Gln Ala Phe Gly Asp Ala Phe Glu
35     40     45
Phe Thr Gln Val Ala Val His Phe Leu Cys Asn Asn Val Ile Ser His
50     55     60
Trp Leu Ser Glu Lys Asn Ser Lys Asn Phe Ala Ile Met Lys Lys Tyr
65     70     75     80
Phe Val Leu Ser Val Phe Ile Met Leu Ile Gly Ala Phe Thr Asn Val
85     90     95
Gln Gly Gln Asn Ser Ala Thr Pro Asp Lys Gly Val Leu Val His Gly
100    105    110
Asn Val Arg Leu Cys Asn Tyr Glu Arg Gly Cys Leu Ile Thr Asp Asn
115    120    125
Asp Met Lys His Trp Thr Gln Lys Leu Glu Ile Ser Tyr Asp Gly Ser
130    135    140
Asp Lys Thr Tyr Gly Ile Tyr Ile Asn Val Arg Gly Asp Ile Ile Asn
145    150    155    160
Leu Gly Val Lys Tyr Lys Ser Ser Gly Thr Glu Ser Tyr Thr Tyr Glu
165    170    175
Gly Thr Asp Arg Val Thr Gly Arg Lys Val Val Val Val Thr Lys Gln
180    185    190
Lys Leu Ser Trp Tyr Leu Asn Asn Asn Gly Val Asp Ser His Thr Glu
195    200    205
Val Glu Ser Pro Lys Gly Ile Ile Val Thr Val Pro Ala Thr Tyr Thr
210    215    220
Val Phe Ser Val Val Pro Ile Lys Asn Lys
225    230

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<210> 6683

<211> 282

<212> PRT

<213> B.fragilis

<400> 6683

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Asn Asn His Phe Ile Ile Thr Tyr Ile Ile Met Asn Lys Val Phe Leu

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1           5           10           15
Phe Leu Leu Phe Ser Phe Leu Thr Ile Thr Ser Met Ala Gln Glu Lys
      20           25           30
Ile Lys Gln Thr Ala Gly Arg Asp Gln Leu Gly Asp Phe Ala Pro Lys
      35           40           45
Phe Ala Glu Leu Asn Asp Asp Val Leu Phe Gly Glu Ile Trp Ser Arg
      50           55           60
Thr Asp Lys Leu Ser Leu Arg Asp Arg Ser Leu Val Thr Ile Thr Ser
65           70           75           80
Leu Ile Ser Gln Gly Ile Thr Asp Asn Ser Leu Thr Phe His Leu Gln
      85           90           95
Ser Ala Lys Asn Asn Gly Ile Ser Arg Thr Glu Ile Ser Glu Ile Ile
      100          105          110
Thr His Ile Gly Phe Tyr Ala Gly Trp Pro Lys Ala Trp Ala Ala Phe
      115          120          125
Arg Leu Ala Lys Glu Val Trp Ala Lys Asp Thr Thr Gly Val Asp Ala
      130          135          140
Lys Ala Ala Phe Gln Arg Glu Met Ile Phe Pro Ile Gly Glu Pro Asn
145          150          155          160
Thr Ala Tyr Ala Gln Tyr Phe Thr Gly Asn Ser Tyr Leu Ala Pro Ile
      165          170          175
Ser His Glu Gln Val Asn Ile Ser Asn Val Thr Phe Glu Pro Gly Cys
      180          185          190
Arg Asn Asn Trp His Val His His Ala Lys Lys Gly Gly Gly Gln Met
      195          200          205
Leu Ile Gly Ile Ala Gly Arg Gly Trp Tyr Gln Glu Glu Gly Lys Pro
      210          215          220
Ala Val Glu Ile Leu Pro Gly Thr Val Ile His Ile Pro Ala Asn Val
225          230          235          240
Lys His Trp His Gly Ala Thr Ala Glu Ser Trp Phe Ala His Leu Ala
      245          250          255
Phe Glu Ile Pro Gly Glu Asp Ser Ser Asn Glu Trp Leu Glu Pro Val
      260          265          270
Thr Asn Lys Glu Tyr Asn Arg Leu Pro Gln
      275          280

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<210> 6684
 <211> 61
 <212> PRT
 <213> B.fragilis

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<400> 6684
Ile Asn Thr Val Pro Ser Ser Leu Leu Thr Leu Thr Ala Arg Lys Asn
1           5           10           15
Gly Gln His Asp Thr Glu Cys Lys Lys Thr Cys Arg Thr Ala Glu Arg
      20           25           30
Phe Leu Glu His Gly Thr Val Tyr Glu Pro Gly Ile Gly His Thr Gly
      35           40           45
Ala Asp Glu Ser Arg Gln Lys Lys Asn Glu Leu Phe His
      50           55           60

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<210> 6685
 <211> 74
 <212> PRT
 <213> B.fragilis

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<400> 6685
Tyr Leu Tyr Val Ala Pro Asp His Ile Lys Leu Asn Leu Gln Phe Lys
1           5           10           15

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Asn Gly Phe Tyr His Leu Lys Lys Gln Asp Asp Gly Trp Leu Thr Thr
 20 25 30
 Glu Ile Asn Leu Val Pro Phe Leu Ser Val Lys Phe Leu Thr Ala Leu
 35 40 45
 Leu Phe Ile Gln Lys Leu Phe Tyr Phe Gln Glu Leu Ile Leu Ser Asn
 50 55 60
 Gly Cys Lys Ala Leu Lys Thr Gln Ser Asn
 65 70

<210> 6686

<211> 636

<212> PRT

<213> B.fragilis

<400> 6686

Thr Phe Asn Val Ile Phe Ser Met Lys Gln Met Met Lys Lys Tyr Leu
 1 5 10 15
 Tyr Met Ala Ala Val Ala Val Val Gly Thr Gly Phe Leu Met Ser Ser
 20 25 30
 Cys Lys Asp Glu Phe Ala Gly Gln Asn Thr Asn Pro Ser Thr Val Ser
 35 40 45
 Lys Pro Asn Val Arg Tyr Leu Phe Thr Gln Cys Ala Met Ser Phe Gln
 50 55 60
 Pro Ala Asp Tyr Leu Gln Trp Phe Ala Gly Phe Asp Ala Met Ser Thr
 65 70 75 80
 Trp Val Gln Ala Thr Ala Ser Gly Gly Gly Asn Ser Ser Lys Leu Asn
 85 90 95
 Met Val Thr Gln Thr Gly Cys Gly Tyr Gln Val Asn Glu Val Leu Arg
 100 105 110
 Tyr Thr Asn Glu Ile Lys His Gln Ile Ser Leu Met Ser Asp Asp Glu
 115 120 125
 Lys Ala Lys Tyr Glu Tyr Ile Ala Tyr Leu Cys Asn Pro Met Leu Val
 130 135 140
 Tyr Leu Gly Leu Glu Asp Ser Asp Met Tyr Gly Ser Arg Gln Tyr Ser
 145 150 155 160
 Glu Ala Glu Met Ala Arg Tyr Gly Gly Thr Leu Thr Pro Lys Tyr Asp
 165 170 175
 Thr Gln Glu Glu Leu Phe Glu Leu Trp Leu Lys Gln Leu Asp Glu Thr
 180 185 190
 Ile Asn Tyr Leu Arg Glu Asn Asn Pro Gln Asp Val Leu Gly Ala Gln
 195 200 205
 Asp Phe Ile Tyr Arg Gly Lys Leu Asp Lys Trp Ala Lys Leu Ala Asn
 210 215 220
 Ser Leu Lys Leu Arg Ile Ala Ala Arg Leu Ile Asn Lys Asp Lys Ala
 225 230 235 240
 Arg Ala Ile Ala Ile Val Asn Glu Ala Ala Gln Asn Pro Ala Gly Leu
 245 250 255
 Ile Leu Thr Leu Asp Asp Asp Phe Val Phe Asn Lys Gly Lys Arg Asp
 260 265 270
 Asn Asn Trp Asn Asn Asp Ile Ser Val Gly Ala Gly Thr Lys Gln Leu
 275 280 285
 Ile Asp Phe Met Val Ser Asn Arg Asp Pro Arg Leu Phe Tyr Phe Phe
 290 295 300
 Gln Lys Asn Asp Tyr Asn Ser Asn Val Val Gln Gly Phe Phe Asp Gln
 305 310 315 320
 Lys Arg Ala Leu Pro Ser Tyr Val Glu Ala Asn Val Asn Tyr Thr Val
 325 330 335
 Asp Ala Asp Gly Lys Lys His Phe Glu Ser Trp Lys Ala Pro Gly Glu
 340 345 350

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Pro Trp Val Arg Tyr Tyr Gly Val Pro Cys Gln Val Asp Ile Asn Lys
355 360 365
Lys Glu Tyr Lys Asp Tyr Phe Asp Pro Asn Asn Glu Leu Phe Tyr
370 375 380
Leu Leu Ser Lys Asp Gly Ala Lys Lys Thr Tyr Thr Pro Ile Ala Tyr
385 390 395 400
Arg Asn Thr Glu Asn Ile Lys Gly Leu Leu Ile Tyr Thr Phe Pro Asp
405 410 415
Val Pro Asp Val Ala Pro Val Gln Asp Lys Glu Glu Tyr Gly Trp Tyr
420 425 430
Gly Leu Tyr Phe Ser Ala Gly Glu Thr Asn Leu Leu Leu Ala Glu Phe
435 440 445
Lys Leu Leu Gly Ala Asn Leu Pro Met Thr Ala Gln Gln Tyr Leu Ser
450 455 460
Ala Gly Val Glu Met Ser Val Arg Gly Tyr Asp Phe Val Ser Ala Lys
465 470 475 480
Asn His Ile Pro Tyr Tyr Asp Lys Thr Tyr Thr Gly Asp Val His Asp
485 490 495
Lys Thr Ile Ser Leu Lys Glu Gly Met Ile Asp Glu Met Leu Ser His
500 505 510
Asp Ala Tyr His Leu Thr Gly Asp Leu Ser Lys Asp Leu Glu Lys Val
515 520 525
Tyr Ile Gln Gln Tyr Ile His Tyr Leu Met Leu Pro Met Asp Met Phe
530 535 540
Val Thr Ala Arg Arg Ser Gly Val Pro Met Lys Asn Ser Thr Leu Leu
545 550 555 560
Pro Tyr Gln Asp Phe Asp Pro Leu Leu Gly Asp Gln Tyr Val Ile Pro
565 570 575
Arg Arg Phe Pro Val Ser Lys Pro Leu Asp Ser Asp Leu Leu Arg Asp
580 585 590
Ile Thr Ile Ala Ala Tyr Gln Ala Gln Gly Tyr Thr Tyr Glu Gly Glu
595 600 605
Met Ser Asn Ser Pro Val Thr Leu Ser Lys Glu Arg Val Trp Tyr Asp
610 615 620
Lys Glu Ala Pro Ala Phe Gly Thr Gly Pro Gln Gln
625 630 635

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<210> 6687

<211> 124

<212> PRT

<213> B.fragilis

<400> 6687

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Glu Val Ala Val Tyr Asp Asn Leu Pro Val Tyr Lys Ala Ala Tyr Asp
1 5 10 15
Leu Leu Arg Ser Val Tyr Glu Lys Thr Gly Lys Ile Pro Arg Asp Val
20 25 30
Lys Tyr Thr Leu Val Glu Val Leu Lys Lys Asp Leu Thr Glu Ile Met
35 40 45
Val Met Ile Tyr Arg Ala Asn Ala Thr Thr Gly Lys Leu Pro Tyr Ile
50 55 60
Glu Arg Ala Arg Asp Leu Val Val Gly Val Lys Val Arg Leu Arg Leu
65 70 75 80
Leu Gln Asp Met Arg His Ile Ser Val Lys Gln Tyr Ala Ala Phe Ala
85 90 95
Gln Gln Val Glu Leu Leu Ser Lys Gln Leu Ser Ala Trp His Asp Tyr
100 105 110
Ala Arg Arg Gln Asp Ala Lys Ser Gln Glu Lys Ile
115 120

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<210> 6688
 <211> 584
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (1), (584)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6688
 Xaa Thr Leu Phe Ile Ile Leu Phe Ser Leu Gly Tyr Ser Gly Ile Tyr
 1 5 10 15
 Ser Gln Glu Gln Gln Val Lys Lys Asp Ser Val Tyr Gln Leu Gln Glu
 20 25 30
 Ile Val Val Ser Ser Gln Gln Ile Leu Gly Ser Lys Phe Lys Ala Arg
 35 40 45
 Asn Arg Thr Gly Ser Ala Tyr Tyr Ile Ser Pro Glu Glu Ile Arg Arg
 50 55 60
 Leu Gly Tyr Thr Asp Ile Asn Arg Met Leu Lys Ala Val Pro Gly Val
 65 70 75 80
 Asn Met Tyr Glu Glu Asp Gly Phe Gly Leu Arg Pro Asn Ile Ser Leu
 85 90 95
 Arg Gly Thr Lys Ala Glu Arg Ser Glu Arg Ile Ser Ile Met Glu Asp
 100 105 110
 Gly Val Leu Ala Ala Pro Ala Pro Tyr Ser Ala Pro Ala Ala Tyr Tyr
 115 120 125
 Phe Pro Asn Val Ala Arg Met Glu Ala Ile Glu Val Leu Lys Gly Ser
 130 135 140
 Ser Gln Val Gln Tyr Gly Pro Phe Thr Thr Gly Gly Ala Ile Asn Leu
 145 150 155 160
 Val Ser Thr Pro Ile Pro Asn Ser Phe Ser Gly Lys Ala Asn Ile Ser
 165 170 175
 Tyr Gly Ser Lys Asn Thr Phe Lys Ser His Thr Ser Val Gly Ser Ser
 180 185 190
 Trp Lys His Phe Gly Tyr Met Val Glu Tyr Leu Arg Tyr Gln Ser Asp
 195 200 205
 Gly Phe Lys Lys Tyr Glu Asp His Ala Ala Lys Gly Phe Lys Arg Asn
 210 215 220
 Asp Ile Ile Ala Lys Ile Arg Val Lys Thr Asp His Val Lys Gly Val
 225 230 235 240
 Asn His Ala Leu Glu Leu Lys Phe Gly Tyr Ala Asp Glu Asn Ser Asp
 245 250 255
 Glu Thr Tyr Val Gly Leu Ser Ala Asp Asp Phe Lys Lys Thr Pro Phe
 260 265 270
 Leu Arg Tyr Ala Gly Ser Gln Met Asp Lys Leu Lys Thr Asp His Arg
 275 280 285
 Gln Trp Val Ala Thr Tyr Leu Leu Thr Phe Ser Asn Lys Leu Lys Ile
 290 295 300
 Thr Thr Asn Ala Tyr Tyr Asn Tyr Phe His Arg Asn Trp Tyr Lys Leu
 305 310 315 320
 Asn Asp Val Arg Ala Gly Ile Thr Ser Lys Glu Lys Arg Ser Ile Ala
 325 330 335
 Asp Val Leu Val Asp Pro Glu Thr Asn Ile Arg Tyr Phe Asp Ile Leu
 340 345 350
 Thr Gly Lys Thr Asp Arg Glu Gly Glu Ala Leu Leu Val Arg Ala Asn
 355 360 365
 Asn Arg Thr Tyr Arg Ser Arg Gly Ile Gln Thr Arg Ala Glu Tyr Arg

370		375		380
Phe Asn Leu Asn Glu	Phe Phe Phe Asp Leu Glu	Phe Gly Leu Arg Tyr		
385	390	395		400
His Ala Asp Glu Glu	Asp Arg Phe Gln Trp Asp	Asp Ser Tyr Ser Met		
	405	410		415
Lys Asn Lys Lys Met	Val Leu Phe Met Glu Gly	Ile His Gly Thr Asn		
	420	425		430
Ala Asn Arg Val Thr	Ser Ala Asn Ala Leu Ala	Gly Tyr Leu Leu Ala		
	435	440		445
Lys Leu Arg Tyr Asp	Ala Trp Thr Val Thr	Ala Gly Leu Arg Tyr Glu		
	450	455		460
Asp Val Asp Leu Leu	Lys Lys Asp Tyr Thr	Lys Glu Asp Leu Ala Arg		
465	470	475		480
Ser Gly Lys Val Arg	Ile Glu Thr Pro Asn	His Ala Arg Val Leu Ile		
	485	490		495
Pro Gly Val Gly Leu	His Tyr Gln Leu Met	Pro Ala Ala Ser Val Phe		
	500	505		510
Phe Gly Ile His Lys	Gly Phe Ala Pro Pro	Ser Ala Glu Leu Tyr Gln		
	515	520		525
Lys Pro Glu Ser Ser	Val Asn Met Glu Leu	Gly Thr Arg Val Ala Ile		
	530	535		540
Gly Asn Phe Arg Ala	Glu Leu Ile Gly Phe	Tyr Asn Asn Tyr Ser Asn		
545	550	555		560
Met Leu Gly Ser Asp	Leu Ala Ala Ser Gly	Gly Gly Leu His His Gly		
	565	570		575
Ala Ala Arg Ser Arg	Ala Val Xaa			
	580			

<210> 6689

<211> 61

<212> PRT

<213> B.fragilis

<400> 6689

Cys Arg His Ala Cys	Pro Ser Gly Arg Gly	Gly Pro Gly Asp Gly	Val
1	5	10	15
Cys Pro Ala Leu Gly	Thr Gly Ser Gly	Gly Asp Tyr Pro	Gly Gly Gly
	20	25	30
Thr Gly Gly Cys Asp	Gly Gly Gly Glu	Asp Leu Phe Cys	Cys Arg Phe
	35	40	45
Ser Gly Val Gly Arg	Arg Glu Trp Lys	Gly Gly Leu Glu	
	50	55	60

<210> 6690

<211> 383

<212> PRT

<213> B.fragilis

<400> 6690

Val Leu Ala Tyr Gln	Asp Ile Leu Arg Glu	Lys Asp Leu Cys Gly	Thr
1	5	10	15
Leu Cys Tyr Ser Val	Val Lys His Pro	Phe Asn His Lys	Ile Phe Pro
	20	25	30
Thr Met Ser Asp Lys	Phe Gln Thr Phe	Cys Phe Ser His	Ser Gly Ser
	35	40	45
Trp Phe Leu Pro Phe	Leu Trp Leu Ser	Leu Leu Ala Gly	Leu Ser Ala
	50	55	60
Cys Ser Trp Thr Gly	Asp Asp Arg Ser	Asp Cys Pro Ser	Gly Phe Arg
65	70	75	80

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Ile Arg Leu Gln Pro Ala Leu His Ala Gln Ile Gln Pro Asp Ser Gly
      85          90          95
Thr Gly Val Ile Thr Asp Glu Ile Asp Thr Leu Ser Leu Tyr Val Phe
      100        105        110
Asp Ala Gln Gly Gln Phe Val Cys Leu His Thr Glu Asn Arg Gln Ser
      115        120        125
Leu Thr Glu Asn Asp Tyr Ile Ile Thr Leu Pro Leu Glu Tyr Lys Asp
      130        135        140
Gly Asp Val Tyr Glu Leu Val Phe Trp Ala Gly Gly Asp Asn Arg His
      145        150        155        160
Tyr Arg Met Pro Gln Leu Thr Pro Gly Ser Ser Thr Arg Asp Glu Leu
      165        170        175
Thr Leu Arg Leu Glu Arg Asp Gly Asp Gly Arg Gln Asp Asp Glu Leu
      180        185        190
Gly His Leu Trp Tyr Gly His Leu Arg Leu Ser Arg Ile Gln Pro Ser
      195        200        205
Glu Leu Thr Ser Val Ser Val Pro Met Leu Lys Asp Ser Asn Arg Phe
      210        215        220
Val Ile Thr Leu His Asp Thr Ser Gly Gln Gly Leu Asp Ala Asp Asp
      225        230        235        240
Tyr Asp Phe Thr Leu Leu Ala Asp Asn Gly Arg Met Asn Ala Asp Asn
      245        250        255
Glu Val Met Thr Gly Asp Arg Val Thr Tyr Ala Ala Tyr His Thr Glu
      260        265        270
Ser Ala Ser Glu Thr Glu Pro Ala Ala Thr Arg Thr Gly Glu Val Ser
      275        280        285
Leu Ala Arg Ala Arg Leu Asn Thr Leu Arg Leu Leu Ala Asp Gln Glu
      290        295        300
Ala Arg Leu Val Val Thr Asp Arg Val Ser Gly Gln Lys Val Val Asp
      305        310        315        320
Val Asp Leu Thr Arg Tyr Leu Leu Met Thr Arg Pro Leu Phe Glu Glu
      325        330        335
Ser Asn Gly Val Glu Leu Ser Asp Gln Asp Tyr Leu Asp Tyr Glu Asp
      340        345        350
Arg Phe Asn Val Ile Phe Tyr Leu Thr Pro Met Gly Lys Leu Glu Ala
      355        360        365
Leu Asn Ile Asn Gly Trp Ile Ile Arg Leu Asn Asp Ala Gln Leu
      370        375        380

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<210> 6691

<211> 292

<212> PRT

<213> B.fragilis

<400> 6691

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Arg Lys Lys Glu Met Lys Lys Leu Lys Tyr Met Ser Met Met Gly Leu
1      5      10      15
Ala Ala Leu Leu Leu Thr Thr Trp Ala Ala Cys Ser Asp Asp Thr Asp
      20      25      30
Ala Ser Gly Gly Glu Asn Pro Glu Glu Ala Arg Ala Tyr Thr Thr Val
      35      40      45
Thr Ile Ala Val Pro Asn Gly Val Ala Glu Thr Arg Ala Ser Asp Pro
      50      55      60
Thr Ala Asp Thr Asp Asp Thr Asn Met Asp Ile Gly Leu Thr Asp Glu
      65      70      75      80
Tyr Lys Val Thr Lys Ala Asn Leu Tyr Leu Phe Pro Gly Gly Thr Gly
      85      90      95
Ser Ser Phe Gly Ser Ala Lys Leu Thr Glu Ile Ile Ser Ile Ser Gln
      100     105     110

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Phe Thr Gln Thr Thr Thr Thr Thr Thr Asp Gln Lys Thr Ile Val Trp
    115                                120                125
Thr Ser Lys Lys Thr Ala Leu Thr Pro Gly Asp Tyr Arg Ile Tyr Ile
    130                                135                140
Val Val Asn Gly Thr Val Asn Gly Val Gly Asp Ser Asp Lys Gly Thr
    145                                150                155                160
Leu Thr Glu Ala Ala Phe Leu Ala Lys Thr Thr Ala Ala Ala Thr Ser
    165                                170                175
Val Ile Ala Ala Val Pro Ser Asp Gly Leu Val Met Ala Ser Arg Ser
    180                                185                190
Pro Asn Ser Asn Asn Ser Asn Thr Leu Pro Tyr Ile Ala Gln Glu Ile
    195                                200                205
Thr Lys Asp Pro Glu Gln Thr Ile Ala Ala Thr Val Glu Arg Val Met
    210                                215                220
Gly Lys Ile Thr Val Thr Ala Gly Gly Thr Ser Ala Ser Ser Ala Ala
    225                                230                235                240
Thr Val Asn Lys Tyr Thr Ser Phe Ser Thr Thr Val Ala Gln Ile Asn
    245                                250                255
Asn Ile Lys Asp Ile Thr Leu Lys Thr His Tyr Val Val His Ala Gly
    260                                265                270
Lys Glu Gly Tyr Tyr Phe Arg His Val Asp Lys Glu Ser Ser Ala Thr
    275                                280                285
Asn Pro Leu Thr
    290

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<210> 6692

<211> 250

<212> PRT

<213> B.fragilis

<400> 6692

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Gln Ile Arg Glu Arg Met Ile Lys Leu Ile Leu Pro Pro Pro Val Leu
1      5      10      15
Ala Asn Ser Tyr Gly Asn Trp Tyr Leu Gln Gly Ser Ser Ala Phe Gly
20     25     30
Leu Ser Ser Phe Gly Thr Phe Ser Gly Thr Tyr Thr Asp Met Pro Gly
35     40     45
Tyr Ser Ser Gly Ala Val Glu Thr Lys Val Ala Ala Tyr Cys Tyr Glu
50     55     60
Asn Thr Met Leu Lys Asp Lys Gln Lys Asn Gly Tyr Thr Thr Gly Ile
65     70     75     80
Val Phe Lys Ala Glu Ile Ala Pro Ser Lys Met Met Lys Lys Arg Ser
85     90     95
Ser Gly Gly Gly Val Glu Glu Thr Thr Thr Ile Gly Ser Ile Gly Glu
100    105    110
Ile Phe Tyr His Ser Gly Ile Phe Tyr Lys Asp Ile Glu Ala Leu Lys
115    120    125
Glu Ala Gly Val Leu Leu Ala Asp Gly Thr Thr Ser Ser Ser Ala Ser
130    135    140
Gly Val Pro Ala Asp Leu Lys Lys Asn Asp Val Gln Cys Phe Lys Lys
145    150    155    160
Gly Asn Thr Asp Gly Lys Phe Phe Cys Tyr Tyr Pro Tyr Trp Ile Lys
165    170    175
His Leu Pro Ser Asp Thr Ala Glu Asp Val Met Glu Phe Gly Ile Val
180    185    190
Arg Asn Asn Val Tyr Gln Val Thr Val Ala Ser Ile Gln Gly Val Gly
195    200    205
Lys Asp Gly Val Thr Glu Asn Ile Ile Thr Asp Thr Glu Thr Asp Asp
210    215    220

```

Pro Thr Thr Val Leu Leu Asn Val Lys Leu Ser Ile Lys Pro Trp Val
 225 230 235 240
 Val Arg Ala Asn Ser Ala Val Leu Gly Arg
 245 250

<210> 6693

<211> 495

<212> PRT

<213> B.fragilis

<400> 6693

Ile Ser Gly Ser Glu Gln Glu Lys Phe Ser Gly Ala Asp Pro Cys Gly
 1 5 10 15
 His Gln Ser Asp Leu Tyr Val Lys Ile Lys Ser Leu Met Lys Glu Lys
 20 25 30
 Ile Arg Ser Thr Arg Leu Arg Met Cys Phe Arg Lys Met Pro Pro Ala
 35 40 45
 Val Cys Phe Leu Thr Leu Phe Ala Leu Cys Phe Gly Ala Leu Ser Val
 50 55 60
 Arg Ala Ala Asp Pro Ser Gly Arg Val Ala Leu Ser Ala Val Arg Met
 65 70 75 80
 Gln Arg Ala Gly Gly Gln Val Tyr Val Ser Phe Ala Val Lys Ile Ala
 85 90 95
 Pro Arg Ala Val Arg Ala Arg His Arg Trp Val Ile Thr Pro Cys Leu
 100 105 110
 Gly Asn Ala Ser Asp Ser Val Leu Leu Gly Pro Phe Val Val Thr Gly
 115 120 125
 Arg Ile Met Ala Arg Glu Glu Asn Gln Arg Arg Leu Leu Ala Gly Leu
 130 135 140
 Pro Asp Arg Asp Val Asn His Arg Trp Thr Ala Arg Asn Gly Asp Thr
 145 150 155 160
 Phe Leu Tyr Thr Asp Thr Leu Arg Tyr Ala Pro Trp Met Glu Asn Gly
 165 170 175
 Leu Asn Leu Arg Leu Asp Ile Asp Arg Glu Gly Cys Cys Arg Val Gln
 180 185 190
 Thr Val Gly Ser Ile Val Ser Ser Gly Ala Phe Pro Val Ala Leu Pro
 195 200 205
 Tyr Arg Pro Ser Val Ser Glu Leu Thr Pro Arg Val Ser Arg Thr Val
 210 215 220
 Ala Glu His Ala Asp Asp Tyr Pro Phe Leu Cys Glu Ala Gly Ser Arg
 225 230 235 240
 Pro Leu His Glu Ser Gly Ile Gly Ile Arg Phe Arg Ala Ala Ser Ala
 245 250 255
 Val Val Asp Thr Leu Tyr Ser Ala Asn Ala Gly Asn Leu Arg Arg Ile
 260 265 270
 Thr Glu Ala Ile Gly Leu Leu Arg Ala Asp Ser Cys Ala Phe Leu Gln
 275 280 285
 Gly Ile Ser Ile Ser Gly Tyr Ala Ser Pro Glu Gly Thr Thr Gly Leu
 290 295 300
 Asn Arg Lys Leu Ser Ala Lys Arg Ala Glu Ala Leu Arg His Ala Leu
 305 310 315 320
 Ser Val Arg Met Asn Leu Pro Val Ser Leu Phe Glu Leu Asn Ala Gly
 325 330 335
 Gly Val Asp Trp Asp Arg Leu Ala Glu Leu Val Asn Gly Ser Asp Met
 340 345 350
 Thr Tyr Lys Glu Glu Val Leu Ala Ile Leu Arg Ser His Pro Glu Glu
 355 360 365
 Glu Arg Asn Asp Arg Leu Lys Ala Leu Ala Gly Gly Arg Pro Tyr Arg
 370 375 380

```

Ser Val Leu Asp Val Leu Tyr Pro Gln Leu Arg Asp Ala Cys Tyr Ile
385                390                395                400
Arg Val Gln Tyr Ala Asn Arg Pro Asp Ser Val Ala Asp Thr Val Asn
                405                410                415
Arg Ala Ile Glu Ala Ile Arg Gly Arg Lys Tyr Glu Glu Ala Phe Arg
                420                425                430
Leu Leu Lys Thr Val Glu Ala Asp Glu Arg Ser Trp Asn Val Arg Gly
                435                440                445
Val Cys His Leu Leu Cys Gly Asp Asp Lys Glu Ala Gly Leu Trp Leu
                450                455                460
His Arg Ala Val Lys Ala Gly Asn Arg Glu Ala Glu Glu Asn Leu Lys
465                470                475                480
Lys Met Asn Ala Glu Arg Arg Ala Ala Thr Ile Gly Ile Thr Gln
                485                490                495

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<210> 6694
<211> 112
<212> PRT
<213> B.fragilis

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<400> 6694
Ala Pro Leu Leu Pro Leu Ser Ser His Ser Thr Asp Thr Phe Leu Gly
1                5                10                15
Val His Ala Gly Gly Gly Glu Ser Asn Leu Ser Arg Val His Leu Leu
                20                25                30
Phe Val Ser Arg Trp Val Ser Ser Arg Tyr Glu Gly Trp Ala Leu Met
                35                40                45
Pro Gly Phe Ser Ser Gly Tyr Ser Trp Val Leu Gly Lys Arg Trp Asn
                50                55                60
Leu Glu Ala Thr Ile Gly Ala Gly Trp Val His Ala Gln Tyr Lys Arg
65                70                75                80
Phe Asn Cys Pro Val Cys Gly Glu Tyr Arg Gly Ala Asn Lys Lys Asn
                85                90                95
Phe Leu Ala Pro Thr Arg Ala Gly Ile Ser Leu Ile Tyr Met Leu Lys
                100                105                110

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<210> 6695
<211> 344
<212> PRT
<213> B.fragilis

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<400> 6695
Arg Thr Ala Ser Pro Phe Ser Pro Ser Gly Thr Ala Ser Val Asn Gly
1                5                10                15
Arg Ser Met Lys Ser Ser Glu Asp Ser Lys Arg Ser Val Arg Ser Met
                20                25                30
Gln Tyr Lys Cys Arg Pro Phe Phe Val Phe Met Gly Lys Thr Glu Glu
                35                40                45
Phe Cys Cys Pro Glu Ile Gln Thr His Ile Leu His Asp Lys Met Ile
                50                55                60
Met Lys Lys Glu Lys Thr Tyr Ser Arg Ala Pro Leu Pro Phe Val Gly
65                70                75                80
Gln Lys Arg Met Phe Val Ser Glu Phe Lys Lys Ile Leu Lys His Phe
                85                90                95
Asp Asp Lys Thr Ile Phe Val Asp Leu Phe Gly Gly Ser Gly Leu Leu
                100                105                110
Ser His Ile Thr Lys Arg Glu Arg Pro Asp Ala Val Val Ile Tyr Asn
                115                120                125
Asp His Asp Asn Tyr Arg Glu Arg Leu Glu Asn Ile Asp Arg Thr Asn

```

130		135		140
Thr Leu Leu Arg Asp Leu Arg Lys Ile Val Gly Ile Tyr Pro Arg His				
145		150		155
Gln Lys Ile Thr Gly Lys Met Arg Glu Ala Phe Leu Glu Arg Ile Arg				160
		165		170
Leu Glu Glu Thr Thr Gly Phe Val Asp Tyr Leu Thr Leu Ser Thr Ser				175
		180		185
Leu Leu Phe Ser Gly Lys Tyr Ala Gln Asn Met Glu Glu Leu Glu Gly				190
		195		200
Leu Tyr Phe Tyr Asn Lys Ile Arg Gln Ser Asp Tyr Arg Cys Asp Gly				205
		210		215
Tyr Leu Asp Gly Leu Glu Val Val Cys Tyr Asp Tyr Lys Glu Leu Ala				220
225		230		235
Asp Thr Tyr Gly Val Phe Pro Gly Val Val Phe Leu Val Asp Pro Pro				240
		245		250
Tyr Met Gly Thr Asp Ile Ser Thr Tyr Lys Met Asp Trp Lys Leu Ala				255
		260		265
Asp Tyr Leu Asp Val Leu Leu Val Leu Lys Gly His Pro Phe Val Tyr				270
		275		280
Phe Thr Ser Gly Lys Ser Pro Ile Leu Asp Phe Cys Arg Trp Met Glu				285
		290		295
Glu His Pro Gly Ile Gly Asn Pro Phe Lys Gly Ala Gly Arg Ser Thr				300
305		310		315
Leu Thr Ala Arg Met Asn Tyr Asn Ser Ser Tyr Thr Asp Ile Met Leu				320
		325		330
Tyr Lys Asp Leu Pro Arg Ala Ala				335
		340		

<210> 6696
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 6696
Ala Arg Gly Thr Thr Thr Tyr Ile Gln Phe Ile Thr Leu Ser Ala His
1 5 10 15
Ser Met Val Arg Ala Thr Thr Val Ala Pro Ser Leu Leu Phe Lys Val
20 25 30
Ile Pro Val Gln Ala Pro Ala Gly Ile Cys Gly Thr Leu His Lys Thr
35 40 45
Asp Ile Asn Asn Ala Asp Asn Phe Val Phe Ile Leu Ser Ile Leu Met
50 55 60
Val Val Tyr Gly Ser Val Thr His Ser Ile Pro Glu Arg Leu Ile Thr
65 70 75 80
Ile Glu Ser Asn Tyr Ser Phe
85

<210> 6697
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 6697
Asn Leu Lys Thr His Lys Glu Val Thr Ser Asn Lys Ser Lys Thr Leu
1 5 10 15
Asp Phe Val Ile Ser Lys Thr Met Lys Ile Phe Arg Tyr Ile Leu Leu
20 25 30
Ala Ser Leu Thr Cys Thr Leu Phe Ser Cys Gly Pro Asp Glu Leu Ile
35 40 45

Pro Glu Ser Val Pro Pro Val Val Asn Pro Gly Asp Lys Asp Glu Pro
 50 55 60
 Gly Glu Glu Pro Glu Glu Pro Glu Glu Pro Glu Lys Ile Gln Leu Ala
 65 70 75 80
 Ile Thr Ala Ser Leu Gln Asn Met Gln Gln Thr Arg Gly Ile Ile Glu
 85 90 95
 Ala Phe Ala Pro Gly His Glu Met Gly Val Phe Val Gly Thr Ser Gln
 100 105 110
 Thr Asp Glu Ala Ala Gly Ile Lys Asn Ala Ser Tyr Leu Phe Asp Gly
 115 120 125
 Lys Val Trp Asn Ala Gly Gln Asp Val Pro Val Glu Ala Asp Ala Gly
 130 135 140
 Leu
 145

<210> 6698
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 6698
 His Thr Asp Ala His His Arg Thr Thr Gly Gly Lys Tyr Pro Cys Arg
 1 5 10 15
 Gly Met Arg Phe Tyr Leu Tyr Met Asn Asp Trp Leu Cys Lys Asp Lys
 20 25 30
 Lys Ile Phe Ala Met Thr Leu Phe Glu Ile Leu Asn Phe Asn Arg Glu
 35 40 45
 Leu Leu Glu Arg Leu Thr Arg Met Gly Phe Lys Pro Asp Asp Tyr Lys
 50 55 60
 Tyr Ile Asp Leu Tyr Lys Glu Tyr Glu Gln Met Arg Arg Gln Gly Asp
 65 70 75 80
 Lys Val Thr Tyr Cys Val Ala Val Leu Ser Ile Arg His Gly Val Cys
 85 90 95
 Glu Arg Lys Ile Tyr Glu Ile Val Gly Arg Phe Lys Lys Glu Cys Thr
 100 105 110
 Leu His Ala Val
 115

<210> 6699
 <211> 366
 <212> PRT
 <213> B.fragilis

<400> 6699
 Thr Thr Ile Lys Ile Glu Ser Met Asn Thr Lys Leu Ser Ala Leu Leu
 1 5 10 15
 Met Ser Val Leu Cys Ser Val Pro Gln Ile Pro Ala Gly Ala Cys Thr
 20 25 30
 Gly Ile Thr Leu Lys Ser Lys Asp Gly Ala Thr Val Val Ala Arg Thr
 35 40 45
 Ile Glu Trp Ala Glu Ser Val Met Asn Cys Met Tyr Val Val Val Pro
 50 55 60
 Arg Ala Gln Glu Leu Gln Ser Leu Thr Pro Ser Gly Met Asp Gly Leu
 65 70 75 80
 Lys Phe Arg Ala Lys His Gly Phe Val Gly Leu Ala Val Glu Gln Lys
 85 90 95
 Glu Phe Val Val Glu Gly Met Asn Glu Lys Gly Leu Ser Ala Gly Leu
 100 105 110
 Tyr Tyr Phe Pro Asn Tyr Gly Arg Tyr Pro Val Tyr Asp Ala Ala Gln

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      115              120              125
Arg Asp Lys Ser Leu Ala Asp Phe Gln Leu Val Ser Tyr Val Leu Ala
  130              135              140
Glu Cys Ser Thr Val Asp Glu Val Lys Glu Ala Leu Ser Gln Val Arg
145              150              155              160
Val Ile Asn Ile Asp Pro Arg Ser Ser Thr Val His Trp Arg Phe Thr
      165              170              175
Glu Ala Ser Gly Arg Gln Val Val Leu Glu Ile Val Asn Glu Met Met
      180              185              190
Asn Phe Tyr Asp Asn Pro Leu Gly Val Leu Thr Asn Ser Pro Gly Leu
      195              200              205
Glu Trp His Trp Thr Asn Leu Asn Asn Tyr Ile Asn Leu Gln Pro Gly
      210              215              220
Thr Leu Pro Glu His Asn Phe Gly Pro Leu Glu Pro Lys Ser Phe Gly
225              230              235              240
His Gly Ser Gly Leu Leu Gly Leu Pro Gly Asp Phe Thr Pro Pro Ser
      245              250              255
Arg Phe Val Arg Ala Thr Phe Phe Gln Leu Thr Ala Pro Gln Gln Pro
      260              265              270
Asp Ala Lys Gly Ser Val Phe Gln Ala Phe His Ile Leu Asn Asn Phe
      275              280              285
Asp Ile Pro Thr Gly Ser Glu Gln Pro Trp Gly Lys Ala Ser Ala Asn
      290              295              300
Val Pro Ser Ala Thr Gln Phe Thr Val Ala Cys Asp Ile Arg Asp Gln
305              310              315              320
Lys Val Tyr Tyr Arg Thr Met Tyr Asn Ser Asn Ile Arg Cys Ile Asp
      325              330              335
Leu Lys Thr Ile Asn Phe Asp Asn Val Lys Tyr Gln Ala Asp Pro Leu
      340              345              350
Asp Glu Thr Lys Glu Gln Pro Val Glu Met Lys Val Ile Lys
      355              360              365

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<210> 6700
<211> 62
<212> PRT
<213> B.fragilis

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<400> 6700
Lys Val Thr Lys Leu Asn Gln Ile Ala Leu Leu Tyr Ile Pro Thr Leu
1      5      10      15
Cys Gly Leu Tyr Thr Ser Phe Val Ala Phe Val Val Leu Gln His Ser
      20      25      30
Gln Ser Ala Asn His Arg Thr Val Tyr Met Ala Asn Gly Lys Glu Asn
      35      40      45
Val Lys Arg Asn Arg Met Lys Gly Ser Asp Lys Thr Lys Tyr
      50      55      60

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<210> 6701
<211> 141
<212> PRT
<213> B.fragilis

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<400> 6701
Leu Asn Lys Lys Lys Leu Ser Phe Leu Phe Leu Lys Val Ile Ile Thr
1      5      10      15
Glu Ala Ile Lys Gln Leu Phe Ser Ser His Thr Phe Gln Thr Leu Ser
      20      25      30
Leu Glu Ser Arg Thr Leu Leu Asp Glu Tyr Asn Phe Thr Lys Ser Met
      35      40      45

```



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Ile Ala Asn Leu Leu Asp Lys Gln Glu Lys Leu Tyr Leu Val Pro Ser
 50          55          60
Thr Lys Lys Glu Asn Glu Leu Leu Ala Gly Ile Ile Leu Asn Asp Glu
65          70          75          80
Ile Ile Tyr Leu Leu Lys Phe Ser Lys Ala Ser Asp Asn Ile Tyr Thr
          85          90          95
Leu Tyr Asn Glu Thr Asn Glu Pro Ile Cys Asp Val Lys Tyr Asp Phe
          100          105          110
Glu Lys Gln Asn Ile Val Ile Ile Ser Asn Tyr Gly Asn Asp Ala Ile
          115          120          125
Pro Pro Thr Thr Gln Val Gly Thr Val Leu Phe Val Ile
          130          135          140

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<210> 6702

<211> 271

<212> PRT

<213> B.fragilis

<400> 6702

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Ser Arg Arg Cys Lys Arg Met Lys Thr Ile Thr Thr Ala Cys Val Asn
1          5          10          15
His Lys Gly Gly Val Ala Lys Thr Thr Ser Leu Leu Asn Leu Ala Ala
          20          25          30
Gly Ile Ala Arg Met Tyr Lys Lys Arg Val Cys Ile Ile Asp Ala Asp
          35          40          45
Pro Gln Ala Asn Thr Thr Met Ala Ala Phe Gly Glu Glu Met Ala Ser
          50          55          60
Leu Pro Arg Glu Val Leu Leu Glu Ser Ala Leu Gln Asp Cys Met Gln
65          70          75          80
Asp Thr Pro Pro Glu Leu Lys Pro Gln Lys Trp Leu Glu Lys Val Asp
          85          90          95
Ile Leu Pro Ala Ser Leu Asp Leu Ala Ala Thr Glu Val Ile Met Tyr
          100          105          110
Thr Thr Pro Gly Arg Glu Phe Leu Phe Arg Glu Ile Val Lys Gly Leu
          115          120          125
Glu Glu Lys Tyr Asp His Ile Leu Ile Asp Cys Pro Pro Ser Leu Gly
          130          135          140
Ile Ile Thr Gln Asn Ala Leu Met Ala Ser Asp Tyr Val Ile Ile Pro
145          150          155          160
Thr Asp Gly Asn Tyr Phe Ala Met Lys Gly Ile Glu Lys Ile His Tyr
          165          170          175
Ile Ile Gly Leu Leu Lys Arg Lys Leu Gly Ala Glu Val Arg Ile Leu
          180          185          190
Gly Tyr Phe Met Thr Lys Tyr Asn Ala Arg Arg Lys Leu Asp Met Asp
          195          200          205
Ile Arg Glu Ser Leu Val Arg Ser Leu Gly Asp Gly Val Phe Glu Thr
          210          215          220
Val Ile Arg Ser Asn Val Ala Leu Gly Glu Ala Gln Tyr Lys Ala Gln
225          230          235          240
Ser Ile Phe Asp Tyr Ala Pro Ser Ser Asn Gly Ala Asp Asp Tyr Arg
          245          250          255
Glu Leu Val Lys Glu Phe Leu Gly Arg Ile Lys Lys Ile Asn Lys
          260          265          270

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<210> 6703

<211> 97

<212> PRT

<213> B.fragilis

<400> 6703

Lys Lys Gly Arg Ile Met Lys Asp Phe Thr Ser Lys Gly Ile Ser Leu
 1 5 10 15
 Glu Asn Met Val Gly Glu Thr Pro Gly Lys Glu Lys Gly Met Thr Gly
 20 25 30
 Lys Thr Ser Pro Lys Thr Asn Gln Thr Val Ala Leu Thr Glu Asp Leu
 35 40 45
 Lys Trp Glu Leu Arg Thr Phe Ala Ser Asp His Arg Cys Arg Gly Val
 50 55 60
 Lys Thr Leu Leu Glu Thr Met Ile Glu Cys Phe Val Arg Glu Asp Gly
 65 70 75 80
 Thr Leu Asp Arg Asp Lys Leu Glu Gly Phe Trp Arg Glu Tyr Val Glu
 85 90 95
 Lys

<210> 6704

<211> 522

<212> PRT

<213> B.fragilis

<400> 6704

Leu Tyr Thr Met Lys Lys Ile Ser Ile Leu Ile Ala Ala Leu Thr Leu
 1 5 10 15
 Ser Ile Ser Leu Lys Pro Leu Ala Ala Gln Asn Lys Lys Val Phe Ile
 20 25 30
 Ile Asp Lys Gln Thr Val Tyr Gln Glu Ile Asp Asn Phe Ser Ala Ser
 35 40 45
 Asp Ala Trp Arg Cys Ala Phe Ile Gly Lys Asn Trp Pro Gln Glu Lys
 50 55 60
 Lys Glu Lys Ile Ala Asp Leu Leu Phe Lys Arg Glu Phe Asp Glu Lys
 65 70 75 80
 Gly Asn Pro Ile Gly Met Ala Leu Thr Asn Trp Arg Val Asn Ile Gly
 85 90 95
 Ala Gly Ser Tyr Glu Asn Arg Glu Ala Lys Glu Val Asp Asn Ser Trp
 100 105 110
 Asn Arg Thr Glu Cys Phe Leu Ser Pro Asp Gly Lys Tyr Asp Phe Thr
 115 120 125
 Lys Gln Ala Gly Gln Gln Trp Phe Met Lys Ala Ala Arg Glu Arg Gly
 130 135 140
 Met Asn Asn Phe Leu Phe Phe Thr Asn Ser Ala Pro Tyr Phe Met Thr
 145 150 155 160
 Arg Ser Ala Ser Thr Val Ser Thr Asp Gln Asp Cys Ile Asn Leu Gln
 165 170 175
 Asn Asp Lys Phe Asp Asp Phe Ala Arg Phe Leu Val Lys Ser Ala Gln
 180 185 190
 His Phe Arg Glu Gln Gly Phe His Val Asn Tyr Ile Ser Pro Asn Asn
 195 200 205
 Glu Pro Asn Gly Gln Trp His Ala Asn Ser Phe Gln Glu Gly Ser Phe
 210 215 220
 Ala Thr Lys Ala Asp Leu Tyr Arg Met Val Glu Glu Leu Asp Lys Ala
 225 230 235 240
 Ile Ser Glu Ala Gln Ile Asp Thr Lys Ile Leu Ile Pro Glu Val Gly
 245 250 255
 Asp Met Lys Tyr Leu Phe Glu Ile Asp Ser Ile Ala Lys Ile Pro Asp
 260 265 270
 Asp Ile Ile His Ser Met Phe Tyr Lys Asp Gly Gln Tyr Ser Val Leu
 275 280 285
 Lys Phe Lys Asn Leu Phe Asn Cys Val Ala Ala His Asp Tyr Trp Ser

290 295 300
 Ala Tyr Pro Ala Thr Leu Val Asp Ile Arg Asn Arg Ile His Lys
 305 310 315 320
 Glu Leu Ser Ala Asn Gly His Asn Thr Lys Phe Trp Ala Ser Glu Tyr
 325 330 335
 Cys Ile Leu Glu Lys Asn Glu Glu Ile Thr Met Pro Ala Ser Pro Glu
 340 345 350
 Arg Ser Ile Asn Leu Gly Leu Tyr Val Ala Arg Ile Ile His Asn Asp
 355 360 365
 Leu Thr Leu Ala Asn Ala Ser Ala Trp Gln Trp Trp Thr Ala Val Ser
 370 375 380
 Leu Gly Glu Asp Val Pro Ile Gln Leu Leu Pro Leu Glu Gly Ser Asn
 385 390 395 400
 Gly Leu Ser Leu Gln Tyr Asp Gly Glu Ile Ser Thr Thr Lys Met Leu
 405 410 415
 Trp Thr Thr Ala Asn Tyr Ser Phe Phe Val Arg Pro Gly Met Lys Arg
 420 425 430
 Ile Ala Val Lys Pro Thr Tyr Lys Val Ser Asp Leu Glu Ala Ala Thr
 435 440 445
 Ser Leu Met Ile Ser Ser Tyr Thr Asp Gly Lys Glu Val Val Thr Val
 450 455 460
 Ala Ile Asn Tyr Ser Lys Glu Asn Gln Val Ile Ser Leu Asn Cys Asp
 465 470 475 480
 His Ala Gln Lys Gly Lys Val Tyr Leu Thr Thr Ile Asp Lys Asn Leu
 485 490 495
 Arg Tyr Met Gly Glu Gln Pro Leu Lys Lys Leu Gln Leu Pro Ala Arg
 500 505 510
 Ser Val Ala Thr Ile Val Val Glu Asp Asn
 515 520

<210> 6705

<211> 73

<212> PRT

<213> B.fragilis

<400> 6705

Ser Val Phe Val Ala Ser Met Lys Arg Gln Gly Val Glu Val His Phe
 1 5 10 15
 Arg His Met Glu Gln Ser Asn Lys Leu Gln Asp Ile Val Phe Thr Met
 20 25 30
 Asp Ser Tyr His Phe Asn Gly Ser Lys Val Gly Arg Arg Phe Ser Tyr
 35 40 45
 Ser Lys Phe Gly Thr Thr Leu Phe Ser Trp Ala Val Pro Pro Leu Phe
 50 55 60
 Ala Ser Gly Ser Leu Cys Cys Arg Ile
 65 70

<210> 6706

<211> 422

<212> PRT

<213> B.fragilis

<400> 6706

Lys Thr Lys Val Arg Phe Leu Arg Ala Trp Arg Tyr Tyr Met Met Val
 1 5 10 15
 Thr Ala Tyr Gly Asp Ile Pro Leu Val Thr Glu Val Val Pro Ser Leu
 20 25 30
 Glu Asp Ala Lys Leu Pro Ala Asn Pro Glu Thr Asp Val Val Glu Phe
 35 40 45

```

Ile Leu Asp Glu Leu Asn Asp Ile Thr Lys Asp Gly Ala Leu Asp Val
 50                      55                      60
Ser Pro Lys Gln Lys Gly Arg Ile Thr Arg Gly Ala Ala Leu Ala Leu
65                      70                      75                      80
Lys Val Arg Leu Cys Leu Phe Tyr Lys Lys Tyr Asp Glu Val Ile Asp
                      85                      90                      95
Ala Ala Asn Glu Ile Asn Ser Leu Gly Val Tyr Asn Leu Tyr Gln Glu
                      100                      105                      110
Gly Glu Val Pro Tyr Ser Glu Leu Phe Lys Glu Ala Asn Glu Asp Asn
                      115                      120                      125
Cys Glu Ile Ile Leu Ala Val Lys Lys Val Met Asn Asp Tyr Lys Asn
                      130                      135                      140
Gln Thr Ile Ile Glu Phe Cys Asn Val Ile Asp Gly Gly Trp Ser Ala
145                      150                      155                      160
Phe Val Pro Ile Gln Ser Leu Ile Asp Ala Tyr Glu Met Lys Asp Gly
                      165                      170                      175
Leu Thr Ile Glu Glu Ala Gln Ala Lys Gly Glu Tyr Asn Pro Glu His
                      180                      185                      190
Pro Tyr Lys Asp Arg Asp Pro Arg Phe Tyr Ala Thr Ile Leu Tyr Ser
                      195                      200                      205
Gly Ala Asp Trp Met Asp Asn Lys Gly Arg Lys Arg Ile Tyr Asn Thr
210                      215                      220
Leu Asp Arg Asn Ile Asn Gly Glu Pro Asn Lys Asp His Arg Leu Asp
225                      230                      235                      240
Ser Arg Asn Ala Ser Gln Thr Ser Tyr Ser Ile Cys Lys Tyr Met Lys
                      245                      250                      255
Pro Leu Thr Gln Tyr Ser Asp Ile Asn Asn Thr Gly Leu Asp Met Ile
                      260                      265                      270
Val Phe Arg Tyr Ala Glu Ile Leu Leu Ser Lys Ala Glu Ala Met Ile
275                      280                      285
Glu Lys Asn Thr Asp Leu Ser Gly Ala Thr Asp Leu Ile Asp Leu Ile
290                      295                      300
Arg Glu Arg Ala Gly Met Pro Lys Val Asp Arg Ala Lys Tyr Asn Thr
305                      310                      315                      320
Gln Ala Lys Leu Arg Glu Leu Leu Arg Arg Glu Arg Arg Val Glu Phe
                      325                      330                      335
Ala Phe Glu Gly Leu Arg Arg Asp Asp Ile Ile Arg Trp Asp Ile Ala
                      340                      345                      350
Lys Asp Val Leu Asn Gly Pro Ile Tyr Ala Ser Asn Gln Gly Thr Val
355                      360                      365
Asp Met Asp Thr Ser Ile Pro Gln Glu Glu Arg Ala Thr Ile Phe Gln
370                      375                      380
Gly Glu Lys Asn Gln Val Val Leu Glu Ile Arg Lys Phe Arg Asn Arg
385                      390                      395                      400
Tyr Met Pro Ile Pro Gln Ala Glu Leu Asp Lys Asn Pro Asn Leu Lys
                      405                      410                      415
Gln Thr Asn Phe Lys Ile
                      420

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<210> 6707

<211> 81

<212> PRT

<213> B.fragilis

<400> 6707

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Pro Val Leu Ser Leu His Leu Cys Ile Tyr Tyr Ser Phe Ser Tyr Ser
1                      5                      10                      15
Lys Tyr His Ser Val Phe Pro Lys Asp Thr Asn His Ile Lys Ile Pro
                      20                      25                      30

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```

Asp Ser Arg His Gly His Arg Gly Gly Ile Asn Lys Trp Thr Tyr Leu
      35              40              45
Phe Ile Lys Ser Ser Thr Arg Pro Met Ala Tyr Gln Pro Asp Gly Asp
      50              55              60
Arg Gly Gln Asn Leu Asn Pro Ile Leu Asn Val Gly Ala Ala Ser Thr
      65              70              75              80
Leu

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<210> 6708
<211> 152
<212> PRT
<213> B.fragilis

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<400> 6708
Ile Asn Lys Ser Ile Tyr Leu Tyr Leu Pro Gly Val Arg Asp Gly Cys
1              5              10              15
Arg Gly Phe Leu Cys Asp Trp Tyr Leu Trp Glu Arg Leu Asn Gly Ile
      20              25              30
Trp Asn Met Lys Lys Ser Asn Ile Tyr Ile Gly Glu Val Ile Lys Gln
      35              40              45
Val Ile Ala Glu Lys Gln Val Thr Lys Ala Glu Leu Ala Arg Arg Leu
      50              55              60
Gly Val Lys Pro Gln Ser Val Asp Tyr Leu Leu Thr Arg Lys Ser Ile
      65              70              75              80
Asp Thr Asp Thr Leu Tyr Ser Leu Ser Leu Ala Leu Asp Tyr Asp Phe
      85              90              95
Ala Val Leu Tyr Ser Ile Lys Lys Glu His Ala Leu Ala Thr Asp Glu
      100              105              110
Glu Ser Pro Phe Lys Val Gly Asn Ala Lys Ile Ser Leu Glu Ile Glu
      115              120              125
Leu Arg Pro Asp Glu Met Leu Lys Leu Asn Leu Lys Gln Lys Ile Ala
      130              135              140
Asp Leu Leu Glu Gly Lys Gly Lys
      145              150

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<210> 6709
<211> 749
<212> PRT
<213> B.fragilis

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<400> 6709
Arg Arg Tyr Leu Pro Pro Ala Ile Asn Phe Val Ser Asn Cys Ile Thr
1              5              10              15
Ile Asp Thr Lys Leu Leu Ser Glu Ala Asp Thr Gly Ser Gln Leu His
      20              25              30
Gly Lys Arg Thr Asn Ile Thr Ala Arg His Pro Met Thr Val Ile Arg
      35              40              45
Cys Arg Ile Phe Phe Val His Gln Phe Gly Pro Gly Asn Ala Ser Phe
      50              55              60
Ser Pro Gly Leu Ile Gln Glu Ile Asp Asn Arg Gly Thr Gln Arg Lys
      65              70              75              80
Met Leu Val His Arg Pro Val Asp Thr Ser Glu Gly Phe Pro Ala Ser
      85              90              95
Val Glu Ile Val Ser Ile Phe Asn Val Gly Ile Arg Leu Ala Glu Val
      100              105              110
Ala Glu Ala Gly Pro Asp Ser Glu Ile Ile Arg Asp Val Ile Ala Gly
      115              120              125
Ile Gln Phe Asp Lys His Phe Arg Asn Leu Arg His Asn Ile Pro Cys

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130		135		140
Gly Ile Asp Leu Pro His Arg Thr Val Phe Lys Gly His Thr Arg Phe				
145		150		155
Ile Leu Leu Val Ser Arg Thr Leu Ile Ser Glu Glu Glu Val Glu Val				
	165		170	175
Glu Ala Leu Lys Arg Leu Asp His Cys Ile Arg Arg Pro Ala Asp Gly				
	180		185	190
Leu Asp Val Ile Thr Gln Arg Gly Gly Glu Asn Leu Ser Leu Val Ile				
	195		200	205
Arg Ile Asn Gln Val Gln Cys Arg Val Val Ile Arg Leu Arg Asp Ile				
	210		215	220
Arg Glu Gln Arg Gly Gln Thr Asp Pro Ile Gly Val Ile Ile Asp Pro				
225		230		235
Gly Thr Ser Gln Gly Asn Arg Asp Phe Ile Gly Ile Gly His Ser Gly				
	245		250	255
Arg Cys Lys Val Arg Gln Ala Gly Thr Leu Cys Val Val Ser Glu Ile				
	260		265	270
Gly Gly Lys Thr Lys Phe Thr Gly Gln Leu Ile Ser Ser Gly Gly Ser				
	275		280	285
Lys Gly His Val His Pro Val Val Val Glu Lys Thr Gly Ser Asp Pro				
290		295		300
Asp Ser Phe Ile Gly His Ser Ser Gln Val Ile Ile Arg Lys Thr Ala				
305		310		315
Tyr Gly Ile Pro Phe Gly Ile Val Tyr Ser Arg Ile Phe Thr Phe Gln				
	325		330	335
Val Leu Pro Phe Gln Thr Gly Ala Ile Ile His Val Pro Leu Gly Arg				
	340		345	350
Asn Ile Pro Ile Val Ser Gly Ile Asn Ser Gln Phe Val Phe Met Ser				
	355		360	365
Phe Ile Ile Phe Arg Ser Ile Leu Ile Glu Ile Val Ile Tyr Thr Ile				
370		375		380
Cys Ile Pro Phe Thr Tyr Gln Thr Phe Gly Ile Leu Leu Tyr Arg Met				
385		390		395
Ile Val His Gly Ser Ile Arg Ser Ile Ile His Leu Ile Val Pro Phe				
	405		410	415
Val His Ser Asp Ser Pro Gly Arg Ile Thr Ile Gly Thr Gly Glu Phe				
	420		425	430
Gly Gly Ser Glu Lys Leu Ile Asp Phe Ser Pro Val Lys Ala Arg His				
	435		440	445
Ala Ala Leu His Ile Ser Phe Ile Arg Phe Gln Cys Thr Val Tyr Arg				
	450		455	460
Phe Gln Val Val Thr Gly Arg Gly Ile Phe Leu Phe His Gly His Trp				
465		470		475
Ser Leu Val Asp Ile Arg Ala Gln Gly Met Ile Ile Leu Gln Ile Asp				
	485		490	495
Leu Pro Val Gln Ala Ile Ile Pro Gly Val Arg Val Glu Gln Gly Gln				
	500		505	510
Leu Val Ser Phe Ile Gln Ser Gly Ile Ile Lys Ile Gly Leu Leu Gln				
	515		520	525
Phe Thr Arg Thr His Val Thr Val Gly His Phe Ala Arg Cys Arg Gln				
	530		535	540
Ile Gly Thr Cys Ser Glu Ala Glu Ser Arg Tyr Phe Phe His Ala Thr				
545		550		555
Val Ala Tyr Ile Asp Glu Arg Gly Gly Ser His Phe Val Ala Trp Pro				
	565		570	575
Thr Ala Val Ala Val Val Ile Asp Ser Arg Gln Leu Ser Ala Ser Phe				
	580		585	590
Ile Ile Ile Leu Gly Gln Gly Cys Phe Ile Asp Leu Ser Thr Val Leu				
	595		600	605

Ile Arg Cys Lys Thr Gln Phe Glu Thr Ala Arg Ile Lys Ile Leu Val
 610 615 620
 Asn Ala Ser Thr Val Glu Pro Ser Phe Pro His Thr Thr Ala Asp Ile
 625 630 635 640
 Ser Ile Glu Leu Leu Ala Lys Val Ile Gly Thr Ile Ile Asp Asp
 645 650 655
 Ser Thr Lys Leu Phe Cys Ser Gln Leu Gly Lys Arg Val Tyr Ser Ile
 660 665 670
 Thr Asp Ile Ala Gly Ser Asn Gly Gly Phe Gly Asp Phe Glu Gln Pro
 675 680 685
 Asp Val Pro Glu Thr Ala Val Ser Thr Pro Val Arg Ile Tyr Ile Met
 690 695 700
 Arg Ile Arg Gly Ile Asp Tyr Gly Glu Ser Val Phe Glu Tyr Ile Tyr
 705 710 715 720
 Val Ser Thr Trp Gln Ala Asp Arg Asp Phe Ala Gly Thr Ile Gly Ala
 725 730 735
 Arg Ser Val Gln His Asn Ile Thr Ile Ala Phe Phe Leu
 740 745

<210> 6710
 <211> 136
 <212> PRT
 <213> B.fragilis

<400> 6710
 Val Lys Thr Glu Tyr Asn Asp Ala Leu Ala Ala Val Ser Gly Asp Asn
 1 5 10 15
 Ala Thr Ala Tyr Ala Asn Leu Leu Thr Ala Met Asp Asn Ala Val Lys
 20 25 30
 Ala Arg Val Glu Thr Leu Ile Ala Tyr Tyr Lys Ala Asp His Asn Tyr
 35 40 45
 Ser Val Gln Asn Thr Leu Ala Tyr Thr Leu Gln Thr Ile Ala Asp Gly
 50 55 60
 Leu Ala Asp Tyr Asp Gln Leu Ile Leu Val Gln Lys Gln Ala Ile Ala
 65 70 75 80
 Ala Ala Asp Glu Asn Ile Ala Asn Ala Ala Ser Val Val Ser Lys Glu
 85 90 95
 Gln Ala Ile Ala Asn Gln Glu Lys Thr Ile Ala Asp Leu Glu Asn Ser
 100 105 110
 Leu Ala Val Asn Glu Pro Ile Tyr Asn Asp Tyr Leu Ala Gln Ile Lys
 115 120 125
 Ala Leu Val Gly Asp Ser Ala Glu
 130 135

<210> 6711
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 6711
 Lys Lys Tyr Arg Met Lys Ile Lys Arg Leu Leu Val Leu Ala Val Leu
 1 5 10 15
 Pro Met Leu Cys Leu Ala Val Asn Ala Gln Asn Ser Ser Lys Asp Asn
 20 25 30
 Thr Pro Lys Lys Gly Asp Phe Thr Val Ala Ala Thr Val Gly Tyr Asn
 35 40 45
 Ser Tyr Thr Ser Val Thr Ala Pro Ser Gly Leu Leu Thr Asp Tyr Glu
 50 55 60
 Val Arg Ala Leu Ser Thr Asn Trp Ala Asp Lys Lys Leu Met Val Gly

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65          70          75          80
Phe Glu Gly Gly Trp Phe Phe Lys Asp Gln Trp Lys Leu Asn Leu Gly
      85          90          95
Gly Gly Val Ser Phe Thr Asn Asn Pro Gly Tyr Pro Ala Val Pro Gly
      100          105          110
Thr Ile Asp Asp Ser Asn Lys Asn Asn Ser Ala Asp Glu Asn Met Gly
      115          120          125
Glu Ile Pro Asn Tyr Arg Ala Val Ala Asp Ala Gln Ser Phe Ala Tyr
      130          135          140
Asn Val Ser Ala Gly Val Asp Arg Tyr Phe Asn Ile Lys Arg Val Pro
145          150          155          160
Asn Leu Met Trp Tyr Thr Gly Ile Arg Val Arg Phe Ala Tyr Gly Glu
      165          170          175
Asn Glu Met Lys Tyr Asp Glu Glu Thr Ser Met Gly Lys Ser Ile Ala
      180          185          190
Glu Ser Trp Asn Leu Arg Gly Ala Leu Thr Ile Gly Val Asp Tyr Phe
      195          200          205
Val Phe Pro Ala Leu Tyr Ile Gly Ala Gln Ile Asp Pro Phe Ala Tyr
      210          215          220
Thr Tyr Asn Lys Thr Thr Tyr Asn Pro Gln Ala Gly Leu Gly Asp Leu
225          230          235          240
Ser Ala Asp Ser His Asn Tyr Ser Val Leu Ala Ala Pro Thr Phe Lys
      245          250          255
Ile Gly Phe Lys Phe
      260

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<210> 6712
<211> 265
<212> PRT
<213> B.fragilis

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<400> 6712
Lys Tyr His Val Ile Met Lys Thr Thr Phe Met Asn Val Ser Arg Gly
1          5          10          15
Val Ile Gly Ala Leu Ala Phe Ser Leu Gly Ile Ser Ser Cys Gln Ser
      20          25          30
Ser Gln Ser Lys Met Thr Phe Glu Gln Glu Gly Asp Ser Leu Thr Val
      35          40          45
Ile His Ile Thr Asn Pro Thr Gln Tyr Leu Leu Leu Pro Val Glu Glu
      50          55          60
Lys Thr Pro Glu Ala Gln Val Cys Ile Ala Ser Asp Ser Val Pro Val
      65          70          75          80
Asp Met Asp Val Arg Leu Ser Arg Glu Lys Val Asp Tyr Phe Val Pro
      85          90          95
Phe Ala Leu Pro Lys Gly Glu Lys Glu Val Ala Val Arg Ile Arg His
      100          105          110
Leu Pro Lys Glu Ala Leu Cys Trp Lys Glu Leu Lys Leu Ser Asp Thr
      115          120          125
Phe Asp Thr Thr Asn Thr Asp Gln Tyr Arg Pro Leu Tyr His His Thr
      130          135          140
Pro Leu Tyr Gly Trp Met Asn Asp Ala Asn Gly Leu Val Tyr Lys Asp
145          150          155          160
Gly Glu Tyr His Leu Phe Tyr Gln Tyr Asn Pro Tyr Gly Ser Met Trp
      165          170          175
Gly Asn Met His Trp Gly His Ser Val Ser Lys Asp Leu Val His Trp
      180          185          190
Glu His Leu Glu Pro Ala Leu Ala Arg Asp Thr Leu Gly His Ile Phe
      195          200          205
Ser Gly Ser Ser Val Val Asp Asp Ala Asn Thr Ala Gly Tyr Gly Ala

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210	215	220
Gly Ala Ile Val Ala Phe Tyr Thr Ser Ala Ser Asp Lys Asn Gly Gln		
225	230	235
Ile Gln Cys Met Ala Tyr Ser Thr Asp Asn Gly Arg Thr Phe Thr Lys		240
	245	250
		255
Tyr Glu Lys Asn Pro Ser Ser Pro Arg		
260	265	

<210> 6713

<211> 790

<212> PRT

<213> B.fragilis

<400> 6713

Asn Lys Ser Phe Ser Trp Glu Met Gly Phe Arg Val Pro Leu Arg His		
1	5	10
Gln Asn Asn Leu Asn Gln Leu Lys Asn Leu Ser Thr Met Met Lys Asn		15
	20	25
		30
Gln Lys Arg Ala Val Cys Leu Leu Ala Cys Leu Leu Ile Ala Gly Phe		
35	40	45
Thr Ala Ala Gln Glu Lys Lys Glu Ser Ala Gln Thr Ala Ser Gly Ser		
50	55	60
Lys Glu Glu Gly Asn Arg Asn Val Met Leu Asn Ala Ser Ser Ala Asn		
65	70	75
Gly Pro Arg Glu Ile Ser Ile Gly Leu Pro Gly Gly Asp Val Asn Val		80
	85	90
		95
Leu Glu Asn Gly Leu Pro Val Val Tyr Thr Ser Asn Pro His Asn Val		
100	105	110
Asn Thr His Trp Arg Gly Asp Ser Ser Leu Gly His Val Gly Leu Leu		
115	120	125
Lys Ile Ser Glu Thr Ala Ile Thr Thr Gly Asn Ile Gly Tyr Ala Val		
130	135	140
Asn Ser Phe Thr Gln Leu Gly Thr Glu Lys Phe Arg Gly Ile Val Asn		
145	150	155
Tyr Ser Thr Asn His Phe Gly Lys Gln Gln Phe Asp Ala Asn Ile Ser		
	165	170
		175
Gly Gly Met Gly Lys Gly Trp Phe Tyr Ser Gly Ser Val Tyr Gln Asn		
180	185	190
Phe Asp Pro Gly Ser Phe Lys Leu Arg Phe Thr Ser Asn Gln Asp Arg		
195	200	205
Thr Gln Ile Tyr Lys Ala Ala Leu Thr Lys Asn Tyr Asn Glu Gly Arg		
210	215	220
Gly Gln Leu Ser Ala Ile Tyr His Tyr Ser Asn Ser Arg Trp Pro Ser		
225	230	235
Asn Glu Val Thr Ser Ala Pro Phe Ile Tyr Val Gly Asp Gly Ser Val		
	245	250
		255
Lys Glu Ile Pro Gly Phe Ser Leu Gly Thr Ser Ser Tyr Leu Pro Thr		
260	265	270
Thr Gly Glu Met Ala Tyr Arg Asp Met Arg Thr Gly Glu Leu Lys Glu		
275	280	285
Thr Asn Leu Tyr Asp Ala Thr Leu Asn Lys Gly Asn Gln Leu Thr Leu		
290	295	300
Leu Asn Thr Tyr Thr Trp Asp Asn Gly Leu Asn Trp Lys Ile Asn Leu		
305	310	315
Lys Tyr Asp His Ala Leu Gly Ser Tyr Val Tyr Gln Thr Pro Met Ala		
	325	330
		335
Met Glu Gln Lys Asp Ala Ser Ala Gly Tyr Tyr Leu Lys Ala Val Asp		
340	345	350
Gly Thr Leu Lys Pro Tyr Glu Gly Tyr Val Gln Ser Arg Met Ser Cys		

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      355              360              365
Leu Asn Arg Gly Lys Ile Asp Glu Phe Phe Ala Thr Ser Glu Leu Ser
      370              375              380
Arg Ser Tyr Arg Asn Thr Trp Arg Ile Gly Val Asn Glu Trp His
385              390              395              400
Tyr Lys Val Asp Tyr Ala Ser Asn Thr Thr Met Tyr Asp His Thr Val
      405              410              415
Glu Glu Tyr Pro Glu Arg Leu Val Arg Glu Gly Asn Thr Asp Gly Val
      420              425              430
Tyr Tyr Asp Phe Asn Lys Asn Ala Ser Glu Tyr Tyr Lys Gly His Glu
      435              440              445
Asn Lys Leu Ala Val Tyr Ala Thr His Asp Trp Asp Ile Ser Pro Lys
450              455              460
Trp Asn Val Tyr Tyr Gly Ala Arg Leu Glu Trp Gln His Leu Glu Gly
465              470              475              480
Glu Asn Ala Ala Val Tyr Asp Ala Glu Gly Asn Ala Val Gly Arg Phe
      485              490              495
Pro Asp Tyr Tyr Leu Gly Ala Val Ser Asp Lys Gly Val Arg Ile Thr
      500              505              510
Pro Arg Leu Phe Asp Tyr Asp Trp Met Asn Met Ala Phe Thr Ala Ala
515              520              525
Ala Thr Tyr Lys Leu Thr Arg Glu Phe Gly Phe Thr Ala Asp Phe Thr
530              535              540
Tyr Asn Thr Gln Arg Pro Gly Leu Ser Asn Phe Ala Pro Ala Thr Met
545              550              555              560
Pro Asn Thr Asp Lys Ile Ser Val Pro Leu Gly Arg Ala Gly Ile Tyr
      565              570              575
Tyr Asn Thr Asp Trp Ile Ser Leu Thr Ser Leu Phe Ser Tyr Ile Ser
      580              585              590
Lys Thr Asn Asn Asn Ser Thr Leu Asn Leu Ile Asn Pro Asn Asp Gln
595              600              605
Thr Glu Ile Leu Ala Ala Pro Leu Ser Tyr Asp Ile Gln Thr Ile Gly
610              615              620
Trp Thr Thr Asp Ala Val Ile Lys Pro Phe Lys Gly Phe Asn Phe His
625              630              635              640
Phe Leu Phe Thr Tyr Gln Ser Pro Thr Tyr Lys Lys Tyr Glu Thr Ser
      645              650              655
Val Thr Phe Lys Asp Gly Thr Val Gly Glu Ile Asp Ala Thr Gly Asn
660              665              670
Ile Val Thr Glu Ile Pro Lys Val Leu Val Glu Leu Asp Pro Ser Tyr
675              680              685
Asn Ile Thr Asn Asp Leu Arg Val Trp Ala Ser Phe Arg Tyr Phe Ser
690              695              700
Lys Thr Tyr Ala Asn Ile Lys Asn Ala Tyr Tyr Phe Asn Gly Arg Trp
705              710              715              720
Glu Thr Phe Gly Gly Ile Asn Trp Thr Val Asn Lys His Leu Ala Leu
      725              730              735
Ser Ala Thr Val Ile Asn Phe Leu Asn Gln Thr Gly Ala Lys Gly Ser
      740              745              750
Ile Ala Gly Thr Glu Leu Val Asp Lys Lys Asp Ala Ala Ser Tyr Asn
755              760              765
Gly His Trp Met Ala Gly Ser Tyr Ile Arg Pro Phe Thr Val Glu Leu
770              775              780
Ala Ala Ser Ile Arg Phe
785              790

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<210> 6714

<211> 127

<212> PRT

<213> B.fragilis

<400> 6714

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Ile Arg Ser Thr Pro Lys Ala Ile Ser Ser Gln Tyr Leu Tyr Gln Ile
1          5          10          15
Phe Arg Tyr Asp Leu Leu Leu Val Lys Arg Arg Glu Ser Trp Pro His
          20          25          30
Phe Pro Cys Ser Tyr Tyr Phe Pro Val Val Val Asn Leu Pro Asp Phe
          35          40          45
Asp Phe Lys His Gln Leu Pro Ser Leu Asn Tyr Tyr Pro Leu Asn Pro
          50          55          60
Leu Gly Gly Lys Ile Leu Leu Lys Cys Ser Thr Ser Arg Leu Phe Arg
65          70          75          80
Ser Ser Phe Ala Arg Asn Ile Asn Pro Leu Leu Glu Lys Ser Arg Cys
          85          90          95
Gln Gln Thr Pro Thr Val Lys Thr Leu Phe Tyr Arg Thr Ala Leu Thr
          100          105          110
Ile Arg Leu Ala Pro Gly Ser Trp Asn Asn Pro Tyr Thr Leu Cys
          115          120          125

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<210> 6715

<211> 400

<212> PRT

<213> B.fragilis

<400> 6715

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Thr Asn Thr Ala Ile Val Met Asn Thr Thr Glu Tyr Leu Gln Thr Trp
1          5          10          15
Ser Asp Ser Tyr Lys Asn Asp Met Ile Ser Asn Ile Met Pro Phe Trp
          20          25          30
Met Lys Tyr Gly Trp Asp Arg Lys Asn Gly Gly Val Tyr Thr Cys Val
          35          40          45
Asp Arg Asp Gly Gln Leu Met Asp Thr Thr Lys Ser Val Trp Phe Gln
          50          55          60
Gly Arg Phe Ala Phe Thr Cys Ser Tyr Ala Tyr Asn His Ile Glu Arg
65          70          75          80
Asn Thr Glu Trp Leu Ala Ala Ala Lys Ser Thr Leu Asp Phe Ile Glu
          85          90          95
Ala His Cys Phe Asp Thr Asp Gly Arg Met Phe Phe Glu Val Thr Glu
          100          105          110
Thr Gly Leu Pro Ile Arg Lys Arg Arg Tyr Val Phe Ser Glu Thr Phe
          115          120          125
Ala Ala Ile Ala Met Ser Glu Tyr Ala Ile Ala Ser Gly Asp His Ser
          130          135          140
Tyr Ala Val Lys Ala Leu Lys Leu Phe Asn Asp Ile Arg His Phe Leu
145          150          155          160
Ser Thr Pro Gly Ile Leu Glu Pro Lys Tyr Cys Glu Arg Val Gln Met
          165          170          175
Lys Gly His Ser Ile Ile Met Ile Leu Ile Asn Val Ala Ser Arg Ile
          180          185          190
Arg Ala Ala Ile Asn Asp Pro Val Leu Asp Arg Gln Ile Glu Glu Ser
          195          200          205
Ile Ala Ile Leu Arg Lys Asp Phe Met His Pro Glu Phe Lys Ala Leu
          210          215          220
Leu Glu Thr Val Gly Pro Asn Gly Glu Phe Ile Asp Thr Asn Ala Thr
225          230          235          240
Arg Thr Ile Asn Pro Gly His Cys Ile Glu Thr Ser Trp Phe Ile Leu
          245          250          255
Glu Glu Ala Lys Asn Arg Asn Trp Asp Lys Glu Met Val Asp Thr Ala

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	260		265		270
Leu Thr Ile	Leu Asp Trp Ser Trp	Glu Trp Gly Trp Asp Lys Glu Tyr			
	275	280		285	
Gly Gly Ile Ile Asn Phe Arg Asp Cys Arg Asn Leu Pro Ser Gln Asp					
	290	295	300		
Tyr Ala His Asp Met Lys Phe Trp Trp Pro Gln Thr Glu Ala Ile Ile					
305	310	315	320		
Ala Thr Leu Tyr Ala Tyr Gln Ala Thr Lys Asn Glu Lys Tyr Leu Ala					
	325	330	335		
Met His Lys Gln Ile Ser Asp Trp Thr Tyr Ala His Phe Pro Asp Ala					
	340	345	350		
Glu Phe Gly Glu Trp Tyr Gly Tyr Leu His Arg Asp Gly Thr Ile Ser					
	355	360	365		
Gln Pro Ala Lys Gly Asn Leu Phe Lys Gly Pro Phe His Ile Pro Arg					
	370	375	380		
Met Met Thr Lys Gly Tyr Ala Leu Cys Gln Glu Leu Leu Ser Glu Lys					
385	390	395	400		

<210> 6716

<211> 73

<212> PRT

<213> B.fragilis

<400> 6716

Arg Pro Arg Glu Asn Asn Arg Ser Met Gly Asn Gly Ala Met Thr Pro		
1	5	10 15
Ser Phe Leu Leu Lys Val Gly Arg Ile Glu Ile Ser Gly Lys Gly Ile		
	20	25 30
Val Lys Lys Ser Pro Trp Gly Cys Cys Gly Ser Ile Leu Ser Asn Met		
	35	40 45
Tyr Gln Ile Arg Asp Phe Asn Gly Ala Leu Leu Thr Met Val Val Phe		
	50	55 60
Leu Glu Thr Val Asp Gly Arg Tyr Ser		
65	70	

<210> 6717

<211> 417

<212> PRT

<213> B.fragilis

<400> 6717

Pro Leu Ile Phe Ile Met Lys Asn Ser Lys Ile Tyr Pro Trp Ile Val		
1	5	10 15
Val Ala Leu Leu Trp Gly Val Ala Leu Leu Asn Tyr Met Asp Arg Gln		
	20	25 30
Met Leu Ser Thr Met Lys Asp Ala Met Gln Val Asp Ile Val Glu Leu		
	35	40 45
Gln Ser Ala Thr Asn Phe Gly Arg Leu Met Ala Val Phe Leu Trp Ile		
	50	55 60
Tyr Gly Leu Met Ser Pro Ile Ser Gly Met Ile Ala Asp Arg Leu Asn		
65	70	75 80
Arg Lys Trp Leu Ile Val Gly Ser Leu Phe Val Trp Ser Phe Val Thr		
	85	90 95
Tyr Leu Met Gly Ile Ala Glu Thr Phe Asn Gln Val Phe Trp Leu Arg		
	100	105 110
Ala Leu Met Gly Val Ser Glu Ala Leu Tyr Ile Pro Ala Gly Leu Ser		
	115	120 125
Leu Ile Ala Asp Tyr His Thr Glu Lys Ser Arg Ser Leu Ala Val Gly		
130	135	140

Ile His Met Thr Gly Leu Tyr Thr Gly Gln Ala Ile Gly Gly Phe Gly
 145 150 155 160
 Ala Thr Val Ala Ala Phe Ser Trp His Thr Thr Phe His Trp Phe
 165 170 175
 Gly Ile Ile Gly Ile Ala Tyr Ala Leu Val Leu Val Leu Phe Leu Lys
 180 185 190
 Asp Lys Lys Glu His Val Lys Thr Glu Arg Leu Lys Pro Ser Ser Lys
 195 200 205
 Asn Gly Glu Lys Ala Gly Leu Phe Lys Gly Leu Ser Leu Leu Phe Ser
 210 215 220
 Asn Ile Ala Phe Trp Val Ile Leu Leu Tyr Phe Ala Ala Pro Ser Leu
 225 230 235 240
 Pro Gly Trp Ala Thr Lys Asn Trp Leu Pro Thr Leu Phe Ala Glu Asn
 245 250 255
 Leu Asp Ile Pro Met Ser Gln Ala Gly Pro Met Ser Thr Ile Thr Ile
 260 265 270
 Ala Leu Ser Ser Phe Ile Gly Val Ile Leu Gly Gly Thr Leu Ser Asp
 275 280 285
 Lys Trp Val Gln Lys Asn Ile Arg Gly Arg Val Tyr Thr Gly Ala Ile
 290 295 300
 Gly Leu Gly Leu Thr Ile Pro Ser Leu Leu Leu Gly Phe Gly His
 305 310 315 320
 Ser Phe Val Ala Val Val Gly Ala Gly Leu Leu Phe Gly Ile Gly Tyr
 325 330 335
 Gly Ile Phe Asp Ala Asn Asn Met Pro Ile Leu Cys Gln Phe Val Ser
 340 345 350
 Ser Lys Tyr Arg Ala Thr Ala Tyr Gly Ile Met Asn Met Thr Gly Val
 355 360 365
 Phe Ala Gly Ala Phe Ile Thr Asp Leu Leu Gly Lys Trp Thr Asp Gly
 370 375 380
 Gly Asn Leu Gly Leu Gly Phe Ala Met Leu Ala Ile Ile Val Phe Ile
 385 390 395 400
 Ala Leu Ala Val Gln Leu Tyr Phe Leu Arg Pro Lys Thr Asp Asn Met
 405 410 415
 Glu

<210> 6718

<211> 149

<212> PRT

<213> B.fragilis

<400> 6718

Thr Val Val Ile Pro Ser Phe Ala Glu Ile Lys Tyr Thr Phe Glu Ser
 1 5 10 15
 Met Tyr Glu Tyr Asn Gln Cys Arg Met Tyr Lys Gly Gly Lys Phe Asp
 20 25 30
 Met Leu His Gly Gln Asp Lys Thr Ile Leu Pro Cys Leu Ala Met Gly
 35 40 45
 Gly Pro Gln Gly Gly Ile Gly Gly Thr Ala Asn Tyr Asn Gly Val Asn
 50 55 60
 Leu Val Gly Ile Ile Glu Ala Trp Lys Ala Gly Asp Leu Glu Lys Ala
 65 70 75 80
 Arg Glu Leu Gln Asn Phe Ser Gln Glu Val Ile Asn Val Ile Cys His
 85 90 95
 Phe Arg Glu Asn Ile Val Gly Gly Lys Arg Ile Met Lys Leu Ile Gly
 100 105 110
 Leu Asp Leu Gly Lys Asn Arg Thr Pro Phe Gln Asn Met Thr Asp Asp
 115 120 125

Glu Glu Val Arg Met Lys Pro Glu Pro Gln Ala Ile His Phe Phe Asp
 130 135 140
 Arg Cys Asn Lys Phe
 145

<210> 6719

<211> 150

<212> PRT

<213> B.fragilis

<400> 6719

Lys Glu Met Ile Val Ser Asn Leu Gln Asn Ser Gln Arg Val Glu Gly
 1 5 10 15
 Leu His Pro Leu Phe Lys Thr Leu Phe Asp Tyr Val Lys Thr His Asp
 20 25 30
 Leu Phe His Ala Glu Leu Gly Arg Ile Glu Ile Asp Gly Asp Asn Leu
 35 40 45
 Phe Ile Asn Asn Val Asn Pro Glu Cys Val Ala Arg Asp Lys Gln Val
 50 55 60
 Leu Glu Leu His Arg Asp Tyr Ile Asp Val His Ile Leu Leu Glu Gly
 65 70 75 80
 Thr Glu Thr Ile Gly Trp Lys Ala Ile Glu Asp Leu Lys Asp Glu Val
 85 90 95
 Lys Pro Tyr Glu Ala Asn Gly Asp Cys Ala Leu Tyr Ser Asp Ala Pro
 100 105 110
 Thr Thr Phe Val Asp Leu Leu Pro Gly Gln Phe Met Ile Val Tyr Pro
 115 120 125
 Glu Asp Pro His Ala Pro Leu Ile Gly Gln Gly Lys Ile Arg Lys Leu
 130 135 140
 Ile Ala Lys Val Lys Leu
 145 150

<210> 6720

<211> 698

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (668)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6720

Thr Ser Leu Leu Leu Thr Gln Lys Ala Ile Leu Met Lys Lys Thr Ile
 1 5 10 15
 Phe Leu Ile Leu Cys Ile Leu Cys Ser Leu Gly Ala Met Ala Gln Lys
 20 25 30
 Lys Ser Ile Thr Gly Val Val Thr Asp Ala Ser Gly Glu Ser Val Ile
 35 40 45
 Gly Ala Ser Val Val Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp
 50 55 60
 Ile Asp Gly Lys Phe Thr Leu Ser Val Asp Pro Asn Gly Lys Ile Arg
 65 70 75 80
 Val Ser Tyr Ile Gly Tyr Gln Pro Gln Val Leu Asp Val Lys Gly Lys
 85 90 95
 Asn Ser Phe Asn Ile Lys Leu Lys Glu Asp Ser Glu Met Leu Glu Glu
 100 105 110
 Val Val Val Thr Gly Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr
 115 120 125

Asn	Ser	Ile	Ala	Lys	Val	Lys	Asp	Glu	Ala	Leu	Lys	Val	Gly	Leu	Phe
130						135					140				
Ser	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ala	Gly	Leu	Lys	Val
145				150						155					160
Thr	Gln	Ala	Ser	Gly	Ser	Pro	Gly	Ala	Ala	Pro	Lys	Val	Thr	Leu	Arg
			165					170						175	
Gly	Gly	Thr	Asn	Phe	Asp	Gly	Ser	Gly	Asp	Pro	Leu	Val	Ile	Val	Asp
		180						185					190		
Gly	Gln	Leu	Arg	Asp	Gly	Met	Gln	Asp	Ile	Asn	Pro	Glu	Asp	Ile	Glu
		195					200					205			
Ser	Met	Glu	Val	Leu	Lys	Asp	Ala	Gly	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
	210					215					220				
Arg	Ala	Ser	Asn	Gly	Val	Ile	Leu	Ile	Thr	Thr	Lys	Thr	Gly	Lys	Glu
225				230						235					240
Gly	Arg	Arg	Glu	Ile	Asn	Phe	Lys	Ala	Lys	Met	Gly	Leu	Ser	Tyr	Val
			245						250					255	
Asn	Asn	Pro	Tyr	Asp	Phe	Leu	Gly	Ala	Lys	Asp	Tyr	Ile	Asn	Val	Leu
		260						265					270		
Arg	Thr	Gly	Tyr	Ser	Lys	Ser	Gly	Phe	Thr	Thr	Ser	Asp	Gly	Glu	Tyr
	275						280					285			
Val	Ser	Ile	Ala	Pro	Leu	Gly	Asn	Leu	Thr	Ser	Ala	Ser	Pro	Phe	Gly
	290					295					300				
Thr	Gly	Asn	Thr	Leu	Asn	Asp	Lys	Thr	Ile	Trp	Asn	Ile	Met	Asn	Lys
305					310					315					320
Thr	Ala	Asp	Asn	Ala	Tyr	Leu	Leu	Gln	Lys	Gly	Trp	Gln	Glu	Met	Pro
			325						330					335	
Asp	Pro	Leu	Asp	Pro	Ser	Lys	Thr	Ile	Leu	Tyr	Lys	Asp	Thr	Asn	Pro
			340					345					350		
Ala	Asp	Tyr	Asn	Leu	Asn	Asn	Pro	Ala	Ile	Ser	Gln	Asp	Tyr	Asn	Ile
		355					360					365			
Asn	Met	Ser	Gly	Gly	Asn	Asp	Lys	Gly	Thr	Tyr	Tyr	Ala	Gly	Leu	Gly
	370					375					380				
Tyr	Asn	Arg	Gln	Glu	Gly	Leu	Pro	Ile	Lys	Thr	Phe	Tyr	Glu	Arg	Tyr
385				390						395					400
Ser	Phe	Val	Leu	Asn	Ala	Ser	Tyr	Lys	Ile	Thr	Asp	Trp	Leu	Thr	Ser
			405						410					415	
Ser	Ser	Asn	Phe	Asn	Tyr	Asn	Arg	Ala	Asn	Trp	Lys	Asn	Met	Pro	Gly
		420						425					430		
Ser	Gln	Thr	Ser	Glu	Gly	Asn	Tyr	Phe	Gly	Arg	Ile	Met	Ser	Thr	Pro
		435					440					445			
Pro	Thr	Val	Arg	Phe	Gln	Asp	Glu	Asp	Gly	Asn	Pro	Thr	Leu	Gly	Pro
	450					455					460				
Val	Ala	Gly	Asp	Gly	Asn	Gln	Asn	Tyr	Gln	Pro	Asp	Lys	Trp	Trp	Asn
465					470					475					480
Phe	Asn	Gln	Ser	Asp	Lys	Phe	Thr	Met	Val	Gln	Ala	Phe	Gln	Ile	Asp
			485						490					495	
Ile	Leu	Lys	Asn	Leu	Ser	Val	Lys	Gly	Thr	Ala	Asn	Trp	Tyr	Tyr	Ser
		500						505					510		
Glu	Ser	Leu	Ala	Glu	Ser	Phe	Thr	Arg	Asp	Tyr	Glu	Asn	Thr	Pro	Gly
		515					520					525			
Gln	Phe	Val	Arg	Thr	Arg	Ser	Ser	Ser	Ala	Ser	Phe	Ser	Arg	Asp	Phe
	530					535					540				
Ser	Gln	Thr	Tyr	Asn	Val	Leu	Asn	Tyr	Asn	Gln	Thr	Phe	Ala	Lys	
545				550					555					560	
Asp	His	Asn	Val	Ala	Val	Met	Leu	Gly	Met	Glu	Tyr	Phe	Asp	Arg	Tyr
			565						570					575	
Ser	Arg	Ser	Phe	Ser	Ala	Ser	Gly	Ser	Gly	Ala	Pro	Thr	Asp	Asp	Phe
			580					585					590		
Ala	Asp	Leu	Ser	Leu	Thr	Asp	Asn	Gly	Glu	Gly	Lys	Arg	Ser	Ile	Asp

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      595              600              605
Ser Gly His Ser Asp Tyr Arg Ile Leu Ser Tyr Phe Gly Arg Leu Asn
  610              615              620
Tyr Asp Tyr Lys Gly Arg Tyr Leu Leu Ser Ala Val Phe Arg Gln Asp
  625              630              635              640
Gly Tyr Ser Ser Leu Gly Asp Asn Arg Trp Gly Phe Phe Pro Gly
      645              650              655
Val Ser Ala Gly Trp Ile Phe Gly Gln Glu Asn Xaa Val Lys Asn Ala
      660              665              670
Leu Pro Phe Leu Ser Phe Gly Lys Leu Arg Ala Ser Tyr Gly Val Asn
      675              680              685
Gly Asn Ser Thr Gly Ile Gly Ala Ser Ser
  690              695

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<210> 6721
 <211> 73
 <212> PRT
 <213> B.fragilis

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<400> 6721
Ser Leu Arg Ser Ile Gly Leu Lys Pro Arg Pro Leu Ser Phe Glu Thr
  1              5              10              15
Asn Gly Thr Leu Val Leu Lys Val Phe Ser Arg Trp Tyr Asn Thr Ile
      20              25              30
Tyr Gln His Ile Val Ser Glu Thr Phe Ala Lys Ala Gly Ser Ser Val
      35              40              45
Arg Ile Leu Ile Thr Asp Lys Lys Asn Tyr Lys Pro Thr Ser Glu Arg
      50              55              60
Cys Val Glu Thr Leu Phe Thr Thr Glu
  65              70

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<210> 6722
 <211> 329
 <212> PRT
 <213> B.fragilis

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<400> 6722
Arg Lys Asn Lys Lys Met Gly Leu Phe Ile Lys Lys Pro Phe Glu Ala
  1              5              10              15
Leu Leu Ala Glu Ala Asn Ala Ser Gly Ser Lys Ser Leu Lys Arg Val
      20              25              30
Leu Gly Pro Trp Ser Leu Val Ala Leu Gly Val Gly Val Ile Ile Gly
      35              40              45
Ala Gly Leu Phe Ser Ile Thr Gly Thr Val Ala Ala Gly Tyr Thr Gly
      50              55              60
Pro Ala Ile Thr Leu Ser Phe Ala Ile Ala Ala Leu Gly Cys Cys Phe
  65              70              75              80
Ala Gly Leu Cys Tyr Ala Glu Phe Ala Ser Met Ile Pro Val Ala Gly
      85              90              95
Ser Ala Tyr Thr Tyr Ser Tyr Ala Thr Met Gly Glu Leu Ile Ala Trp
      100              105              110
Ile Ile Gly Trp Asp Leu Val Leu Glu Tyr Thr Val Ala Ala Thr Thr
      115              120              125
Val Ser Ile Ser Trp Ser Arg Tyr Leu Val Val Phe Leu Glu Gly Leu
      130              135              140
Asp Ile His Leu Pro Gln Ala Leu Thr Ala Cys Pro Trp Asp Gly Gly
  145              150              155              160
Ile Val Asn Ile Pro Ala Phe Leu Ile Val Val Leu Met Ser Ile Phe
      165              170              175

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Leu Ile Arg Gly Thr Glu Gly Ser Ser Ile Phe Asn Gly Ile Ile Val
      180      185      190
Phe Leu Lys Val Ser Val Ile Ala Ile Phe Val Val Leu Arg Trp Lys
      195      200      205
Tyr Ile Asn Ala Asp Asn Tyr Thr Pro Tyr Ile Pro Ala Asn Thr Gly
      210      215      220
Thr Leu Gly Glu Tyr Gly Leu Ser Gly Val Leu Arg Gly Ala Ala Ile
225      230      235      240
Val Phe Phe Ala Phe Leu Gly Phe Asp Ala Val Ser Thr Ala Ala Gln
      245      250      255
Glu Thr Lys Asn Ser Glu Thr Glu Tyr Ala Asp Arg Tyr Ser Gly Ile
      260      265      270
Thr Leu Gly Met Tyr Arg Thr Leu Tyr Ala Cys Cys Pro Arg Asn Asp
      275      280      285
Arg Ser Ser Pro Leu Ile Pro Asn Phe Asn Gly Gln Lys Gly Ile Ala
      290      295      300
Pro Val Ala Ile Ala Ile Arg Thr His Gly Thr Cys Arg Cys Asn Arg
305      310      315      320
Ala Ser Phe Thr Arg Ile Ile Pro Trp
      325

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<210> 6723
 <211> 116
 <212> PRT
 <213> B.fragilis

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<400> 6723
Lys Trp Ile Glu Glu Ala Arg Ala Leu Gly Asp Thr Pro Glu Glu Lys
1      5      10      15
Glu Leu Tyr Glu Trp Asn Ala Arg Val Gln Ile Thr Thr Trp Gly Asn
      20      25      30
Arg Asn Ala Ala Asp Tyr Gly Gly Leu Arg Asp Tyr Ala His Lys Glu
      35      40      45
Trp Asn Gly Leu Leu Lys Asp Phe Tyr Tyr Met Arg Trp Lys Leu Tyr
      50      55      60
Phe Asp Phe Leu Ser Gln Arg Ile Glu Gly Lys Thr Pro Ala Glu Ile
65      70      75      80
Asp Phe Tyr Ala Ile Glu Glu Pro Trp Thr Lys Ala Ala Asn Pro Tyr
      85      90      95
Ser Ala Glu Ala Glu Gly Asp Cys Ile Glu Val Ala Lys Gln Val Met
      100      105      110
Gln Ala Val Glu
      115

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<210> 6724
 <211> 202
 <212> PRT
 <213> B.fragilis

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<400> 6724
Ala Met Thr Asp Tyr Phe Pro Pro Phe Phe Ser His Ile Asn Glu Lys
1      5      10      15
Phe Arg Thr Pro Ala Arg Ser Asn Leu Phe Met Leu Ile Val Gly
      20      25      30
Leu Leu Ala Ala Phe Val Pro Ala Arg Leu Ala Gly Glu Met Thr Ser
      35      40      45
Ile Gly Thr Leu Met Ala Phe Thr Leu Val Cys Ala Ala Val Leu Val
      50      55      60
Val Arg Lys Thr Met Pro Asn Val Pro Arg Ser Phe Lys Thr Pro Phe

```

65 70 75 80
 Val Pro Leu Val Pro Ile Leu Gly Ile Leu Thr Cys Leu Cys Met Met
 85 90 95
 Leu Phe Leu Pro Ala Asp Thr Trp Ile Arg Leu Val Leu Trp Met Leu
 100 105 110
 Ile Gly Leu Asp Ile Tyr Val Gly Tyr Gly Met Lys His Ser Lys Leu
 115 120 125
 Glu His Gly Val Lys Asn Arg Arg Gly Gln Ser Ala Leu Asn Met Ile
 130 135 140
 Gly Ile Ala Leu Ser Leu Leu Cys Val Ile Thr Gly Leu Trp His Gln
 145 150 155 160
 Gln Thr Val Gly Trp Asn Glu Ser Lys Ile Leu Leu Ile Ile Ser Phe
 165 170 175
 Val Phe Ala Phe Thr His Cys Ala Tyr Tyr Met Met Arg Ile Trp Lys
 180 185 190
 Gly Thr Thr Lys Gln Thr Asn Asp Asn Gly
 195 200

<210> 6725

<211> 432

<212> PRT

<213> B.fragilis

<400> 6725

Thr Leu Cys Cys Ala Pro Phe Ala Met Gln Ala Gln Gln Pro Gln Ile
 1 5 10 15
 Tyr Thr Leu Lys Ser Cys Leu Glu Tyr Gly Leu Gln Asn Asn Tyr Ser
 20 25 30
 Leu Gln Ile Val Arg Asn Glu Glu Gln Val Ser Arg Asn Asn Ala Thr
 35 40 45
 Pro Gly Asn Ala Gly Tyr Leu Pro Thr Leu Asp Phe Thr Ala Gly Tyr
 50 55 60
 Lys Gly Thr Val Asp Asn Thr Asn Thr Lys Val Arg Ala Thr Gly Glu
 65 70 75 80
 Ser Val Lys Glu Asn Gly Val Phe Asp Gln Thr Leu Asn Val Gly Leu
 85 90 95
 Asn Leu Asn Trp Thr Ile Phe Asp Gly Phe Asn Ile Thr Ala Asn Tyr
 100 105 110
 Gln Lys Leu Lys Glu Leu Gln Leu Gln Gly Glu Thr Asn Thr Arg Ile
 115 120 125
 Ala Ile Glu Asp Leu Ile Ala Asn Leu Ala Ala Glu Tyr Tyr Asn Tyr
 130 135 140
 Val Gln Gln Lys Ile Arg Leu Gln Asn Phe Arg Tyr Ala Val Ser Leu
 145 150 155 160
 Ser Lys Glu Arg Leu Arg Ile Val Glu Glu Arg Tyr His Ile Gly Asn
 165 170 175
 Phe Ser Arg Leu Asp Tyr Gln Gln Ala Lys Val Asp Phe Asn Ala Asp
 180 185 190
 Ser Ala Lys Tyr Met Lys Gln Gln Glu Leu Leu His Thr Ser Arg Ile
 195 200 205
 Gln Leu Asn Glu Leu Met Ala Asn Glu Asp Val Asp Gln Pro Leu Val
 210 215 220
 Ile Glu Asp Ser Ile Ile Lys Val Asn Ala Gly Leu Arg Phe Glu Glu
 225 230 235 240
 Leu Trp Asn Ala Thr Leu Leu Thr Asn Ala Ser Leu Leu Lys Ala Glu
 245 250 255
 Gln Asn Asn Thr Leu Ala Met Leu Asp Tyr Lys Lys Val Asn Ser Arg
 260 265 270
 Asn Tyr Pro Tyr Leu Lys Met Asn Thr Gly Tyr Gly Tyr Thr Phe Asn

275	280	285
Lys Tyr Asp Ile Ala Ala Asn Ser Gln Arg Gly Asn Leu Gly Ala Asn		
290	295	300
Phe Gly Val Thr Val Gly Phe Asn Ile Phe Asp Gly Asn Arg Arg Arg		
305	310	315
Glu Lys Asn Asn Ala Arg Ile Ala Ile Lys Asn Ala Arg Leu Gln Arg		
	325	330
Glu Gln Leu Glu Gln Gly Leu Lys Ala Asp Leu Ser Asn Leu Trp Gln		
	340	345
Ala Tyr Gln Asn Asn Leu Gln Met Leu Lys Leu Glu Arg Gln Asn Leu		
	355	360
Val Ala Ala Lys Glu Asn His Glu Ile Ala Met Glu Arg Tyr Met Leu		
	370	375
Gly Asn Leu Ser Gly Ile Glu Met Arg Glu Ala Gln Lys Ser Leu Leu		
385	390	395
Asp Ala Glu Glu Arg Ile Leu Ser Ala Glu Tyr Asp Thr Lys Leu Cys		
	405	410
Glu Ile Ser Leu Leu Gln Ile Ser Gly Lys Ile Thr Lys Tyr Leu Glu		
	420	425
		430

<210> 6726

<211> 446

<212> PRT

<213> B.fragilis

<400> 6726

Arg Pro Val Trp Arg Asn Val Leu Asp Lys Leu Gly Tyr Thr Lys Thr		
1	5	10
Glu Ile Asn Glu Phe Ile Ser Gly Pro Gly Phe Phe Ala Trp Trp Val		
	20	25
Met Asn Asn Leu Gly Gly Trp Gly Gly Pro Asn Pro Asp Ser Trp Tyr		
	35	40
Thr Arg Gln Ile Ala Leu Gln Lys Lys Ile Leu Lys Arg Met Arg Glu		
	50	55
Tyr Gly Ile Glu Pro Val Leu Pro Gly Tyr Cys Gly Met Val Pro His		
65	70	75
Asn Ala Lys Glu Lys Leu Gly Leu Asn Val Ser Asp Pro Gly Thr Trp		
	85	90
Cys Gly Tyr Arg Arg Pro Ala Phe Leu Gln Pro Ser Asp Pro Arg Phe		
	100	105
Glu Glu Ile Ser Ser Leu Tyr Tyr Lys Glu Leu Glu Lys Leu Tyr Gly		
	115	120
Lys Ala Asn Phe Tyr Ser Met Asp Pro Phe His Glu Gly Gly Asn Thr		
	130	135
Ala Gly Val Asp Leu Asp Ala Ala Gly Lys Ala Val Met Lys Ala Met		
145	150	155
Lys Lys Ala Asn Pro Lys Ala Val Trp Val Ala Gln Ala Trp Gln Ala		
	165	170
Asn Pro Arg Pro Lys Met Ile Glu Asn Leu Lys Ala Gly Asp Leu Leu		
	180	185
Ile Leu Asp Leu Thr Ser Glu Cys Arg Pro Gln Trp Gly Asp Ser Thr		
	195	200
Ser Glu Trp Tyr Arg Lys Asn Gly Tyr Gly Gln His Asp Trp Ile Tyr		
	210	215
Cys Met Leu Leu Asn Tyr Gly Gly Asn Val Gly Leu His Gly Lys Met		
225	230	235
Asp Asn Val Ile Asp Asn Phe Tyr Leu Ala Lys Ala Asp Pro His Ala		
	245	250
Ser Ala Thr Leu Lys Gly Val Gly Met Thr Pro Glu Gly Ile Glu Asn		

Asn	Pro	Val	Met	Tyr	Glu	Leu	Val	Met	Glu	Leu	Pro	Trp	Arg	Pro	Asp
	275						280					285			
Arg	Phe	Thr	Lys	Glu	Glu	Trp	Leu	Lys	Glu	Tyr	Val	Lys	Ala	Arg	Tyr
	290					295					300				
Gly	Val	Asp	Asp	Pro	Val	Val	Gln	Ala	Ala	Trp	Thr	Asn	Leu	Ala	Asn
305					310					315					320
Ser	Ile	Tyr	Asn	Ser	Pro	Lys	Asn	Leu	Thr	Gln	Gln	Gly	Thr	His	Glu
			325						330					335	
Ser	Val	Phe	Cys	Ala	Arg	Pro	Ala	Glu	Asp	Val	Tyr	Gln	Val	Ser	Ser
			340						345					350	
Trp	Ser	Glu	Met	Lys	Asp	Tyr	Tyr	Arg	Pro	Gln	Glu	Val	Ile	Glu	Ala
		355						360					365		
Ala	Arg	Leu	Met	Val	Ser	Val	Ala	Asp	Arg	Phe	Lys	Gly	Asn	Asn	Asn
	370						375					380			
Phe	Glu	Tyr	Asp	Leu	Val	Asp	Ile	Val	Arg	Gln	Ala	Leu	Ala	Glu	Lys
385					390					395					400
Gly	Arg	Leu	Met	Gln	Lys	Ala	Val	Thr	Ala	Ala	Tyr	Arg	Ala	Gly	Asp
			405							410				415	
Lys	Gln	Leu	Phe	Ala	Leu	Ala	Ser	Gly	Lys	Phe	Leu	Asp	Leu	Ile	Leu
			420						425					430	
Leu	Gln	Asp	Lys	Leu	Leu	Gly	Thr	Arg	Pro	Glu	Phe	Arg	Val		
	435						440						445		

<210> 6727

<211> 301

<212> PRT

<213> B.fragilis

<400> 6727

Lys	Cys	Ile	Ser	Met	Lys	Pro	Tyr	His	Ile	Asn	Lys	Lys	Gln	Ile	Leu
1				5					10					15	
Ile	Met	Gly	Cys	Leu	Gly	Met	Phe	Pro	Leu	Phe	Ser	Ser	Ala	Gln	Asp
		20						25					30		
Ile	Leu	Ser	Thr	Ser	Gly	Thr	Ser	Arg	Trp	Asp	Tyr	Ser	Asn	Ser	Arg
		35						40					45		
Val	Glu	Arg	Glu	Pro	Gly	Arg	Asp	Ala	Leu	Asp	Ile	Thr	Phe	Ser	Val
	50					55					60				
Phe	Pro	Leu	Ala	Gly	Leu	Gly	Ser	Gln	Glu	Val	Ala	Tyr	Leu	Phe	Pro
65					70					75					80
Val	Tyr	Val	Ser	Ala	Asp	Gly	Arg	Asp	Ser	Val	Arg	Leu	Glu	Pro	Val
				85					90					95	
Cys	Val	Ala	Gly	Lys	Arg	Arg	Tyr	Lys	Val	Ile	Lys	Arg	Arg	Lys	Ala
			100						105					110	
Leu	Gly	Asn	Leu	Lys	Pro	Gly	Asn	Pro	Gly	Ser	Gly	Glu	Val	Arg	Ser
		115						120					125		
Ala	Lys	Val	Leu	Glu	Ser	Ser	Gly	Leu	Thr	Val	Lys	Arg	Ser	Val	Pro
		130						135				140			
Phe	Glu	Arg	Trp	Met	Ala	Asp	Gly	Arg	Leu	Val	Val	Arg	Glu	Val	Ser
145					150					155					160
Tyr	Gly	Cys	Ala	Glu	Cys	Gly	Thr	Asn	Glu	Ser	Glu	Asp	Ile	Ala	Phe
				165					170					175	
Gln	Ala	Gly	Ile	Pro	Leu	Phe	Gly	Glu	Lys	Asp	Tyr	Ala	Tyr	Ser	Phe
			180						185					190	
Ile	Glu	Pro	Glu	Lys	Val	Met	Ile	Lys	Cys	Tyr	Lys	Asp	Ser	Phe	Asp
		195						200					205		
Cys	Lys	Val	Val	Phe	Pro	Val	Ala	Arg	His	Asp	Leu	Gln	Glu	Asp	Phe
	210						215					220			
Ala	Gly	Asn	Ala	Gln	Glu	Leu	Asp	Ser	Leu	Lys	Lys	Phe	Leu	Ser	Glu

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225          230          235          240
Asn Met Asn Ile Gln Gly Thr Ser Leu Lys Glu Val His Ile Lys Gly
          245          250          255
Tyr Ala Ser Pro Glu Gly Ser Phe Asp Tyr Asn Arg Ser Leu Ala Gln
          260          265          270
Arg Arg Thr Gln Thr Leu Ser Asp Tyr Ile Ser Arg Gln Tyr Pro Ala
          275          280          285
Leu Ser Ser Pro Arg Gly Trp Lys Asn Pro Arg Trp Arg
          290          295          300

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<210> 6728
 <211> 72
 <212> PRT
 <213> B.fragilis

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<400> 6728
Leu Thr Gly Pro Asp Arg Glu Arg Tyr Gln Leu Lys Phe Phe Ser Ser
1          5          10          15
Arg Leu Asp Asp Gly Arg Arg Leu Ser Thr Pro Lys Glu Ala Phe Thr
          20          25          30
Thr Asp Asn Phe Thr Ile Pro Gly Cys Phe Cys Lys Ser Arg Leu Gly
          35          40          45
Ala Arg Gly Gly Ile Ile Gln Glu Lys Lys Gly Thr Pro Tyr Leu Ala
          50          55          60
Asn Leu Ser Tyr Thr Val Phe Asn
65          70

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<210> 6729
 <211> 999
 <212> PRT
 <213> B.fragilis

```

<400> 6729
Phe Met Asn Thr Leu Gln Lys Thr Ala Gly Ala Ile Leu Ser Leu Ser
1          5          10          15
Leu Leu Cys Gly Met Gln Val Tyr Ala Phe Pro Asp Tyr Pro Ser Leu
          20          25          30
Arg Gly Gln Ile Ile Glu Gln Ser Asp Ile Cys Gln Gly Val Val Lys
          35          40          45
Asp Ala Asn Gly Glu Ser Ile Ile Gly Ala Ser Val Leu Val Lys Gly
          50          55          60
Thr Thr Asn Gly Ser Ile Thr Gly Leu Asp Gly Asp Phe Ser Leu Arg
65          70          75          80
Asn Val Lys Lys Gly Asp Ile Ile Val Val Ser Tyr Val Gly Tyr Gln
          85          90          95
Ser Gln Glu Ile Ala Trp Thr Gly Glu Pro Leu Asn Ile Val Leu Lys
          100          105          110
Glu Asp Ala Glu Val Leu Asp Glu Val Val Val Ile Gly Tyr Gly Ala
          115          120          125
Val Arg Lys Ala Asp Met Ala Gly Ser Val Ala Val Leu Asp Asn Lys
          130          135          140
Asn Phe Lys Asp Gln Pro Ile Thr Gln Val Ala Asp Ala Leu Gln Gly
145          150          155          160
Arg Val Ser Gly Val His Val Glu Asn Ser Gly Val Pro Gly Gly Ser
          165          170          175
Val Lys Ile Arg Ile Arg Gly Ala Asn Ser Ile Ser Lys Ser Asn Asp
          180          185          190
Pro Leu Tyr Val Val Asp Gly Ile Val Arg Glu Ser Gly Leu Asp Gly
195          200          205

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Ile Asn Pro Glu Asp Ile Arg Ser Met Gln Val Leu Lys Asp Ala Ser
 210 215 220
 Ser Thr Ala Ile Tyr Gly Ser Arg Gly Ser Asn Gly Val Val Leu Ile
 225 230 235 240
 Thr Thr Lys Ile Gly Lys Ala Gly Val Arg Glu Ile Met Phe Asp Ala
 245 250 255
 Ser Val Gly Val Ser Asn Val Tyr Lys Arg Tyr Asp Ile Leu Gly Ala
 260 265 270
 Tyr Asp Tyr Ala Leu Ala Leu Lys Glu Val Lys Gly Ile Asp Phe Ser
 275 280 285
 Asn Glu Glu Met Gln Ser Tyr Gln Asn Gly Thr Gly Gly Ile Asp Trp
 290 295 300
 Gln Asp Glu Ile Phe Arg Thr Gly Ile Thr Gln Asn Tyr Lys Leu Ala
 305 310 315 320
 Leu Ser Asn Gly Ser Glu Lys Thr Gln Tyr Tyr Ile Ser Ala Asn Tyr
 325 330 335
 Met Ser Gln Glu Gly Val Val Ile Glu Ser Lys Asn Glu Arg Tyr Gln
 340 345 350
 Ala Lys Ala Asn Leu Ser Ser Gln Leu Thr Asp Trp Leu His Ile Thr
 355 360 365
 Ala Asp Ile Asn Ala Ser His Gly Val Arg Arg Gly Gly Ser Phe Ala
 370 375 380
 Ser Gly Lys Asp Asn Pro Ile Trp Ile Ala Leu Asn Tyr Ser Pro Thr
 385 390 395 400
 Met Thr Met Met Ala Glu Asn Gly Asn Tyr Asn Thr Asp Thr Tyr Asn
 405 410 415
 Ser Ile Ala Ser Asn Pro Val Gly Ile Leu Lys Leu Gln Ser Gly Glu
 420 425 430
 Thr Met Thr Asn Val Phe Asn Gly Arg Val Asp Leu Arg Leu Asp Ile
 435 440 445
 Met Lys Gly Leu Thr Phe Thr Thr Thr Asn Gly Val Asp Tyr Tyr Asp
 450 455 460
 Gly Lys Ser Tyr Ser Phe Ser Ser Lys Arg Val Gly Thr Lys Ser Gly
 465 470 475 480
 Met Gly Asn Asn Asp Thr Tyr Arg Leu Met Leu Gln Ser Ser Asn Asn
 485 490 495
 Leu Thr Tyr Thr Gly Ser Trp Asn Asp His His Leu Thr Ala Thr Ala
 500 505 510
 Val Tyr Glu Val Thr Ser Ser Glu Thr Arg Thr Met Gly Ile Thr Gly
 515 520 525
 Asn Asn Leu Leu Thr Glu Gly Val Gly Trp Trp Asn Val Gly Met Ala
 530 535 540
 Ser Ser Arg Asp Ala Asn Asn Gly Tyr Glu Gln Trp Ala Leu Met Ser
 545 550 555 560
 Gly Val Ala Arg Val Met Tyr Asn Phe Lys Asp Arg Tyr Met Leu Thr
 565 570 575
 Gly Thr Phe Arg Ala Asp Gly Ser Ser Arg Phe Ala Lys Lys Lys Trp
 580 585 590
 Gly Tyr Phe Pro Ser Ile Ala Ala Ala Trp Thr Leu Ser Asn Glu Asp
 595 600 605
 Phe Met Lys Asp Val Ser Ser Val Gln Asp Ile Lys Leu Arg Ala Ser
 610 615 620
 Tyr Gly Ile Val Gly Ser Gln Ala Ile Ser Pro Tyr Ala Thr Met Gly
 625 630 635 640
 Leu Met Ser Ala Thr Ala Tyr Asn Phe Gly Thr Asn Ser Asn Phe Thr
 645 650 655
 Gly Tyr Trp Ala Asn Asp Ile Ala Thr Pro Glu Leu Thr Trp Glu Lys
 660 665 670
 Thr Lys Gln Phe Asp Leu Gly Leu Glu Phe Ser Leu Phe Asp Arg Arg

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        675                680                685
Leu Asn Phe Ser Val Asp Tyr Phe Tyr Lys Arg Thr Thr Asp Ala Leu
 690                695                700
Leu Lys Arg Ser Ile Pro Gly Tyr Val Gly Gly Asn Ser Phe Trp Val
 705                710                715                720
Asn Asp Gly Glu Ile Ser Asn Arg Gly Ile Asp Leu Ser Val Thr Ala
        725                730                735
Arg Ile Met Gln Asn Asp Arg Phe Gln Trp Thr Ser Thr Leu Asn Gly
        740                745                750
Thr Tyr Leu Lys Asn Arg Val Glu Arg Leu Ser Gly Gly Glu Asn Asp
        755                760                765
Phe Ile Asn Gly Ser Ser Pro Ala Ala Gly Met Val Asp Tyr Ala Thr
        770                775                780
Ile Ile Lys Pro Gly Glu Ala Ile Gly Thr Phe Trp Gly Tyr Glu Trp
 785                790                795                800
Thr Gly Leu Asp Glu Asn Gly His Asp Thr Tyr Thr Asp Val Asp Gly
        805                810                815
Asn Gln Met Ile Asp Gly Gly Asp Arg Lys Val Ile Gly Lys Ala Asn
        820                825                830
Pro Asp Phe Thr Leu Gly Trp Asn Asn Ser Leu Ser Tyr Lys Asn Trp
        835                840                845
Asp Leu Asn Leu Phe Phe Asn Gly Ser Phe Gly Ala Lys Arg Leu Asn
        850                855                860
Leu Val Arg Tyr Thr Met Ala Ser Ala Glu Gly Asn Ser Arg Phe Val
 865                870                875                880
Thr Leu Ala Asp Ala Tyr Leu Lys Gly Phe Asp Lys Ile Gly Ser Ser
        885                890                895
Ala Thr Tyr Pro Ser Leu Thr Glu Gly Gly Asn Asn Leu Gln Pro Val
        900                905                910
Ser Thr Lys Trp Leu Glu Asn Ala Asp Phe Leu Arg Leu Glu Asn Ile
        915                920                925
Ser Leu Ser Tyr Thr Phe Pro Lys Lys Thr Thr Gly Phe Ala Asp Leu
        930                935                940
Arg Leu Thr Phe Ser Cys Gln Asn Leu Phe Thr Ile Thr Gly Tyr Lys
 945                950                955                960
Gly Met Asp Pro Ala Gly Thr Thr Phe Ser Asn Ser Ser Val Asp Val
        965                970                975
Asp Ala Gly Ile Asp Met Gly Ala Tyr Pro Ser Pro Arg Thr Phe Thr
        980                985                990
Phe Gly Leu Arg Met Asn Phe
 995

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<210> 6730

<211> 68

<212> PRT

<213> B.fragilis

<400> 6730

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Arg Pro Gly Thr Phe Thr Gly His Asp His Phe Pro Glu Phe Leu Tyr
 1                5                10                15
Val Arg Gly Glu Thr Tyr Gly Met Tyr Ala Ala Phe Phe Glu Tyr Leu
        20                25                30
Val Gln Arg His Thr Pro Gly Thr Val Thr Gln Ala Leu His Glu Asp
        35                40                45
Arg Ile His Glu Thr Arg Ser Met Thr Glu Asn Asn His Ser Thr Gly
        50                55                60
Gly Ala Asp Lys
 65

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<210> 6731
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 6731

Ala	Thr	Lys	Thr	Glu	Thr	Met	Glu	Leu	Phe	Tyr	Leu	Asn	Glu	His	Thr
1				5					10					15	
Ser	Cys	Tyr	Asn	Tyr	Ser	Lys	Ser	Met	Gln	Glu	Gly	Phe	Arg	Tyr	Tyr
			20					25					30		
Lys	Phe	Asp	Glu	Gly	Leu	Asn	His	Glu	Glu	Glu	Leu	Val	Lys	Asp	Cys
		35					40					45			
Ile	Leu	Phe	Val	Leu	Lys	Gly	Ser	Leu	Gln	Phe	Ser	Cys	Asn	Gly	Phe
	50					55					60				
Gln	Phe	Thr	Val	Ser	Ser	Gly	Glu	Met	Val	Phe	Phe	Cys	Arg	Asp	Ser
65					70					75				80	
Leu	Phe	Asn	Thr	Gln	Ser	Leu	Glu	Lys	Cys	Glu	Val	Val	Ala	Ala	Leu
				85					90					95	
Phe	Glu	Gly	Gly	Val	Trp	Pro	Cys	Gln	Arg	Ala	Ser	Phe	Ser	Glu	Leu
			100					105						110	
Tyr	His	Leu	Arg	Glu	Ile	Val	Glu	Tyr	Arg	Met	Glu	Pro	Leu	Glu	Ile
		115					120						125		
Arg	Asp	Arg	Leu	Cys	Lys	Phe	Leu	Glu	Leu	Leu	Val	Cys	Tyr	Leu	Glu
	130					135					140				
Asp	Gly	Ala	Asn	Cys	Ile	His	Phe	His	Glu	Ile	Lys	Leu	Lys	Glu	Leu
145					150					155				160	
Phe	Trp	Asn	Ile	Arg	Phe	Tyr	Tyr	Ser	Arg	Gln	Glu	Leu	Ala	Asn	Phe
				165					170					175	
Phe	Tyr	Met	Ile	Ile	Gly	Arg	Ser	Gln	Asp	Phe	Lys	Asn	Lys	Val	Leu
			180					185					190		
Asn	Asn	Tyr	Lys	Ser	Cys	Arg	Thr	Val	Lys	Glu	Leu	Ala	Ser	Ala	Cys
		195					200						205		
Asp	Ile	Ser	Leu	Ser	Ala	Phe	Lys	Arg	Gln	Phe	Ser	Ala	Glu	Phe	Gly
	210					215					220				
Glu	Ala	Pro	Ala	Glu	Trp	Met	Gln	Lys	Gln	Leu	Leu	Gly	Glu	Ile	Lys
225					230					235				240	
Tyr	Lys	Leu	Ser	Val	Thr	Asp	Leu	Pro	Leu	Gly	Thr	Ile	Ala	Asn	Glu
				245					250					255	
Leu	Glu	Phe	Ser	Ser	Leu	Ala	His	Phe	Ser	Arg	Phe	Cys	Lys	Arg	Cys
		260						265					270		
Leu	Gly	Cys	Ser	Pro	Arg	Glu	Leu	Arg	Gln	Gln	Ile	Lys	Gly	Gly	
		275					280						285		

<210> 6732
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 6732

Ser	Asn	Glu	Thr	Met	Asn	Asn	Ser	Met	Met	Lys	Pro	Phe	Phe	Leu	Leu
1				5					10					15	
Val	Phe	Leu	Leu	Cys	Ser	Ala	Gly	Ala	Phe	Ser	Gln	Lys	Val	Ala	Leu
			20					25					30		
Lys	Asn	Asn	Leu	Ala	Tyr	Asp	Ala	Leu	Lys	Thr	Pro	Asn	Leu	Ser	Leu
		35					40					45			
Glu	Phe	Ser	Met	Gly	Arg	Lys	Trp	Thr	Leu	Asp	Thr	Gln	Val	Gly	Met
	50					55					60				
Asn	Phe	Phe	Phe	Tyr	Thr	Arg	Asp	Ala	Thr	Ser	Ser	Arg	Tyr	Lys	Ala
65					70					75				80	

Lys Lys Phe Ser His Trp Leu Val Gln Pro Glu Leu Arg Tyr Trp Thr
 85 90 95
 Cys Asp Val Phe Asn Gly Trp Phe Phe Gly Leu His Ala His Gly Gly
 100 105 110
 Gln Met Asn Ile Gly Gly Val Asp Val Pro Phe Val Leu Gln Lys Gly
 115 120 125
 Asp Gly Asn Met Lys Asp His Arg Tyr Glu Gly Tyr Phe Trp Gly Gly
 130 135 140
 Gly Leu Ser Ala Gly Tyr Gln Trp Val Leu Ser Asn Arg Phe Asn Ile
 145 150 155 160
 Glu Ala Ser Leu Gly Ile Gly Tyr Val His Ala Arg Tyr Asp Lys Tyr
 165 170 175
 Lys Cys Thr Thr Cys Gly Gln Lys Leu Gly Lys Gly Asp Ala Asp Tyr
 180 185 190
 Ile Gly Pro Thr Arg Ala Ala Ile Ser Ile Ile Tyr Met Leu Lys
 195 200 205

<210> 6733

<211> 96

<212> PRT

<213> B.fragilis

<400> 6733

Lys Ser Asp Ala Phe Ser Val Arg Ser Leu Ser His Pro Thr Asn Ile
 1 5 10 15
 Asn Pro Ala Lys Ser Asn Thr Thr Leu His Asn Val Asn Leu Leu Phe
 20 25 30
 Ile Phe Ile Phe Thr Thr Ile Ile Asp Lys Asn Asn Ile Ser Ile Asn
 35 40 45
 Leu Ala Lys Lys Asn Ile Asn His Leu Arg Gln Thr Asn Tyr Leu Ile
 50 55 60
 Asn Asn Asn Ile Phe Ile Glu Tyr Asn Thr Gln Pro Ile Ile Tyr Cys
 65 70 75 80
 Ala Lys Lys Lys Gln Asp Lys Ile Leu Leu Ile Ile Ile Leu Ala Leu
 85 90 95

<210> 6734

<211> 467

<212> PRT

<213> B.fragilis

<400> 6734

Lys Lys Ser Tyr Thr Tyr Lys Thr Tyr Arg Ser Leu Thr Asp Gly Ser
 1 5 10 15
 Gly Thr Asp Phe Pro Ser Phe Val Gln Phe Ser Arg Leu Val Thr Glu
 20 25 30
 Leu Phe Trp Ser Phe Ser Asp Leu Met His Ile Ser Leu Cys Phe Leu
 35 40 45
 Ser Arg Lys Gln Gly Ser Val Lys Cys Leu Thr Asn Lys Lys Leu Met
 50 55 60
 Ala Thr Val Lys Thr Val Leu Val Lys Gly Arg Ser Asn Arg Ser Gly
 65 70 75 80
 Lys Phe Pro Leu Val Val Gln Val Leu His Lys Arg Arg Lys Lys Val
 85 90 95
 Val Tyr Thr Gly Phe Ser Ile Pro Asp Thr Leu Phe Asp Pro Val Lys
 100 105 110
 Gly Arg Val Ile Asp Gly Gly Glu Asn Thr Pro Glu Ser Ile Arg Arg
 115 120 125
 Ile Asn Asn Arg Cys Glu Ser Ile Ser Arg Val Leu Leu Lys Cys Ile

130 135 140
 Ser Met Ile Glu Lys Lys Ser Arg Glu Tyr Glu Ile Glu Asp Val Phe
 145 150 155 160
 Arg Thr Tyr Gly Val Leu Thr Arg Glu Ala Gly Phe Tyr Phe Tyr Phe
 165 170 175
 Ser Arg Lys Ile Arg Glu Leu Arg Glu Ser Gly His Glu Gly Thr Ala
 180 185 190
 Arg Ala Tyr Ala Ser Ser Leu Arg Ser Met Gln Arg Tyr Leu Gly Lys
 195 200 205
 Lys Asp Phe Pro Phe Ile Lys Leu Ser Ser Arg Ile Ile Ser Asp Tyr
 210 215 220
 Gln Gly Lys Leu Leu Ala Ser Gly Ile Cys Asp Asn Thr Ile Gly Phe
 225 230 235 240
 Tyr Leu His Asn Ile Lys Ala Leu Phe Arg Lys Gly Cys Arg Glu Met
 245 250 255
 Gly Leu Glu Leu Pro Cys Pro Phe Arg Asp Ile Ser Ile Lys Thr Glu
 260 265 270
 Lys Thr Leu Lys Arg Ser Leu Asp Pro Val Val Ile Lys Thr Leu Ser
 275 280 285
 Ala Ile Glu Leu Glu Lys Asp Ser Pro Leu Ser Leu Ala Arg Asp Ile
 290 295 300
 Phe Met Phe Ser Phe Tyr Thr Arg Gly Met Ser Phe Val Asp Ile Ala
 305 310 315 320
 Leu Leu Lys Lys Arg His Val Phe Pro Gly Glu Ile Cys Tyr Arg Arg
 325 330 335
 His Lys Thr Asp Gln Leu Met Arg Val Gly Ile Asn Lys Glu Ile Ser
 340 345 350
 Arg Ile Leu Glu Arg Tyr Lys Asn Val Pro Gly Glu Tyr Ile Phe Pro
 355 360 365
 Leu Phe Pro Ala Glu Arg Asp Pro Tyr Ala Gly Tyr Arg Ser Ala Tyr
 370 375 380
 His Arg Ile Arg Tyr Ser Leu Gly Lys Ile Ser Arg Val Ile Gly Leu
 385 390 395 400
 Glu Phe Pro Leu Arg Leu His Ala Ala Arg His Ser Trp Ala Thr Ile
 405 410 415
 Ala Lys Val Asn Gly Ala Ser Val His Val Ile Gly Glu Cys Leu Gly
 420 425 430
 His Thr Ser Glu Lys Thr Thr Arg Ile Tyr Leu Lys Glu Leu Asp His
 435 440 445
 Ser Ala Leu Asp Ala Val Asn Asn Gln Val Ala Asp Phe Ile Leu Ala
 450 455 460
 Val Asp Asp
 465

<210> 6735

<211> 486

<212> PRT

<213> B.fragilis

<400> 6735

Asn Arg Leu Gln Ile Ile Ser Thr Phe Gly Gln Ala Arg Val Cys Cys
 1 5 10 15
 Arg Arg Ala Asn Leu Val Glu Ser Leu Gln Ile Gly Val Cys Gln Ser
 20 25 30
 Tyr Lys Ala Gly Ile Pro Phe Gly Arg Ser His Arg Ile Ser Tyr Lys
 35 40 45
 Ile Gln Thr Phe Gly Ser Glu Arg Ser Val Glu Glu Gln Val Gln Ile
 50 55 60
 Pro Val Phe Ile Arg Gln Gly Val Ile Pro Ser Gln Gly Glu Ile Gly

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65          70          75          80
Ile Gly Leu Ala Asp Asp Leu Ala Val Ala Thr Val Tyr His Leu Ile
      85          90          95
Ser Ile Tyr Ile Arg Val Ser Val Met Ser Val Phe Ile Gln Ala Gly
      100          105          110
Pro Phe Ile Ser Pro Lys Ser Thr Asp Gly Leu Thr Arg Leu Asp Asn
      115          120          125
Gly Gly Ile Ile Asn His Thr Gly Ser Arg Thr Gly Ala Val Asp Glu
      130          135          140
Ile Ile Leu Thr Thr Gly Lys Ala Phe His Ala Val Leu Gln Ile Ser
145          150          155          160
Thr Val Gln Gly Gly Gly Pro Leu Glu Pro Val Ile Leu His Asn Pro
      165          170          175
Gly Gly His Ala Gln Ile Asn Thr Thr Ile Thr Asp Phe Ala Val Ile
      180          185          190
His Pro Lys Arg Val Thr Ala Asp Ile Ser Gly Asp Thr Ser Phe Lys
      195          200          205
Gln Arg Ile Cys Ser Thr Leu Ile Glu Ile Val His Thr Glu Ile Gln
      210          215          220
Pro Pro Val Glu Gln Gly Glu Leu Gln Thr Gln Val Glu Leu Leu Gly
225          230          235          240
Leu Leu Pro Arg Lys Leu Gly Ser Arg Tyr Val Ile Cys Pro Ile Thr
      245          250          255
Gly Lys Ile Thr Val Gly Ser Lys Ile Val Cys Ser Ser Thr His Lys
      260          265          270
Ala His Gly Arg Val Arg Thr Asp Gly Leu Ala Thr His Asn Thr Ile
      275          280          285
Thr Gly Ala Lys Phe Asn Val Leu Asn Arg Gly Asn Ile Leu His Glu
      290          295          300
Ile Leu Ile Ala Gln Arg Pro Ser Cys Gly Asn Arg Arg Lys Val Pro
305          310          315          320
Pro Phe Leu Phe Gly Lys Ala Arg Arg Thr Val Gly Thr Lys Cys Ser
      325          330          335
Gly Lys His Ile Thr Ile Leu Lys Ile Val His Asp Thr Gly His Ser
      340          345          350
Arg His Gln Arg Pro Leu Leu Val Thr Ile Val Cys Ile Thr Arg Gly
      355          360          365
Ser His Thr His Ile Pro Pro Ala His Thr Leu Gly Gln Gln Val Val
      370          375          380
Thr Gly Tyr Thr His Cys Pro Gly Phe Gly Gly Gly His Leu Ile Tyr
385          390          395          400
Ser Arg Gly Cys Gln Met Met Val Ile Pro Gly Thr Cys Ile Cys Gln
      405          410          415
Ile Val Gly Ala Leu Gln His Gln Thr Ile Ser Ile Val Ile Ala His
      420          425          430
Thr Thr Leu Gly Pro His Ser Phe Gly Ala Glu Thr Ile Thr Phe Pro
      435          440          445
Val Ile Ile Val His Ala Ile Gly Cys Gly Glu Cys Gln Pro Leu His
      450          455          460
Tyr Ile Lys Ala Gln Ile Asn Thr Ser Val Glu Asn Ile Gly His Cys
465          470          475          480
Leu Ser Arg Leu Gln Leu
      485

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<210> 6736

<211> 342

<212> PRT

<213> B.fragilis

<400> 6736

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Ile Lys Arg Lys Met Arg Thr Ile Ala Cys Lys Thr Val Trp Ala Leu
1          5          10          15
Leu Ile Gly Val Ser Leu Val Leu Ser Leu Asn Ser Cys Ser Lys Asp
20          25          30
Pro Val Ile Pro Glu Asp Glu Thr Lys Asn Lys Leu His Glu Asp Pro
35          40          45
Ala Lys Met Thr Val Arg Leu Val Glu Cys His Leu His Ala Asp Trp
50          55          60
Asn Glu Ile Gln Lys Ala Gly Gly Pro His Gln Asn Pro Glu Ser Pro
65          70          75          80
Ala Arg Tyr Met Lys Arg Val Gln Glu Ile Thr Tyr Glu Leu Lys Thr
85          90          95
Gly Ser Gly Trp Thr Leu Ala Glu Gly Ser Gln Gly Lys Phe Tyr Val
100         105         110
Gln Lys Asn Gly Glu Tyr Lys Asn Gly Asn Asn Phe Thr Pro Ala Pro
115         120         125
Val Tyr Leu Met Phe Ile Tyr Tyr Tyr Asn Ser Lys Gly Glu Leu Met
130         135         140
Asn Gly Gln Phe Val Glu Asn Gly Gln Glu Asn Ile His Gln His Phe
145         150         155         160
Phe Thr Pro Glu Asn Val Arg Pro Thr Phe Asp Gly Lys Pro Glu Ala
165         170         175
Asp Asp Asn Asp Pro Glu Ala Leu Val Asp Tyr Leu Tyr Val Asp Thr
180         185         190
Thr Pro Trp Asp Lys Thr Lys His Asp Asn Glu Ala Glu Ile Thr Gly
195         200         205
Ser Thr Asn Pro Val Gly Leu Lys Gly Val Ile Arg Phe Leu Lys Asp
210         215         220
Arg Lys Glu Phe Asp Leu Lys Leu Arg Leu Tyr His Gly Tyr Asn Ser
225         230         235         240
Lys Lys Asn Pro Gln Thr Asn Gly Phe Asp Pro Phe Tyr Lys Pro Ser
245         250         255
Gly Val Leu Ile Gln Arg Gly Thr Trp Asp Ile Asn Leu Ser Ile Pro
260         265         270
Val Val Val Phe Trp Ser Arg Glu Glu Phe Val Asp Val Asp Pro Glu
275         280         285
Ala Asp Val Asn Leu Ile Gly Glu Asp Ser Leu Asp Glu Asp Ser Asn
290         295         300
Arg Thr Leu His Ser Ile Met Lys Thr Phe Ser Leu Thr Trp Lys Glu
305         310         315         320
Ala Leu Glu Glu Phe Ile Ser Tyr Thr Tyr Gln Ala Gly Asp Val Glu
325         330         335
Ala Gly Ser Ile Trp Leu
340

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<210> 6737

<211> 65

<212> PRT

<213> B.fragilis

<400> 6737

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Cys His Gly Asn Asp Leu His Thr Pro Phe Pro Tyr Gln Leu Lys Ser
1          5          10          15
His Val Gln Val Thr Tyr Pro Ser Phe Arg Lys His Met Thr Gly Lys
20          25          30
Ala Gly Ala Glu Asn Thr Glu Lys Thr Ile Gln Asn Leu Val His Asp
35          40          45
Ile Lys Lys Leu Tyr Ile Glu Asn Gln Arg Ser Asp Pro Pro Ile Asn

```

50

55

60

Trp
65

<210> 6738
<211> 260
<212> PRT
<213> B.fragilis

<400> 6738

Arg	Gly	Glu	Asp	Ala	Ala	Arg	Pro	Arg	Ala	Thr	Ser	Ala	Arg	Arg	Arg
1				5					10				15		
Ala	Pro	Ala	Pro	Thr	His	Asp	Ala	Asp	Arg	Ser	Thr	Arg	Ala	Pro	Arg
			20					25					30		
Thr	Thr	Gly	Arg	Ala	Pro	Pro	Ala	Arg	Thr	Gly	Thr	Pro	Gln	Pro	Thr
		35					40					45			
Thr	Pro	Asp	Arg	Ala	Ala	Arg	Arg	Ala	Arg	Gly	Ala	Arg	Glu	Arg	Gly
	50					55				60					
Arg	Lys	Arg	Arg	Arg	Lys	Thr	Arg	Lys	Lys	Lys	Glu	Glu	Lys	Lys	Lys
65					70				75					80	
Lys	Thr	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				85				90					95		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			100					105					110		
Lys	Lys	Lys	Lys	Lys	Asn	Lys	Lys	Lys	Lys	Lys	Lys	Arg	Lys	Lys	Lys
			115				120					125			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			130				135					140			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			145				150					155			160
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				165				170					175		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			180					185					190		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			195					200					205		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			210				215					220			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			225				230					235			240
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				245				250					255		
Thr	Pro	Met	Asn												
			260												

<210> 6739
<211> 109
<212> PRT
<213> B.fragilis

<400> 6739

Gln	Thr	His	Arg	Gly	Cys	Thr	Glu	Glu	Met	Arg	Glu	Lys	Asn	Asp	Asp
1				5					10				15		
Asp	Ile	Cys	Phe	Pro	Gly	Asp	Lys	Ile	Pro	Tyr	Arg	Pro	Ala	Ser	Arg
			20					25					30		
Asn	Ile	Ile	Val	Tyr	Lys	Asn	Pro	Cys	Leu	Asp	Lys	Arg	Gly	Glu	Arg
			35				40					45			
Lys	Glu	Thr	Asp	Gly	Thr	Ile	Phe	Arg	Arg	Ile	Val	Thr	Gly	Val	Ser
	50					55					60				

Leu Phe Val Met Gly Tyr Ala Arg Met Phe Pro Val Asn Met Lys Ser
 65 70 75 80
 Phe His Glu Glu Lys Gly His Gln Cys Gln Gln Gln His Thr Cys Tyr
 85 90 95
 Asp Ser Pro Leu Ser Leu Ser Phe Phe Arg Thr Ile His
 100 105

<210> 6740

<211> 259

<212> PRT

<213> B.fragilis

<400> 6740

Gly Ala Ala Arg Thr Pro Arg Asp Arg Ala Gln Gln Ala Arg Ala Asp
 1 5 10 15
 Glu Pro Arg Arg Pro Arg Thr Thr Arg Thr Gly Ala His Glu His Arg
 20 25 30
 Ala Arg Gln Ala Gly Pro Arg Pro Arg Glu Gln Ala Arg Arg Asn Pro
 35 40 45
 Gln Pro Gln Thr Ala Arg Arg Ala Ala His Gly Glu Gln Gly Arg Glu
 50 55 60
 Gly Gly Arg Asp Gly Gly Lys Arg Glu Lys Lys Arg Lys Lys Lys Lys
 65 70 75 80
 Lys Lys Pro Arg Lys Lys Lys Lys Lys Lys Lys Lys Lys Arg Lys
 85 90 95
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 100 105 110
 Lys Lys Lys Lys Lys Lys Thr Lys Lys Lys Lys Lys Lys Gly Lys Lys
 115 120 125
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 130 135 140
 Lys Lys Lys Arg Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 145 150 155 160
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 165 170 175
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 180 185 190
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 195 200 205
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 210 215 220
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 225 230 235 240
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 245 250 255
 Lys His Gln

<210> 6741

<211> 512

<212> PRT

<213> B.fragilis

<400> 6741

Phe Leu Asn Gly Arg Ser Gln Pro Lys Leu Thr Pro Glu Asn Phe Phe
 1 5 10 15
 Ser Thr Gln Asp Glu Leu Asn Met Ser Ile Tyr Ala Leu Tyr Gln Lys
 20 25 30
 Val Asn Leu Ser Gln Val Tyr Thr Asn Met Gln Leu Ser Gln Trp Gln

	35					40					45				
Gly	Asp	Asp	Ile	Thr	Thr	Asn	Pro	Gly	Ser	Asn	Lys	Gln	Ser	Ala	Ala
	50					55					60				
Glu	Met	Asp	Lys	Phe	Ala	Ala	Ala	Asn	Asn	Asn	Lys	Gly	Val	Lys	Asp
65					70					75					80
Ala	Trp	Asn	Met	His	Tyr	Ala	Ile	Val	Lys	Ala	Ala	Asn	Leu	Ile	Ile
				85					90					95	
Gln	Gly	Ala	Ser	Lys	Thr	Pro	Thr	Thr	Gln	Asp	Glu	Ile	Asn	Ile	Gly
			100					105					110		
Leu	Gly	Gln	Ala	Lys	Phe	Trp	Arg	Ala	Tyr	Ala	Tyr	Phe	Thr	Leu	Val
		115					120					125			
Arg	Leu	Trp	Gly	Pro	Leu	Pro	Met	Asn	Leu	Asp	Asn	Val	Asn	Asp	Asp
	130					135					140				
Tyr	Thr	Lys	Pro	Leu	Ser	Pro	Val	Glu	Glu	Val	Tyr	Gly	His	Ile	Val
145					150					155					160
Gln	Asp	Leu	Thr	Glu	Ala	Glu	Ala	Val	Leu	Pro	Thr	Gly	Tyr	Ser	Gly
				165					170					175	
Ser	Pro	Arg	Phe	Leu	Asn	Gly	Val	Asn	Val	Tyr	Val	Thr	Arg	Gln	Ala
			180					185					190		
Ala	Lys	Ser	Thr	Leu	Ala	Ala	Val	Tyr	Met	Ala	Met	Ala	Gly	Trp	Pro
		195					200					205			
Met	Asn	Lys	Thr	Glu	Tyr	Tyr	Ala	Lys	Ala	Ala	Glu	Lys	Ala	Lys	Glu
	210					215					220				
Val	Ile	Glu	Gly	Val	Asn	Arg	Gly	Glu	Tyr	Glu	Tyr	Lys	Leu	Asp	Lys
225					230					235					240
Asp	Tyr	Lys	Asp	Val	Tyr	Ala	Met	Ser	Asn	Asn	Tyr	Asn	Asn	Glu	Thr
				245					250					255	
Val	Leu	Gly	Ile	Asn	Tyr	Ser	Pro	Phe	Val	Asp	Trp	Ala	Gln	Asp	Ser
			260					265					270		
Glu	Leu	Thr	Ser	Cys	Asn	Gln	Tyr	Glu	Ser	Leu	Gly	Gly	Trp	Gly	Asp
		275					280					285			
Ala	Trp	Gly	Glu	Ile	Arg	Phe	Trp	Lys	Glu	Phe	Pro	Asp	Gly	Pro	Arg
		290				295					300				
Lys	Asp	Ala	Thr	Tyr	Asp	Pro	Lys	Ile	Arg	Leu	Lys	Asp	Gly	Thr	Leu
305					310					315					320
Val	Asp	Trp	Trp	Glu	Leu	Lys	Glu	Asp	Gly	Thr	Pro	Val	Val	Pro	Glu
				325					330					335	
His	His	Pro	Met	Phe	Ser	Ile	Phe	Ser	Val	Asn	Trp	Asp	Pro	Ala	Ser
			340					345					350		
Lys	Val	Asn	Thr	Ser	Ala	Pro	Tyr	Asp	Tyr	Thr	Lys	Pro	Ala	Ser	Gln
		355					360					365			
Asn	Met	Cys	Asn	Asp	His	Arg	His	Arg	Ile	Ile	Arg	Tyr	Ser	Glu	Val
	370					375					380				
Leu	Leu	Trp	Tyr	Ala	Glu	Ala	Lys	Ala	Arg	Thr	Gln	Thr	Asp	Glu	
385					390					395					

<210> 6742
 <211> 278
 <212> PRT
 <213> B.fragilis

<400> 6742

Ala	Arg	Arg	Gly	Arg	Arg	Ala	Thr	Ala	Arg	Asn	Lys	Arg	Ala	Pro	Thr
1				5					10					15	
Ser	Pro	Gly	Ala	His	Ala	Arg	Arg	Gly	Gln	Glu	His	Thr	Ser	Thr	Ala
			20					25					30		
His	Asp	Arg	Gln	Gly	Pro	Ala	Arg	Ala	Asn	Arg	His	Ala	Ala	Thr	His
			35				40					45			
Asn	Pro	Arg	Pro	Arg	Gly	Ala	Pro	Arg	Thr	Gly	Ser	Lys	Gly	Glu	Arg
			50			55					60				
Glu	Glu	Glu	Thr	Glu	Glu	Asn	Ala	Lys	Lys	Lys	Gly	Arg	Lys	Lys	Lys
65					70				75						80
Lys	Asn	Gln	Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Glu	Lys
				85				90						95	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			100				105						110		
Lys	Lys	Lys	Lys	Lys	Lys	Gln	Lys	Lys	Lys	Lys	Lys	Lys	Glu	Lys	Lys
			115				120						125		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			130				135					140			
Lys	Lys	Lys	Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
145					150				155						160
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				165				170						175	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			180					185					190		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			195				200						205		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			210				215					220			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
225					230				235						240
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				245				250						255	
Asn	Thr	Asn	Glu	Leu	Thr	Cys	Pro	Lys	Ile	Thr	Leu	Gln	Leu	Leu	Ser
			260					265					270		
Ile	Ser	Leu	Ile	Ile	Leu										
			275												

<210> 6743
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 6743

Arg	Arg	Trp	Gly	Met	Met	Arg	Arg	Met	Asp	Val	His	Glu	Ala	Ala	Asn
1				5					10					15	
Arg	Arg	Leu	Lys	Ile	Ile	Phe	Asp	Tyr	Phe	Asp	Tyr	Val	Tyr	Val	Ser
			20					25					30		
Phe	Ser	Gly	Gly	Lys	Asp	Ser	Gly	Ile	Leu	Leu	His	Leu	Cys	Met	Asp
			35				40					45			
Tyr	Ile	Arg	Met	His	Ala	Pro	Gly	Arg	Lys	Leu	Gly	Val	Phe	His	Met
			50			55					60				
Asp	Tyr	Glu	Val	Gln	Tyr	Arg	Gln	Ser	Thr	Glu	Tyr	Val	Glu	Arg	Met

65		70		75		80									
Phe	Ser	Asn	Asn	Arg	Asp	Ile	Leu	Glu	Val	Phe	His	Cys	Cys	Val	Pro
			85						90					95	
Phe	Lys	Val	Pro	Thr	Cys	Thr	Ser	Met	Tyr	Gln	Gln	Tyr	Trp	Arg	Pro
		100						105					110		
Trp	Gln	Glu	Gly	Tyr	Gln	Asn	Ile	Trp	Val	Arg	Gln	Met	Pro	Gly	Thr
	115						120					125			
Ala	Leu	Thr	Val	Lys	Asp	Phe	Asp	Phe	Trp	Asn	Asp	Ser	Leu	Trp	Asp
	130					135					140				
Tyr	Asp	Phe	Gln	Ser	Leu	Phe	Pro	Ser	Trp	Ile	Arg	Arg	Lys	Lys	Gly
145					150					155					160
Cys	Lys	Arg	Val	Cys	Cys	Leu	Val	Gly	Ile	Arg	Thr	Gln	Glu	Ser	Phe
			165						170					175	
Asn	Arg	Trp	Arg	Ala	Ile	His	Ser	Asp	Lys	Asn	Tyr	Arg	Lys	Leu	Ala
			180					185					190		
Asn	Tyr	Lys	Trp	Thr	His	Arg	Val	Gly	Tyr	Tyr	Thr	Tyr	Asn	Ala	Tyr
		195					200					205			
Pro	Met	Tyr	Asp	Trp	Lys	Thr	Thr	Asp	Val	Trp	Thr	Gly	Tyr	Ala	Arg
	210					215					220				
Tyr	Gly	Trp	Asp	Tyr	Asn	Arg	Leu	Tyr	Asp	Leu	Tyr	Tyr	Gln	Ala	Gly
225					230					235					240
Ile	Pro	Leu	Ser	Arg	Gln	Arg	Val	Ala	Ser	Pro	Phe	Ile	Ser	Gln	Ala
			245						250					255	
Val	Ser	Thr	Leu	His	Leu	Tyr	Lys	Val	Ile	Asp	Pro	Asp	Thr	Trp	Gly
		260						265					270		
Arg	Met	Val	Ser	Arg	Val	Asn	Gly	Val	Ser	Phe	Ala	Gly	Met	Tyr	Gly
		275					280					285			
Asn	Thr	Val	Ala	Met	Gly	Trp	Arg	Ser	Ile	Ser	Cys	Pro	Asp	Gly	Phe
	290					295					300				
Thr	Trp	Lys	Glu	Tyr	Met	Tyr	Phe	Leu	Leu	Asp	Thr	Leu	Pro	Arg	Ala
305					310					315					320
Thr	Arg	Glu	Asn	Tyr	Leu	Glu	Lys	Leu	Arg	Val	Ser	Gln	Lys	Phe	Trp
			325						330					335	
Arg	Glu	Lys	Gly	Gly	Cys	Leu	Gly	Glu	Glu	Thr	Ile	Gly	Lys	Leu	Arg
		340						345					350		
Ala	Ala	Gly	Val	Pro	Phe	Thr	Val	Glu	Glu	Cys	Thr	Thr	Tyr	Arg	Thr
		355					360					365			
Asp	Lys	Arg	Pro	Val	Arg	Met	Glu	Tyr	Ile	Asp	Glu	Ile	Asp	Ile	Pro
	370					375					380				
Glu	Phe	Arg	Glu	Ile	Pro	Thr	Tyr	Lys	Arg	Met	Cys	Val	Cys	Ile	Leu
385					390					395					400
Lys	Asn	Asp	His	Thr	Cys	Lys	Tyr	Met	Gly	Phe	Thr	Gln	Thr	Lys	Arg
			405						410					415	
Glu	Arg	Glu	Met	Lys	Glu	Arg	Val	Leu	Lys	Arg	Tyr	Lys	Leu		
		420						425					430		

<210> 6744

<211> 176

<212> PRT

<213> B.fragilis

<400> 6744

Leu	Ile	Phe	Phe	Leu	Ala	Arg	Phe	Ile	Asp	Ile	Leu	Phe	Leu	Ser	Ile
1			5						10					15	
Ile	Val	Val	Asn	Ile	Asn	Met	Lys	Ser	Lys	Phe	Thr	Leu	Trp	Ser	Val
		20					25					30			
Val	Leu	Leu	Leu	Ala	Gly	Phe	Ile	Phe	Val	Gly	Cys	Asp	Asn	Glu	Arg
	35					40					45				
Thr	Glu	Asn	Ala	Ser	Asp	Phe	Gln	Thr	Gly	Ile	His	Lys	Ile	Val	Ile

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      50              55              60
Gln Gln Ser Gly Asp Thr Asp Ser Phe Glu Val Ser Val Ser Ile Gly
65              70              75              80
Gly Ala Asp Lys Gly Gly Pro Ala Lys Leu Tyr Asn Asp Lys Gly Glu
      85              90              95
Tyr Ile Gly Asp Ser Tyr Ser Ala Gln Ile Arg Thr Ala Thr Met Ser
      100              105              110
Cys Cys Thr Asn Gly Asn Ala Phe Phe Met Thr Cys Ala Gly Ser Val
      115              120              125
Ser Ser Ile Ser Glu Ala Gly Lys Arg Leu His Ile Thr Val Ile Gly
      130              135              140
Tyr Ile Asp Asp Lys Glu Val Asn Arg Leu Glu Lys Glu Tyr Ile Thr
145              150              155              160
Asp Gly Asn Thr Leu Ile Glu Thr Phe Ser Val Ser Thr Lys Glu Ile
      165              170              175

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<210> 6745

<211> 785

<212> PRT

<213> B.fragilis

<400> 6745

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Pro Val Tyr Ile Phe Ser Ser Met Thr Phe His Ala Tyr Leu Gln Tyr
1      5      10      15
Val Cys Leu Leu Val Val Cys Leu Cys Thr Leu Pro Ser Pro Met Glu
      20      25      30
Ala Arg Val Gln Ala Asp Arg Gln Ser Thr Gly Thr Arg Asp Thr Leu
      35      40      45
Leu Val Ile Asp Gln Glu Ser Gly Leu Pro Ile Glu Gly Ala Tyr Ile
      50      55      60
Leu Thr Arg Glu Arg Leu Leu Val Ser Ser Pro Arg Gly Met Ile Val
65      70      75      80
Phe Gly His Gly Thr Cys Phe Met Asp Thr Val Leu Val Gln Cys Leu
      85      90      95
Gly Tyr Gly Ser Arg Arg Val Pro Leu Asn Glu Val Phe Lys Glu Ser
      100      105      110
Ser Ile His Thr Val Cys Leu Ser Pro Asp Ile Gln Lys Leu Gly Glu
      115      120      125
Val Val Val Thr Gly Glu Arg Ala Gly Ala Ser Pro Asn Val Val Ser
      130      135      140
Arg Arg Leu Ser Ser Pro Glu Ile Arg Asn Ala Leu Gly Thr Ser Leu
145      150      155      160
Ala Thr Leu Leu Glu Arg Val Ser Gly Val Ser Ser Ile Ser Thr Gly
      165      170      175
Thr Thr Val Ser Lys Pro Val Ile Gln Gly Met Tyr Gly Asn Arg Ile
      180      185      190
Leu Ile Ile His Asn Gly Ala Arg Gln Thr Gly Gln Gln Trp Gly Ala
      195      200      205
Asp His Ala Pro Glu Val Asp Met Asn Gly Ser Ser Ser Val Ser Val
      210      215      220
Ile Lys Gly Ser Asp Ala Val Arg Tyr Gly Ser Asp Ala Leu Gly Gly
225      230      235      240
Ile Ile Val Met Glu Gln Ser Pro Leu Pro Phe Arg Lys Arg Ser Leu
      245      250      255
Gln Gly Gly Ile Ser Ala Leu Tyr Gly Ser Asn Gly Arg Arg Tyr Val
      260      265      270
Ala Thr Gly Gln Leu Glu Gly Ala Phe Pro Gly Asp Phe Ala Trp Arg
      275      280      285
Leu Gln Gly Thr Trp Ser Asn Ser Gly Asp Arg Ser Thr Ala His Tyr

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290	295	300
Leu Leu Asn Asn Thr Gly Thr Arg Glu Tyr His Ala Ser Ala Ser Leu		
305	310	315
Gly Tyr Asp Arg Gly Arg Leu Arg Val Glu Gly Phe Tyr Ser Arg Phe		
	325	330
Tyr Ser Arg Thr Gly Val Met Leu Ser Ala Gln Met Gly Ser Glu Asp		
	340	345
Leu Leu Ala Glu Arg Ile Arg Leu Gly Arg Pro Leu His Thr Asp Pro		
	355	360
Phe Ser Arg Gly Ile Arg Ala Pro Cys Gln Glu Val Thr His Gln Ile		
	370	375
Thr Phe Gly Arg Met Arg Leu Gly Met Lys Lys Gly Gly Ser Ile His		
385	390	395
Trp Gln Ser Thr Trp Gln Lys Asp Asp Arg Gln Glu Asn Arg Val Arg		
	405	410
Arg Leu Asp Ser Asn Ile Pro Ala Val Ser Leu His Leu Asn Ser Phe		
	420	425
Gln His Leu Leu Arg Trp Lys Arg Asp Tyr Arg Ser Trp Gln Val Glu		
	435	440
Ala Gly Gly Gln Val Met Phe Ile Glu Asn His Ser Arg Ala Gly Thr		
	450	455
Gly Phe Val Pro Val Ile Pro Asn Tyr Thr Glu Thr Gln Ala Gly Ile		
465	470	475
Tyr Gly Ile Gly Lys Tyr His Leu Ala Arg Gly Gly Val Glu Ala Gly		
	485	490
Leu Arg Leu Asp Met Gln Glu Thr Arg Ala Ser Gly Tyr Asp Trp Thr		
	500	505
Gly Ser Pro Tyr Gly Gly Thr Arg Lys Phe Asn Asn Val Ser Tyr Ser		
	515	520
Leu Gly Gly His Tyr Gln Leu Ser Arg Arg Trp Arg Leu Thr Ser Asn		
	530	535
Phe Gly Leu Ala Trp Arg Ala Pro His Val Tyr Glu Leu Tyr Ser Asn		
545	550	555
Gly Asn Glu Leu Gly Ser Gly Met Phe Val Arg Gly Asp Ser Ala Met		
	565	570
His Ser Glu Arg Ser Tyr Lys Trp Ile Ser Ser Leu Arg Tyr Gly Asp		
	580	585
Gly Met Phe Ser Val Cys Leu Asp Gly Tyr Leu Gln Trp Val Asp Gly		
	595	600
Tyr Ile Tyr Asp Gly Pro Glu Lys Glu Thr Val Thr Val Ile Ser Gly		
	610	615
Ala Tyr Pro Val Phe Gln Tyr Arg Gln Thr Pro Ala Phe Phe Arg Gly		
625	630	635
Met Asp Phe Asp Leu Arg Phe Thr Pro Gly Gly Ser Trp Asp Tyr His		
	645	650
Ala Val Val Ser Phe Ile Arg Ala Asn Glu Arg Thr Lys Gly Asn Tyr		
	660	665
Leu Pro Tyr Ile Pro Ser Phe Arg Phe Ser His Glu Leu Ala Trp Ile		
	675	680
His Glu Thr Lys Ser His Leu Arg Leu Arg Leu Asn Ile Arg His Arg		
	690	695
Phe Thr Ala Lys Gln Arg Arg Phe Asp Pro Asp Thr Asp Leu Ile Pro		
705	710	715
Tyr Thr Pro Pro Ala Tyr His Leu Leu Gly Phe Asp Ala Ala Leu Glu		
	725	730
Leu Pro Val Lys Arg Gly His Gln Val Arg Phe Met Leu Ser Ala Asp		
	740	745
Asn Leu Leu Asn Arg Glu Tyr Lys Glu Tyr Thr Asn Arg Ser Arg Tyr		
	755	760
		765

Tyr Ala His Asp Met Gly Arg Asp Val Arg Cys Gly Val Asn Trp Ile
 770 775 780

Phe
 785

<210> 6746

<211> 138

<212> PRT

<213> B.fragilis

<400> 6746

Arg Ile Gly Ile Met Asn Ile Leu Lys Leu Gln Gly Leu Asp Gly Arg
 1 5 10 15
 Leu Phe Asp Leu Val Ala Pro Leu Val Met Asn Pro Ala Val Leu Arg
 20 25 30
 Gln Asn Asn Asn Tyr Pro Phe Lys Thr Thr Arg Asn His Val Trp Tyr
 35 40 45
 Ile Ala Met Asp Glu Gln Arg Val Leu Gly Phe Met Pro Val Lys Met
 50 55 60
 Thr Leu Thr Asn Asn Cys Ile Asp Asn Tyr Tyr Ile Ser Gly Asp Asn
 65 70 75 80
 Ser Ser Val Ile Glu Val Leu Leu Asp Arg Ile Ile His Asp Phe Ser
 85 90 95
 Ser Asp Gly Ser Leu Val Ala Val Val His Glu Arg His Val Glu Asp
 100 105 110
 Phe Ser Met Lys Asn Phe Ile Pro Cys Val Glu Trp Lys Lys Tyr Val
 115 120 125
 Lys Met Arg Tyr His Glu Gly Gly Gly Ala
 130 135

<210> 6747

<211> 177

<212> PRT

<213> B.fragilis

<400> 6747

Ile Val Ile Val Met Ser Ser Phe Lys Ser Pro Ala Tyr Asn Val Lys
 1 5 10 15
 Ala Val Pro Val Glu Lys Ile Val Ala Asn Ser Tyr Asn Pro Asn Val
 20 25 30
 Val Ala Pro Pro Glu Met Lys Leu Leu Glu Leu Ser Ile Trp Glu Asp
 35 40 45
 Gly Tyr Thr Met Pro Leu Val Cys Tyr Tyr Arg Glu Glu Glu Asp Ile
 50 55 60
 Tyr Glu Leu Val Asp Gly Tyr His Arg Tyr Leu Val Met Lys Thr Ser
 65 70 75 80
 Val Arg Ile Tyr Lys Arg Glu Asn Gly Leu Leu Pro Val Thr Val Ile
 85 90 95
 Asn Lys Asp Ile Ser Asn Arg Met Ala Ser Thr Ile Arg His Asn Arg
 100 105 110
 Ala Arg Gly Met His Ser Leu Glu Leu Met Thr Gly Ile Val Ala Glu
 115 120 125
 Leu Ser Lys Ser Gly Met Ser Asp Ser Trp Ile Met Arg Asn Ile Gly
 130 135 140
 Met Asp Lys Asn Glu Leu Leu Arg Phe Lys Gln Ile Ser Gly Leu Ala
 145 150 155 160
 Glu Leu Phe Arg Asp Arg Ser Phe Gly Leu Ser Asp Asp Trp Leu Glu
 165 170 175
 Glu

<210> 6748

<211> 92

<212> PRT

<213> B.fragilis

<400> 6748

Ser Ser Cys Val Gly Trp Asn Ser Leu Phe Ile Asn Leu Gln Ala Ala
1 5 10 15

Gly Gly Ala Ala Phe Phe Val Leu Cys Asn Glu Lys Ile Pro Ser Ala
20 25 30

Met Leu Asn Pro Arg Gly Leu Leu Gly Asp Val Leu Gly His Ala Leu
35 40 45

Pro Ser His Pro Val Pro Phe Phe Met Phe Gly Lys Leu Lys Lys Ile
50 55 60

Leu Tyr Ile Gln Asp Val Pro Phe Pro Tyr Arg Arg Val Trp Asn Arg
65 70 75 80

Leu Pro Val Phe Arg Ala Ile Phe Pro Leu Gly Tyr
85 90

<210> 6749

 $\langle 211 \rangle$ 501

<212> PRT

<213> B.fragilis

<400> 6749

Asn Leu Pro Leu Ala Thr Lys Pro Pro Leu Pro Ser Ile Ala Phe Ala
1 5 10 15

His Leu Ser Ile Ala Ala Tyr Phe Cys Phe Tyr Lys Ile Lys Arg Ser
20 25 30

Thr Ser Met Thr Asn Val Asn Arg Ile Thr Leu Ile Thr Val Cys Leu
35 40 45

Ala Ala Ile Leu Pro Gly Asn Gly Leu Trp Ala Gln Gln Thr Glu Ala
50 55 60

Thr Gly Thr Ser Gln Thr Ala Asp Ser Val Ser Met Pro Ala Gln Trp
65 70 75 80

Asp Leu Gln Ser Cys Ile Asp Tyr Ala Leu Gln Gln Asn Ile Ser Ile
85 90 95

Arg Arg Asn Arg Ile Asn Ala Gln Ser Thr Gln Val Asp Val Lys Thr
100 105 110

Ala Lys Ala Ala Leu Phe Pro Ser Leu Ser Phe Ser Ser Ser Gln Asn
115 120 125

Leu Val Asn Arg Pro Tyr Gln Glu Ser Ser Ser Ile Ile Ser Gly Ser
130 135 140

Glu Val Leu Lys Ser Ser Asn Lys Thr Thr Tyr Asn Gly Asn Tyr Gly
145 150 155 160

Leu Asn Ala Gln Trp Thr Val Tyr Asn Gly Ser Lys Arg Leu Lys Thr
165 170 175

Ile Glu Gln Glu Lys Leu Asn Asn Arg Val Ala Asp Leu Asp Val Ala
180 185 190

Thr Ser Glu Asn Asp Ile Glu Gln Ser Ile Ala Gln Val Tyr Ile Gln
195 200 205

Ile Leu Tyr Ala Ala Glu Ser Val Lys Val Asn Glu Asn Thr Leu Gln
210 215 220

Val Ser Glu Ala Gln Arg Asp Arg Gly Lys Gln Leu Leu Asp Ala Gly
225 230 235 240

Ser Ile Ala Arg Ser Asp Tyr Ala Gln Leu Glu Ala Gln Val Ser Thr
245 250 255

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Asp Arg Tyr Gln Leu Val Thr Ala Gln Ala Thr Leu Gln Asp Tyr Lys
      260      265      270
Leu Gln Leu Lys Gln Leu Leu Glu Leu Asp Gly Glu Gln Glu Met Gln
      275      280      285
Val Tyr Leu Pro Ala Leu Gly Asp Glu Asn Val Leu Ser Pro Leu Pro
      290      295      300
Thr Lys Thr Asp Val Phe Arg Ser Ala Val Ala Leu Arg Pro Glu Ile
      305      310      315      320
Glu Ala Ser Lys Leu Ser Val Glu Ala Ser Glu Leu Gly Ile Gly Ile
      325      330      335
Ala Lys Ser Gly Tyr Leu Pro Ser Val Ser Leu Thr Ala Gly Ile Gly
      340      345      350
Thr Asn His Thr Ser Gly Ser Asp Phe Thr Phe Gly Glu Gln Val Lys
      355      360      365
Asn Gly Trp Asn Asn Ser Ile Gly Leu Ser Ile Ser Val Pro Ile Phe
      370      375      380
Asn Asn Arg Gln Thr Lys Ser Ala Val Glu Lys Ala Lys Leu Gln Tyr
      385      390      395      400
Gln Thr Ser Gln Leu Thr Leu Leu Asp Glu Gln Lys Thr Leu Tyr Lys
      405      410      415
Thr Ile Glu Gly Leu Trp Leu Asp Ala Asn Ser Ala Gln Gln Arg Tyr
      420      425      430
Ala Ala Ala Ile Glu Lys Leu His Ser Thr Gln Thr Ser Tyr Glu Leu
      435      440      445
Val Ser Glu Gln Phe Asn Ala Gly Met Lys Asn Thr Val Glu Leu Leu
      450      455      460
Thr Glu Lys Asn Asn Leu Leu Gln Ala Gln Gln Glu Leu Leu Gln Ser
      465      470      475      480
Lys Tyr Met Ala Ile Leu Asn Thr Gln Leu Leu Lys Phe Tyr Gln Gly
      485      490      495
Asp Lys Ile Thr Leu
      500

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<210> 6750
 <211> 61
 <212> PRT
 <213> B.fragilis

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<400> 6750
Lys Lys Arg Pro Thr Phe Thr Gly Arg Thr Phe Phe Val Leu Phe Glu
1      5      10      15
Tyr Val Ile Tyr Ile Gln Gln Leu Asn Ser Met Ile Ile Lys Ile Thr
      20      25      30
Thr Gln Gln Asn Gly Ile Arg Glu Asn His Phe Gly Arg Ile Gly Leu
      35      40      45
Ser His Leu Asn Val Thr Tyr Val Ile Ile Met Thr Asn
      50      55      60

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<210> 6751
 <211> 518
 <212> PRT
 <213> B.fragilis

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<400> 6751
Gly Lys Asn Pro Ala Phe Asn Leu Lys Arg Gly Ser Leu Tyr Pro Ile
1      5      10      15
Ser Gly Val Phe Ser Gln Ala Cys Asp Glu Ile Gly Met Leu Phe Trp
      20      25      30
Ala Glu Asn Ala Phe Trp Gly Ile Gly Gly His Lys Gly Asp Asp Tyr

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<210> 6752
<211> 496
<212> PRT
<213> B.fragilis
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Ile	His	Ile	Thr	Ile	Met	Ala	Thr	Gln	Asn	Lys	Thr	Asp	Ile	Gly	Leu
1				5					10					15	
Ile	Gly	Leu	Ala	Val	Met	Gly	Glu	Asn	Leu	Ala	Leu	Asn	Met	Glu	Ser
			20					25					30		
Arg	Gly	Trp	Ser	Val	Ser	Val	Tyr	Asn	Arg	Thr	Val	Pro	Gly	Val	Glu
		35					40					45			
Glu	Gly	Val	Val	Glu	Arg	Phe	Ile	Asn	Gly	Arg	Ala	Lys	Gly	Lys	His
		50				55					60				
Ile	Glu	Gly	Phe	Thr	Asp	Ile	Glu	Ala	Phe	Val	Glu	Ser	Ile	Ala	Leu
65					70					75					80
Pro	Arg	Lys	Ile	Met	Met	Met	Val	Arg	Ala	Gly	Ser	Pro	Val	Asp	Glu
				85					90					95	
Leu	Met	Glu	Gln	Leu	Phe	Pro	Tyr	Leu	Ser	Pro	Gly	Asp	Ile	Leu	Ile
			100					105					110		
Asp	Gly	Gly	Asn	Ser	Asn	Tyr	Glu	Asp	Thr	Asn	Arg	Arg	Val	Lys	Leu
		115					120					125			
Ala	Glu	Ser	Lys	Gly	Phe	Leu	Phe	Val	Gly	Ala	Gly	Val	Ser	Gly	Gly
		130				135					140				
Glu	Glu	Gly	Ala	Leu	Asn	Gly	Ala	Ser	Ile	Met	Pro	Gly	Gly	Ser	Glu
145					150					155					160
Lys	Ala	Trp	Glu	Glu	Val	Lys	Pro	Ile	Leu	Gln	Ser	Ile	Ala	Ala	Gln
				165					170					175	
Ala	Pro	Asp	Gly	Thr	Pro	Cys	Cys	Gln	Trp	Val	Gly	Pro	Ala	Gly	Ser
			180					185					190		
Gly	His	Phe	Val	Lys	Met	Ile	His	Asn	Gly	Ile	Glu	Tyr	Gly	Asp	Met
		195					200					205			
Gln	Leu	Ile	Ala	Glu	Ala	Tyr	Trp	Val	Met	Lys	Glu	Leu	Leu	Asp	Met
		210				215					220				
Thr	Asn	Glu	Glu	Met	Ala	Ser	Val	Phe	Thr	Arg	Trp	Asn	Glu	Gly	Lys
225					230					235				240	
Leu	Arg	Ser	Tyr	Leu	Ile	Glu	Ile	Thr	Gly	Asn	Ile	Leu	Arg	His	Lys
				245					250					255	
Asp	Lys	Thr	Gly	Val	Tyr	Leu	Ile	Asp	Lys	Ile	Leu	Asp	Ala	Ala	Gly
			260					265					270		
Gln	Lys	Gly	Thr	Gly	Lys	Trp	Ser	Val	Ile	Asn	Ala	Met	Glu	Leu	Gly
		275					280					285			
Met	Pro	Leu	Gly	Leu	Ile	Ala	Thr	Ala	Val	Phe	Glu	Arg	Ser	Leu	Ser
						295				300					
Ala	Arg	Lys	Glu	Leu	Arg	Glu	Ala	Ala	Ala	Arg	Gln	Tyr	Gln	Cys	Arg
305					310					315				320	
His	Ser	Met	Ala	Val	Tyr	Asn	Lys	Gln	Asp	Thr	Glu	Lys	Glu	Ile	Phe
				325					330					335	
Ser	Ala	Leu	Tyr	Ala	Ser	Lys	Leu	Val	Ser	Tyr	Ala	Gln	Gly	Phe	Ala
			340					345					350		
Val	Leu	Gln	Arg	Ala	Ser	Asp</									


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<210> 6753
<211> 136
<212> PRT
<213> B.fragilis
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<210> 6754
<211> 74
<212> PRT
<213> B.fragilis
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<210> 6755
<211> 383
<212> PRT
<213> B.fragilis
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<400> 6755

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Thr Met Gly Thr Tyr Ile Phe Leu Gln Gln Tyr Trp Trp Leu Val Val
1      5      10      15
Ser Leu Leu Gly Ala Ile Leu Val Phe Leu Leu Phe Val Gln Gly Gly
20     25     30
Asn Ser Leu Phe Cys Leu Gly Lys Thr Glu Glu His Arg Lys Met
35     40     45
Met Val Asn Ser Thr Gly Arg Lys Trp Glu Phe Thr Phe Thr Thr Leu
50     55     60
Val Thr Phe Gly Gly Ala Phe Phe Ala Ser Phe Pro Leu Phe Tyr Ser
65     70     75     80
Thr Ser Phe Gly Gly Ala Tyr Trp Leu Trp Met Ile Ile Leu Phe Ser
85     90     95
Phe Val Leu Gln Ala Val Ser Tyr Glu Phe Gln Ser Lys Ala Gly Asn
100    105    110
Leu Leu Gly Lys Lys Thr Tyr Gln Thr Phe Leu Val Ile Asn Gly Val
115    120    125
Val Gly Pro Leu Leu Leu Gly Gly Ala Val Ala Thr Phe Phe Thr Gly
130    135    140
Ser Asp Phe Tyr Ile Asn Lys Gly Asn Met Val Asn Glu Val Met Pro
145    150    155    160
Val Ile Ser His Trp Gly Asn Gly Trp His Gly Leu Asp Ala Leu Thr
165    170    175
Asn Ile Trp Asn Val Ile Leu Gly Leu Ala Val Phe Phe Leu Ala Arg
180    185    190
Ala Leu Gly Ala Leu Tyr Phe Ile Asn Asn Ile Ala Asp Lys Glu Leu
195    200    205
Val Ala Lys Cys Arg Arg Ser Leu Ile Ala Asn Thr Val Leu Phe Leu
210    215    220
Val Phe Phe Leu Ala Phe Val Val Arg Thr Leu Leu Ala Asp Gly Tyr
225    230    235    240
Ala Val Asn Pro Glu Thr Lys Glu Ile Tyr Met Glu Pro Tyr Lys Tyr
245    250    255
Phe Asn Asn Phe Ile Glu Met Pro Val Val Leu Ile Val Phe Leu Val
260    265    270
Gly Val Val Leu Val Leu Phe Gly Ile Gly Lys Thr Leu Lys Lys
275    280    285
Thr Phe Asp Lys Gly Ile Trp Phe Val Gly Ile Gly Thr Val Leu Thr
290    295    300
Val Leu Ala Leu Leu Leu Thr Ala Gly Tyr Asn Asn Thr Ala Tyr Tyr
305    310    315    320
Pro Ser Asn Thr Asp Ile Gln Ser Ser Leu Thr Leu Ala Asn Ser Cys
325    330    335
Ser Ser Gln Phe Thr Leu Lys Thr Met Ala Tyr Val Ser Ile Leu Val
340    345    350
Pro Phe Val Ile Ala Tyr Ile Phe Tyr Ala Trp Arg Ser Ile Asp Asn
355    360    365
Arg Lys Ile Asp Ala Lys Glu Met Asp Glu Gly Gly His Ala Tyr
370    375    380

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<210> 6756

<211> 62

<212> PRT

<213> B.fragilis

<400> 6756

```

Ile Thr Arg Phe Pro Ser Asn Tyr Ile Leu Asp Phe Ile Phe Ile Ser
1      5      10      15

```

Ser Lys Ile Met Leu Ile Tyr Asn His Phe Met Ile Val Ser Tyr Phe
 20 25 30
 Lys Thr Thr Asp Lys Ile Ile Tyr Phe Phe Thr Phe Leu Phe Asn Leu
 35 40 45
 Phe Trp Val Ser Met Pro Leu Ala Ser Asn Val Phe Ile Val
 50 55 60

<210> 6757
 <211> 236
 <212> PRT
 <213> B.fragilis

<400> 6757
 Ser Ser Ile Ala Val Lys Leu Arg Cys Ala Ile Val Asp Asp Glu Pro
 1 5 10 15
 Leu Ala Leu Ser Leu Leu Glu Ser Tyr Val Asn Lys Thr Pro Phe Leu
 20 25 30
 Glu Leu Ala Gly Lys Tyr Ser Ser Ala Val Gln Ala Met Lys Glu Leu
 35 40 45
 Pro Gly Asn Gln Ile Asp Leu Phe Leu Asp Ile Gln Met Pro Glu
 50 55 60
 Leu Asn Gly Leu Glu Phe Ser Lys Met Val Ala Pro Arg Thr Arg Ile
 65 70 75 80
 Val Phe Thr Thr Ala Phe Gly Gln Tyr Ala Ile Asp Gly Tyr Arg Val
 85 90 95
 Asn Ala Leu Asp Tyr Leu Leu Lys Pro Ile Ser Tyr Val Asp Phe Leu
 100 105 110
 Gln Ala Ala Asn Lys Ala Leu Gln Trp Phe Glu Leu Val Gln Lys Pro
 115 120 125
 Glu Glu Val Asp Ser Ile Phe Val Lys Ser Asp Tyr Lys Leu Val Gln
 130 135 140
 Val Glu Leu Lys Lys Ile Leu Tyr Ile Glu Gly Leu Lys Asp Tyr Ile
 145 150 155 160
 Lys Ile Tyr Thr Glu Asp Ala Pro Lys Pro Ile Leu Ser Leu Met Ser
 165 170 175
 Met Lys Ser Met Glu Glu Leu Leu Pro Pro Ala Arg Phe Met Arg Val
 180 185 190
 His Arg Ser Phe Ile Val Gln Lys Asn Lys Ile Arg Ile Ile Asp Arg
 195 200 205
 Gly Arg Ile Val Phe Asp Lys Thr Tyr Ile Pro Val Ser Asp Ser Tyr
 210 215 220
 Lys Gln Thr Phe Gln Thr Phe Leu Asp Glu Arg Ser
 225 230 235

<210> 6758
 <211> 450
 <212> PRT
 <213> B.fragilis

<400> 6758
 Pro Asn Thr Ala Ala Val Thr Ser Cys Cys Ala Thr Asp Lys Ser Arg
 1 5 10 15
 Lys Thr Ala Leu Thr Arg Thr Phe Phe Pro Gln Pro Lys His Trp Pro
 20 25 30
 Leu Cys Arg Tyr Lys Lys Asn Asn Arg Gln Ile Ile Met Asn Gly Thr
 35 40 45
 Asn Leu Phe Lys Ile Ala Leu Arg Ala Leu Asn Asn Asn Lys Leu Arg
 50 55 60
 Ala Phe Leu Thr Met Leu Gly Ile Ile Ile Gly Val Ala Ser Val Ile

3300

65 70 75 80
 Thr Met Leu Ala Ile Gly Gln Gly Ser Lys Lys Ser Ile Gln Ala Gln
 85 90 95
 Ile Ser Glu Met Gly Ser Asn Met Ile Met Ile His Pro Gly Ala Asp
 100 105 110
 Met Arg Gly Gly Val Arg Gln Asp Pro Ser Ala Met Gln Thr Leu Lys
 115 120 125
 Leu Thr Asp Tyr Glu Thr Leu Arg Asp Glu Thr Ser Phe Leu Ala Ala
 130 135 140
 Val Ser Pro Asn Val Ser Ser Ser Gly Gln Leu Ile Ala Gly Asn Asn
 145 150 155 160
 Asn Tyr Pro Ser Ser Val Asn Gly Val Gly Thr Glu Tyr Leu Glu Ile
 165 170 175
 Arg Gln Leu Ser Ile Asp Asn Gly Glu Met Phe Ser Glu Ala Asp Ile
 180 185 190
 Gln Ser Ser Ala Lys Val Cys Val Ile Gly Lys Thr Ile Val Asp Asn
 195 200 205
 Leu Phe Pro Asp Gly Glu Asp Pro Val Gly Arg Ile Val Arg Phe Ser
 210 215 220
 Lys Ile Pro Phe Arg Val Val Gly Val Leu Lys Ser Lys Gly Tyr Asn
 225 230 235 240
 Ser Met Gly Met Asp Gln Asp Asp Ile Val Leu Ala Pro Tyr Thr Thr
 245 250 255
 Val Met Lys Arg Leu Leu Ala Gln Thr Tyr Leu Gln Gly Ile Tyr Ala
 260 265 270
 Ser Ala Leu Ser Glu Asp Met Thr Asp Asn Ala Thr Glu Glu Ile Thr
 275 280 285
 Glu Leu Leu Arg Arg Asn His Lys Leu Lys Glu Ala Asp Asp Asp Asp
 290 295 300
 Phe Thr Ile Arg Ser Gln Gln Glu Leu Ser Ser Met Leu Asn Ser Thr
 305 310 315 320
 Thr Asp Leu Met Thr Thr Leu Leu Ala Cys Ile Ala Gly Ile Ser Leu
 325 330 335
 Val Val Gly Gly Ile Gly Ile Met Asn Ile Met Tyr Val Ser Val Thr
 340 345 350
 Glu Arg Thr Arg Glu Ile Gly Leu Arg Met Ser Val Gly Ala Arg Gly
 355 360 365
 Val Asp Ile Leu Ser Gln Phe Leu Ile Glu Ala Ile Leu Ile Ser Ile
 370 375 380
 Thr Gly Gly Leu Ile Gly Val Ile Ile Gly Cys Gly Ala Ser Trp Val
 385 390 395 400
 Val Lys Ser Val Ala His Trp Pro Ile Phe Ile Gln Pro Trp Ser Val
 405 410 415
 Phe Leu Ser Phe Ala Val Cys Thr Val Thr Gly Val Phe Phe Gly Trp
 420 425 430
 Tyr Pro Ala Lys Lys Ala Ala Asp Leu Asp Pro Ile Glu Ala Ile Arg
 435 440 445
 Tyr Glu
 450

<210> 6759

<211> 84

<212> PRT

<213> B.fragilis

<400> 6759

Val Val Asn Leu Arg Lys Asn Lys Ser Lys Met Glu Tyr Lys Phe Asp
 1 5 10 15
 Glu Gln Ser Val Lys Glu Leu Met Glu Trp Ala Gln Thr Ala Gln Leu

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<210> 6760
<211> 429
<212> PRT
<213> B.fragilis
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<400>	6760														
Gln	Ile	Tyr	Tyr	Lys	Tyr	Met	Gln	Pro	Leu	Ala	Glu	Arg	Leu	Arg	Pro
1				5					10					15	
Lys	Thr	Leu	Asp	Asp	Tyr	Ile	Gly	Gln	Lys	His	Leu	Val	Gly	Pro	Gly
			20					25					30		
Ala	Ile	Leu	Arg	Lys	Met	Ile	Asp	Ala	Gly	Arg	Ile	Ser	Ser	Phe	Ile
		35					40					45			
Leu	Trp	Gly	Pro	Pro	Gly	Val	Gly	Lys	Thr	Thr	Leu	Ala	Gln	Ile	Ile
	50					55					60				
Ala	Asn	Lys	Leu	Glu	Thr	Pro	Phe	Tyr	Thr	Leu	Ser	Ala	Val	Thr	Ser
65					70					75					80
Gly	Val	Lys	Asp	Val	Arg	Glu	Val	Ile	Asp	Arg	Ala	Lys	Ser	Asn	Lys
				85					90					95	
Phe	Phe	Thr	Gln	Ser	Ser	Pro	Ile	Leu	Phe	Ile	Asp	Glu	Ile	His	Arg
			100					105						110	
Phe	Ser	Lys	Ser	Gln	Gln	Asp	Ser	Leu	Leu	Gly	Ala	Val	Glu	His	Gly
		115					120						125		
Thr	Val	Thr	Leu	Ile	Gly	Ala	Thr	Thr	Glu	Asn	Pro	Ser	Phe	Glu	Val
	130					135							140		
Ile	Arg	Pro	Leu	Leu	Ser	Arg	Cys	Gln	Leu	Tyr	Thr	Leu	Lys	Ser	Leu
145					150					155					160
Glu	Lys	Glu	Asp	Leu	Leu	Glu	Leu	Leu	Gln	Arg	Ala	Ile	Thr	Thr	Asp
				165					170					175	
Val	Val	Leu	Lys	Glu	Arg	Lys	Ile	Glu	Leu	Lys	Glu	Thr	Gly	Ala	Met
			180					185						190	
Leu	Arg	Phe	Ser	Gly	Gly	Asp	Ala	Arg	Lys	Leu	Leu	Asn	Ile	Leu	Glu
		195					200						205		
Leu	Val	Val	Glu	Ser	Glu	Thr	Glu	Glu	Thr	Val	Ile	Ile	Thr	Asp	Asp
	210					215					220				
Leu	Val	Thr	Glu	Arg	Leu	Gln	Gln	Asn	Pro	Leu	Ala	Tyr	Asp	Lys	Asp
225				230						235					240
Gly	Glu	Met	His	Tyr	Asp	Ile	Ile	Ser	Ala	Phe	Ile	Lys	Ser	Ile	Arg
				245					250					255	
Gly	Ser	Asp	Pro	Asp	Gly	Ala	Ile	Tyr	Trp	Leu	Ala	Arg	Met	Val	Glu
			260					265					270		
Gly	Gly	Glu	Asp	Pro	Ala	Phe	Ile	Ala	Arg	Arg	Leu	Val	Ile	Ser	Ala
		275					280						285		
Ala	Glu	Asp	Ile	Gly	Leu	Ala	Asn	Pro	Asn	Ala	Leu	Leu	Leu	Ala	Asn
	290					295					300				
Ala	Cys	Phe	Asp	Thr	Leu	Met	Lys	Ile	Gly	Trp	Pro	Glu	Gly	Arg	Ile
305				310						315					320
Pro	Leu	Ala	Glu	Thr	Thr	Ile	Tyr	Leu	Ala	Thr	Ser	Pro	Lys	Ser	Asn
				325					330					335	
Ser	Ala	Tyr	Asn	Ala	Ile	Asn	Asp	Ala	Leu	Ala	Leu	Val	Arg	Glu	Thr

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<210> 6761
<211> 525
<212> PRT
<213> B.fragilis
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<400> 6761															
Arg	Leu	Thr	Leu	Thr	Thr	Asn	Asp	Met	Ile	Glu	Ser	Ile	Asp	Thr	Ser
1				5					10					15	
Leu	Ile	Asp	Trp	Ser	Arg	Ala	Gln	Phe	Ala	Leu	Thr	Ala	Met	Tyr	His
		20					25						30		
Trp	Ile	Phe	Val	Pro	Leu	Thr	Leu	Gly	Leu	Ala	Val	Val	Met	Ala	Ile
		35					40					45			
Met	Glu	Thr	Leu	Tyr	Tyr	Lys	Thr	Gly	Asn	Glu	Phe	Trp	Lys	Arg	Thr
	50					55					60				
Ala	Lys	Phe	Trp	Met	Lys	Leu	Phe	Gly	Ile	Asn	Phe	Ala	Val	Gly	Val
65					70				75						80
Ala	Thr	Gly	Leu	Ile	Leu	Glu	Phe	Glu	Phe	Gly	Thr	Asn	Trp	Ser	Asn
				85					90					95	
Tyr	Ser	Trp	Phe	Val	Gly	Asp	Ile	Phe	Gly	Ala	Pro	Leu	Ala	Ile	Glu
			100					105					110		
Gly	Ile	Leu	Ala	Phe	Phe	Met	Glu	Ala	Thr	Phe	Ile	Ala	Val	Met	Phe
		115					120					125			
Phe	Gly	Trp	Asp	Lys	Val	Ser	Lys	Arg	Phe	His	Leu	Ile	Ser	Thr	Trp
	130					135					140				
Leu	Thr	Gly	Leu	Gly	Ala	Thr	Ile	Ser	Ala	Trp	Trp	Ile	Leu	Val	Ala
145					150					155					160
Asn	Ala	Trp	Met	Gln	His	Pro	Val	Gly	Met	Gln	Phe	Asn	Pro	Asp	Thr
				165					170					175	
Val	Arg	Asn	Glu	Met	Val	Asp	Phe	Met	Ala	Val	Ala	Phe	Ser	Pro	Val
			180					185					190		
Ala	Val	Asn	Lys	Phe	Phe	His	Thr	Val	Leu	Ser	Ser	Trp	Val	Leu	Gly
		195					200					205			
Ala	Val	Phe	Val	Ile	Gly	Ile	Ser	Cys	Trp	Phe	Leu	Leu	Lys	Lys	Arg
	210					215					220				
Asp	Lys	Glu	Phe	Ala	Val	Ala	Ser	Ile	Lys	Ile	Gly	Ala	Val	Phe	Gly
225					230					235					240
Leu	Val	Ala	Ser	Leu	Leu	Thr	Val	Trp	Thr	Gly	Asp	Gly	Ser	Gly	Tyr
				245					250					255	
Ala	Ile	Ala	Gln	Thr	Gln	Pro	Met	Lys	Leu	Ala	Ala	Val	Glu	Gly	Tyr
			260					265					270		
Tyr	Glu	Gly	Gln	Asn	Gly	Ala	Gly	Leu	Val	Ala	Val	Gly	Leu	Leu	Asn
		275					280					285			
Pro	Glu	Lys	Lys	Thr	Tyr	Asp	Asp	Gly	Gln	Asp	Pro	Phe	Leu	Phe	Arg
	290					295					300				
Ile	Glu	Ile	Pro	Lys	Met	Leu	Ser	Leu	Leu	Ala	Glu	Arg	Lys	Val	Asp
305					310					315					320
Ala	Phe	Val	Pro	Gly	Ile	Lys	Asn	Ile	Ile	Glu	Gly	Gly	Tyr	Glu	Leu

				325					330				335				
Lys	Asp	Gly	Thr	Lys	Ala	Leu	Ser	Ala	Ala	Glu	Lys	Ile	Glu	Lys	Gly		
				340					345				350				
Lys	Lys	Ala	Ile	Ala	Ala	Leu	Ala	Thr	Tyr	Arg	Thr	Ala	Lys	Lys	Glu		
		355					360					365					
Gly	Asp	Glu	Ala	Ala	Ala	Lys	Glu	Ala	Tyr	Thr	Thr	Leu	Gln	Glu	Asn		
	370					375					380						
Val	Pro	Tyr	Phe	Gly	Tyr	Gly	Tyr	Ile	Lys	Asp	Val	Asn	Gln	Leu	Val		
385				390						395					400		
Pro	Asn	Val	Pro	Leu	Asn	Phe	Tyr	Ala	Phe	Arg	Val	Met	Val	Ile	Leu		
				405					410					415			
Gly	Gly	Tyr	Phe	Ile	Leu	Phe	Phe	Ile	Leu	Val	Leu	Phe	Phe	Ala	Tyr		
			420					425					430				
Lys	Lys	Asp	Leu	Ser	Lys	Ile	Arg	Trp	Met	Gln	Tyr	Val	Ala	Leu	Trp		
	435					440					445						
Thr	Ile	Pro	Leu	Ala	Tyr	Ile	Ala	Gly	Gln	Ala	Gly	Trp	Val	Val	Ala		
	450					455					460						
Glu	Cys	Gly	Arg	Gln	Pro	Trp	Ala	Ile	Arg	Asp	Met	Leu	Pro	Thr	Ser		
465				470						475				480			
Val	Ser	Ile	Ser	Lys	Leu	Asp	Val	Gly	Ser	Val	Gln	Thr	Thr	Phe	Phe		
			485					490						495			
Ile	Phe	Leu	Val	Leu	Phe	Thr	Val	Met	Leu	Ile	Ala	Glu	Ile	Gly	Ile		
		500						505					510				
Met	Val	Arg	Glu	Ile	Lys	Lys	Gly	Pro	Thr	Val	Asn	His					
	515						520					525					

<210> 6762

<211> 142

<212> PRT

<213> B.fragilis

<400> 6762

Val	Asn	Met	Tyr	Met	Lys	Thr	Leu	Phe	Leu	Lys	Arg	Leu	Met	Phe	Ile		
1				5					10					15			
Phe	Leu	Leu	Phe	Val	Ala	Cys	Tyr	Ser	Ser	Ala	Gln	Ser	Leu	Arg	Ser		
		20						25					30				
Leu	Pro	Phe	Gln	Lys	Arg	Asp	Ser	Thr	Leu	Ile	Arg	Ile	Ala	Lys	Glu		
	35					40					45						
Thr	Leu	Lys	Lys	Lys	Ala	Pro	Glu	Tyr	Leu	Ile	Glu	Asn	Gly	Ala	Pro		
	50					55					60						
Ile	Ile	Ser	Lys	His	Arg	Val	Arg	Tyr	Leu	Thr	Pro	Ala	Glu	Glu	Lys		
65				70						75				80			
Glu	Val	Pro	Glu	Phe	Ser	Thr	Phe	Tyr	Gly	Ala	Lys	Ser	Gly	Gln	Val		
			85					90						95			
Tyr	Tyr	Ile	Val	Glu	Phe	Pro	Gln	Asp	Glu	Ser	Ile	Glu	Ser	Phe	Asp		
		100						105					110				
Ala	Gly	Phe	Val	Ala	Gln	Val	Tyr	Ile	Trp	Glu	Asp	Thr	Ser	Arg	Pro		
	115						120					125					
Phe	Ser	Ile	Ala	Leu	Gly	Asn	Ser	Leu	Ile	Met	Asp	Leu	Lys				
	130						135					140					

<210> 6763

<211> 446

<212> PRT

<213> B.fragilis

<400> 6763

Ile	Tyr	Arg	Leu	Gly	Asn	Ser	Asp	Leu	Tyr	His	Gln	Lys	Glu	Gln	Glu		
1				5					10					15			

Lys Lys Ile Met Phe Gly Leu Met Asp Cys Asn Asn Phe Tyr Ala Ser
 20 25 30
 Cys Glu Arg Val Phe Asn Pro Ala Leu Asn Gly Lys Pro Ile Val Val
 35 40 45
 Leu Ser Asn Asn Asp Gly Cys Val Ile Ala Arg Ser Asn Glu Ala Lys
 50 55 60
 Ala Leu Gly Ile Lys Met Gly Val Pro Ala Tyr Gln Ile Lys Asp Asp
 65 70 75 80
 Ile Gln Lys Tyr Gly Ile Ser Val Phe Ser Ser Asn Tyr Thr Leu Tyr
 85 90 95
 Gly Asp Met Ser Gly Arg Val Met Ser Ile Leu Ala Glu Gln Val Pro
 100 105 110
 Glu Met Glu Val Tyr Ser Ile Asp Glu Ala Phe Leu Asn Leu Glu Gly
 115 120 125
 Ile Arg Asp Ile Gln Ser Leu Gly Thr Asp Ile Ile Asn Lys Val Ile
 130 135 140
 Arg Gly Thr Gly Ile Pro Val Ser Leu Gly Ile Ala Pro Thr Lys Thr
 145 150 155 160
 Leu Ala Lys Val Ala Asn Lys Phe Ala Lys Lys Tyr Pro Ala Tyr Asn
 165 170 175
 Arg Leu Cys Ile Ile Asp Thr Glu Glu Lys Arg Thr Lys Ala Leu Gln
 180 185 190
 Leu Thr Glu Ile Gly Asp Ile Trp Gly Ile Gly His Arg Gln Val Ala
 195 200 205
 Lys Leu Glu Lys Gln Gly Val Lys Thr Ala Tyr Asp Phe Thr Glu Leu
 210 215 220
 Pro Glu Ser Trp Val Arg Lys Asn Met Thr Val Val Gly Glu Arg Thr
 225 230 235 240
 Trp Lys Glu Leu Gln Gly Ile Ser Cys Ile Asp Met Glu Thr Thr Pro
 245 250 255
 Pro Ala Lys Lys Gln Ile Cys Thr Ser Arg Ser Phe Gly Lys Met Val
 260 265 270
 Glu Asp Ile Asp Thr Met Ser Glu Ala Ile Ala Thr His Ala Ser Thr
 275 280 285
 Cys Ala Lys Lys Leu Arg Gln Gln Lys Gly Tyr Ala Met Ser Leu Met
 290 295 300
 Val Phe Ile His Thr Asn Asn Phe Arg Lys Asp Ser Pro Gln Tyr Trp
 305 310 315 320
 Arg Asn Thr Val Val His Leu Pro Ile Pro Thr Asn Asp Thr Leu Glu
 325 330 335
 Ile Val His Tyr Ala Leu Ala Gly Leu Lys Thr Ile Phe Met Gln Gly
 340 345 350
 Tyr Gln Tyr Lys Lys Ala Gly Val Ile Ile Thr Glu Ile Thr Asp Ser
 355 360 365
 Thr Gln Leu Gly Leu Phe Asp Ser Val Asp Arg Glu Lys Arg Glu Arg
 370 375 380
 Leu Gln Gln Thr Ile Asp Lys Ile Asn Gly Lys His Ser Arg Leu Val
 385 390 395 400
 Lys Leu Ala Ile Gln Gly Thr Gly Arg Asn Trp Lys Leu Lys Gln Lys
 405 410 415
 Gln Leu Ser Gly His Tyr Thr Thr Asp Ile Asn Gln Ile Ile Ser Ile
 420 425 430
 Asn Cys Thr Tyr Pro Thr Ala Cys Gln Arg Lys Gln Tyr Ser
 435 440 445

<210> 6764

<211> 287

<212> PRT

<213> B.fragilis

<400> 6764

Lys Gln Leu His Met Tyr Lys Asn Ile Leu Ile Leu Gly Arg Gly Ile
 1 5 10 15
 Gly Gln Val Met Phe Gln Asn Asn Ala Leu Ser Gly Gly Leu Met Leu
 20 25 30
 Leu Gly Ile Ala Phe Asn Ser Trp Gln Leu Ala Val Leu Ser Val Leu
 35 40 45
 Gly Thr Val Val Ser Thr Leu Thr Ala Ser Leu Ser Gly Tyr Asp Lys
 50 55 60
 Glu Asp Ile Cys Asn Gly Leu Tyr Gly Phe Asn Gly Thr Leu Val Gly
 65 70 75 80
 Ile Ala Ile Gly Val Phe Met Glu Ile Asn Val Thr Ser Ile Leu Leu
 85 90 95
 Leu Ile Ser Gly Ser Ala Phe Ser Thr Trp Val Ala Arg Cys Phe Arg
 100 105 110
 Tyr Gln Asn Arg Val Ser Gly Leu Thr Ala Pro Phe Ile Phe Val Val
 115 120 125
 Trp Leu Leu Leu Val Gly Cys His Tyr Leu Tyr Pro Ser Leu Leu Leu
 130 135 140
 Ser Ser Ser Leu Glu Lys Pro Glu Leu Thr Met Asp Ile Phe Arg Ser
 145 150 155 160
 Phe Cys Leu Asn Ile Gly Gln Val Met Phe Gln Gly Asn Ile Leu Ser
 165 170 175
 Gly Leu Phe Phe Leu Leu Gly Ile Leu Ile Asn Ser Arg Met Asn Ala
 180 185 190
 Leu Tyr Thr Leu Thr Gly Ala Ile Leu Pro Leu Phe Met Ile Leu Tyr
 195 200 205
 Pro His Thr Asp Leu Ala Ala Trp Asn Leu Gly Leu Leu Gly Tyr Asn
 210 215 220
 Gly Val Leu Cys Ala Ile Ala Leu Gly Asp Lys Thr Gly Ile Gly Val
 225 230 235 240
 Val Lys Ala Ile Phe Ser Ile Ile Leu Ser Ile Val Leu Gln Leu Thr
 245 250 255
 Gly Met His Met Gly Ile Val Thr Leu Thr Ala Pro Phe Val Phe Ser
 260 265 270
 Val Trp Ile Thr Gly Gly Leu Phe Ser Val Phe Arg Ser Lys Ser
 275 280 285

<210> 6765

<211> 359

<212> PRT

<213> B.fragilis

<400> 6765

Leu Asn Arg His Thr Met Lys Arg Val Phe Val Phe Gln Asp Phe Lys
 1 5 10 15
 Ser Gln Lys Phe Trp Ser Ile Asp Val Arg Gly Thr Asp Val Ile Val
 20 25 30
 Asn Tyr Gly Lys Leu Gly Thr Asp Gly Gln Thr Gln Val Lys Asn Phe
 35 40 45
 Ser Ser Ala Gly Glu Ala Glu Lys Ala Ala Gly Lys Leu Ile Ala Glu
 50 55 60
 Lys Thr Lys Lys Gly Tyr Val Glu Thr Leu Glu Glu Val Ala Lys Glu
 65 70 75 80
 Met Lys Val Glu Ala Lys Lys Tyr Ala Leu Ser Tyr Asp Glu Ala Glu
 85 90 95
 Glu Gly Val Asn Leu Met Asp Lys Ile Leu Lys Asp Lys Lys Leu Pro
 100 105 110

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Ser Leu Lys Gln Ile Thr Ile Gly Cys Trp Gly Tyr Glu Gly Glu Asp
    115                      120                      125
Cys Ser Asp Ile Ala Asp Gly Ile Val Glu Asn Lys Glu Lys Phe Ala
    130                      135                      140
His Phe Glu Gly Leu Phe Trp Gly Asp Ile Asp Phe Glu Glu Gln Glu
    145                      150                      155                      160
Ile Ser Trp Ile Glu Gln Val Asp Leu Ser Pro Val Leu Asp Ala Met
    165                      170                      175
Pro Leu Leu Asn Asn Leu Lys Ile Lys Gly Thr Asn Asn Leu Ser Ile
    180                      185                      190
Gly Lys Lys Pro Arg Pro Asn Leu Lys Ser Leu Glu Ile Ile Ser Gly
    195                      200                      205
Gly Leu Pro Asp Ser Val Val Glu Asp Ile Leu Gly Ser Asp Leu Pro
    210                      215                      220
Asn Leu Glu Lys Leu Val Leu Tyr Val Gly Val Glu Asp Tyr Gly Phe
    225                      230                      235                      240
Asp Gly Asp Met Asn Val Phe Arg Pro Leu Phe Ser Lys Asp Arg Phe
    245                      250                      255
Pro Asn Leu Lys Trp Leu Gly Ile Val Asp Ala Glu Glu Gln Asn Ala
    260                      265                      270
Val Val Glu Met Phe Leu Glu Ser Asp Ile Leu Pro Gln Leu Glu Thr
    275                      280                      285
Met Asp Ile Ser Ala Gly Val Leu Thr Asp Glu Gly Ala Arg Leu Leu
    290                      295                      300
Leu Asp His Val Asp Lys Ile Lys His Leu Lys Phe Ile Asn Met Lys
    305                      310                      315                      320
Tyr Asn Tyr Leu Ser Asp Glu Met Lys Lys Glu Leu Gln Lys Ser Leu
    325                      330                      335
Pro Met Lys Ile Asp Val Ser Asp Ser Gln Glu Tyr Asp Asp Asp Tyr
    340                      345                      350
Ser Tyr Pro Met Ile Thr Glu
    355

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<210> 6766

<211> 258

<212> PRT

<213> B.fragilis

<400> 6766

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Pro Ser Gly Gln Gln Glu Glu Arg Lys Ile Ser Met Asn Lys Thr Val
    1           5           10           15
Ile Glu Leu Gln Asn Ile Lys Arg Asn Phe Gln Val Gly Asp Glu Thr
    20           25           30
Val His Ala Leu Arg Gly Val Ser Phe Thr Ile Thr Glu Gly Glu Phe
    35           40           45
Val Thr Ile Met Gly Thr Ser Gly Ser Gly Lys Ser Thr Leu Leu Asn
    50           55           60
Thr Leu Gly Cys Leu Asp Thr Pro Thr Ser Gly Glu Tyr Leu Leu Asp
    65           70           75           80
Gly Ile Ser Val Arg Thr Met Ser Lys Pro Gln Arg Ala Ile Leu Arg
    85           90           95
Asn Arg Lys Ile Gly Phe Val Phe Gln Ser Tyr Asn Leu Leu Pro Lys
    100          105          110
Thr Thr Ala Val Glu Asn Val Glu Leu Pro Leu Met Tyr Asn Ser Gly
    115          120          125
Val Ser Ala Ser Glu Arg Arg Arg Arg Ala Ile Glu Ala Leu Gln Ala
    130          135          140
Val Gly Leu Gly Glu Arg Leu Glu His Lys Ser Asn Gln Met Ser Gly
    145          150          155          160

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Gly Gln Met Gln Arg Val Ala Ile Ala Arg Ala Leu Val Asn Asn Pro
 165 170 175
 Ala Val Ile Leu Ala Asp Glu Ala Thr Gly Asn Leu Asp Thr Arg Thr
 180 185 190
 Ser Phe Glu Ile Leu Val Leu Phe Gln Lys Leu His Ala Glu Gly Arg
 195 200 205
 Thr Ile Ile Phe Val Thr His Asn Pro Glu Ile Ala Gln Tyr Ser Ser
 210 215 220
 Arg Asn Ile Val Leu Arg Asp Gly Gln Val Lys Glu Asp Ser Thr Asn
 225 230 235 240
 Pro Asp Ile Leu Ser Ala Ala Glu Ala Leu Ala Ala Leu Pro Val Gln
 245 250 255
 Glu Glu

<210> 6767

<211> 105

<212> PRT

<213> B.fragilis

<400> 6767

Ser Asn Tyr Lys Glu Ile Met Ala Asn Leu Phe Ile Thr Ile Val Ser
 1 5 10 15
 Thr Lys Lys Met Leu Asn Gly Lys His Lys Val Arg Ile Ala Val Ser
 20 25 30
 His Asn Leu Ala Thr Arg Tyr Ile Pro Thr Asn Ile Ile Ile Asp Ala
 35 40 45
 Glu Asn Glu Phe Lys Asn Gly Lys Val Val Lys Arg Pro Asp Lys Asp
 50 55 60
 Ile Leu Asn Ala Arg Leu Lys Lys Ile Tyr Asp Met Tyr Tyr Glu Arg
 65 70 75 80
 Cys Met Lys Ile Glu Tyr Ala Asn Thr Leu Thr Cys Thr Gln Leu Ile
 85 90 95
 Lys Tyr Cys Ile Phe Ala Glu Ser Arg
 100 105

<210> 6768

<211> 505

<212> PRT

<213> B.fragilis

<400> 6768

Cys Ile Ser Lys Lys Arg Asn Met Ser Lys Phe Val Met Thr Ile Phe
 1 5 10 15
 Gly Ala Ser Gly Asp Leu Thr Lys Arg Lys Leu Met Pro Ala Leu Tyr
 20 25 30
 Ser Leu Tyr Val Ala Lys Arg Leu Pro Glu Glu Phe Glu Ile Leu Gly
 35 40 45
 Val Gly Arg Thr Val Tyr Glu Asp Ala Asp Tyr Arg Thr Tyr Ile Tyr
 50 55 60
 Asn Glu Met Glu Lys Phe Val Lys Ser Glu Glu Gln Asn Lys Glu Lys
 65 70 75 80
 Met Asp Ala Phe Val Gly His Leu His Tyr Leu Ala Ile Asp Pro Ala
 85 90 95
 Leu Glu Ser Gly Tyr Gly Gln Leu Arg Leu Arg Ile Glu Glu Leu Ser
 100 105 110
 Gly Asp Ser Arg Pro Asp Asp Leu Leu Phe Tyr Leu Ala Thr Pro Pro
 115 120 125
 Ser Leu Tyr Gly Val Ile Pro Leu His Leu Lys Ser Val His Leu Asn

130 135 140
 Lys Gly Arg Ala Arg Ile Ile Val Glu Lys Pro Phe Gly Tyr Asp Leu
 145 150 155 160
 Glu Ser Ala Glu Lys Leu Asn Lys Ile Tyr Ala Ser Val Phe Asp Glu
 165 170 175
 His Gln Ile Tyr Arg Ile Asp His Phe Leu Gly Lys Glu Thr Ala Gln
 180 185 190
 Asn Leu Leu Ala Phe Arg Phe Ala Asn Gly Ile Phe Glu Pro Leu Trp
 195 200 205
 Asn Arg Asn Tyr Ile Asp Tyr Val Glu Val Thr Ala Val Glu Asn Leu
 210 215 220
 Gly Ile Glu Gln Arg Gly Gly Phe Tyr Asp Thr Thr Gly Ala Leu Arg
 225 230 235 240
 Asp Met Val Gln Asn His Leu Ile Gln Leu Val Ala Leu Thr Ala Met
 245 250 255
 Glu Pro Pro Ala Val Phe Asn Ala Asp Asn Phe Arg Asn Glu Val Val
 260 265 270
 Lys Val Tyr Glu Ser Leu Thr Pro Leu Thr Glu Thr Asp Leu Ser Glu
 275 280 285
 His Ile Val Arg Gly Gln Tyr Thr Ala Gly Gly Asn Lys Arg Gly Tyr
 290 295 300
 Arg Glu Glu Lys Asn Ile Ser Pro Asp Ser Arg Thr Glu Thr Tyr Ile
 305 310 315 320
 Ala Met Lys Leu Gly Ile Ser Asn Trp Arg Trp Ser Gly Val Pro Phe
 325 330 335
 Tyr Ile Arg Thr Gly Lys Gln Met Pro Thr Lys Val Thr Glu Ile Val
 340 345 350
 Val His Phe Arg Glu Thr Pro His Gln Met Phe His Cys Ala Gly Gly
 355 360 365
 Asn Cys Pro Arg Ala Asn Lys Leu Ile Leu Arg Leu Gln Pro Asn Glu
 370 375 380
 Gly Ile Val Leu Lys Phe Gly Met Lys Val Pro Gly Pro Gly Phe Glu
 385 390 395 400
 Val Lys Gln Val Thr Met Asp Phe Ser Tyr Asp Gln Leu Gly Gly Val
 405 410 415
 Pro Gly Gly Asp Ala Tyr Ala Arg Leu Ile Glu Asp Cys Ile Leu Gly
 420 425 430
 Asp Gln Thr Leu Phe Thr Arg Ser Asp Ala Val Glu Ala Ser Trp His
 435 440 445
 Phe Phe Asp Pro Ile Leu Arg Tyr Trp Asn Glu His Pro Glu Ala Pro
 450 455 460
 Leu Tyr Gly Tyr Pro Ala Gly Thr Trp Gly Pro Leu Glu Ser Glu Ala
 465 470 475 480
 Met Met His Glu His Gly Ala Glu Trp Thr Asn Pro Cys Lys Asn Leu
 485 490 495
 Thr Asn Thr Asp Gln Tyr Cys Glu Leu
 500 505

<210> 6769

<211> 79

<212> PRT

<213> B.fragilis

<400> 6769

Leu Glu Leu Asn Val Ser Arg Leu Leu Pro Ala Phe Tyr Lys Phe Ala
 1 5 10 15
 Arg Asn Val Phe Ser Leu Val Leu Ile Gly Gly Leu Ala Ala Gln Lys
 20 25 30
 Val Gly Glu Glu Lys Gln Ala Glu Asn Glu Glu His Asp Lys Glu Phe

35 40 45
 His Lys Tyr Asn Glu Pro Gln Gly Thr Ser Pro Gly Ser Cys Phe Glu
 50 55 60
 Ser Leu Leu His Arg Asn Ser Arg Cys Gly Ala Val Tyr Ser Ser
 65 70 75

<210> 6770

<211> 690

<212> PRT

<213> B.fragilis

<400> 6770

Ser Ile Met Lys Gln Ile Gln Pro Val Phe Leu Ala Met Lys Phe Ser
 1 5 10 15
 Phe Leu Ile Phe Phe Phe Phe Ser Leu Pro Val Gly Ala Gln Ser Ile
 20 25 30
 Phe Gln Lys Tyr Gly Arg Phe Leu Thr Glu Pro Arg Ser Tyr Val Cys
 35 40 45
 Tyr Arg Thr Asp Gly Lys Leu Lys Ile Asp Gly Lys Leu Asp Glu Val
 50 55 60
 Ser Trp Gln Lys Ala Lys Pro Thr Ala Pro Phe Val Asp Ile Ser Gly
 65 70 75 80
 Glu Gly Phe Pro Thr Pro Lys Tyr Glu Thr Thr Ala Lys Met Leu Trp
 85 90 95
 Asp Asp Glu Tyr Leu Tyr Ile Gly Ala Met Leu Gln Glu Asp Asp Ile
 100 105 110
 Lys Ala Arg Leu Thr Gln Arg Asp Thr Ile Ile Tyr Tyr Asp Asn Asp
 115 120 125
 Phe Glu Val Phe Ile Asp Pro Asp Trp Asp Gly His Asn Tyr Phe Glu
 130 135 140
 Ile Glu Thr Asn Ala Arg Gly Val Ile Phe Asp Leu Met Leu Asp Arg
 145 150 155 160
 Pro Tyr Arg Ser Ser Gly Asn Phe Met Val Gln Trp Asp Cys Pro Gly
 165 170 175
 Leu Lys Leu Ala Ile His Arg Glu Gly Thr Leu Asn Lys Ser Lys Asp
 180 185 190
 Lys Asp Lys Tyr Trp Ser Val Glu Met Ala Ile Pro His Lys Ala Leu
 195 200 205
 Thr Met Asn Phe Asn Asn Pro Leu Lys Ala Gly Asn Cys Trp Arg Ile
 210 215 220
 Asn Phe Ser Arg Val Gln Trp Leu Lys Ala Gly Gly Pro Glu Glu Asn
 225 230 235 240
 Trp Val Trp Thr Pro Thr Gly Lys Val Asp Met His Met Pro Asp Arg
 245 250 255
 Trp Gly Tyr Leu Phe Phe Ala Ala Glu Lys Val Gly Thr Pro Glu His
 260 265 270
 Thr Phe Ala Leu Pro Tyr Asn Ala Ser Val Tyr Lys Leu Leu Trp Ala
 275 280 285
 Met Phe Tyr Val Gln Gln Glu Arg Tyr Ala Lys Glu Lys Asn Tyr Leu
 290 295 300
 Arg Thr Glu Gln Asp Phe Phe Leu Thr Asp Ala Glu Leu Lys Gly Leu
 305 310 315 320
 Pro Gln Gly Ala Gln Ile Ser Val Glu Ala Thr Trp Asn Thr Tyr Gln
 325 330 335
 Ile Ala Ile Thr Val Pro Gly Glu Gly Arg Arg Tyr Ile Ile Asn Asn
 340 345 350
 Glu Gly Arg Phe Trp Thr Glu Lys Val Ala Pro Arg Gln Val Lys Asn
 355 360 365
 Trp Val Trp Thr Arg Ile Asn Lys Ser Lys Ser Glu Thr Asp Tyr Arg

370		375		380
Gln Trp Phe Ala Leu	Leu Lys Glu Cys Gly	Ile Ser Gly Val Met Phe		
385		390	395	400
Glu Gly Tyr Asp	Glu Asn Leu Tyr Arg Met Cys Lys	Glu Ala Gly Leu		
	405	410	415	
Glu Ala His Phe Trp	Lys Trp Thr Met Asn Arg Ala	Glu Leu Leu Asn		
	420	425	430	
Val His Pro Asp Trp	Phe Ala Val Asn Arg Lys Gly	Glu Ser Thr His		
	435	440	445	
Asp Lys Pro Ala Tyr	Val Asp Tyr Tyr Arg Phe Leu Cys	Pro Asn His		
	450	455	460	
Glu Gly Val Ala Gln	Tyr Leu Ala Asp Asp Tyr Val Lys	Ile Ala His		
	465	470	475	480
Leu Pro Tyr Val Asp	Gly Val His Leu Asp Tyr Val Arg	Phe Pro Asp		
	485	490	495	
Val Val Leu Pro Val	Ser Leu Trp Lys Asn Tyr Gly	Ile Glu Gln Thr		
	500	505	510	
Ser Glu His Pro Glu	Tyr Asp Tyr Cys Tyr Cys Asp	Val Cys Arg Thr		
	515	520	525	
Lys Phe Lys Glu Gln	Thr Gly Arg Asp Pro Leu Glu Leu Lys	Tyr Pro		
	530	535	540	
Met Glu Asp Gln Ser	Trp Ile Asn Phe Arg Leu Asp Ala	Ile Ser Arg		
	545	550	555	560
Val Val Asp Gln Ile	Thr Lys Ala Val Lys Ala Asp Gly	Lys Ala Ile		
	565	570	575	
Ser Ala Ala Val Phe	Pro Gly Pro Ser Met Ala Lys Lys	Met Val Arg		
	580	585	590	
Gln Asp Trp Gly Asn	Trp Ser Leu Asp Ala Tyr Phe	Pro Met Ile Tyr		
	595	600	605	
Asn Gly Phe Tyr Tyr	Glu Gly Pro Glu Trp Ile Gly Arg	Ser Val Gln		
	610	615	620	
Glu Ser Val Lys Thr	Val Asp Gly Arg Ala Lys Val Tyr	Ala Gly Leu		
	625	630	635	640
Met Phe Pro Asp Ile	Lys Asn Asp Phe Glu Lys Ala Leu	Asp Glu Ala		
	645	650	655	
Phe Asp Asn Gly Ala	Ser Gly Val Ser Phe Phe Asp Gly	Pro Ser Asp		
	660	665	670	
Glu Tyr Leu His Arg	Phe Lys Ala Tyr Leu Asp Lys Lys	Gly Leu Lys		
	675	680	685	
Thr Glu				
690				

<210> 6771

<211> 297

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (260)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6771

Asp His Ala Asp Arg	Pro Gly Phe Asp Tyr Ser	Glu Trp Glu Lys Ile
1	5	10
Gly Leu Ala His Ser	Phe Ser Thr Pro Tyr Phe Met	Ser Lys Asp Phe
	20	25
Tyr Val Gly Tyr Gly	Trp Tyr Arg Lys Ala Phe	Pro Val Lys Lys Glu
	35	40
		45

Ile Leu Gly Lys Lys Ser Phe Leu Glu Phe Asp Gly Val Phe Gln Glu
 50 55 60
 Ala Glu Ile Phe Val Asn Gly His Leu Ala Gly Thr His Lys Gly Gly
 65 70 75 80
 Tyr Thr Gly Phe Ser Ile Asp Ile Ser Ala Tyr Leu Lys Glu Gly Lys
 85 90 95
 Asn Leu Val Ala Val Arg Val Asn Asn Cys Trp Arg Pro Asp Leu Ala
 100 105 110
 Pro Arg Ala Gly Glu His Val Phe Ser Gly Gly Ile Tyr Arg Asn Val
 115 120 125
 Arg Leu Val Ile Lys Pro Pro Thr Tyr Ile Asp Trp Tyr Gly Thr Trp
 130 135 140
 Val Thr Thr Pro Asp Leu Ala Glu Asn Lys Gly Lys Ser Gly Ser Val
 145 150 155 160
 His Ile Arg Thr Asp Val Cys Asn Ala Ser Gly Lys Thr Asp Thr Tyr
 165 170 175
 Arg Leu Leu Thr Thr Val Val Asp Ala Gln Gly Lys Glu Val Ser Ser
 180 185 190
 Val Ser Thr Ser Gln Val Leu Pro Asp Asn Ala Thr Tyr Thr Phe Lys
 195 200 205
 Gln Gln Thr Lys Glu Ile Gln Ala Pro Gln Leu Trp His Pro Asn His
 210 215 220
 Pro Ala Leu Tyr Lys Val Ile Ser Ser Leu Tyr His Gly Gln Glu Leu
 225 230 235 240
 Ile Asp Arg Tyr Glu Thr Thr Phe Gly Phe Arg Trp Phe Glu Trp Thr
 245 250 255
 Ala Asp Arg Xaa Phe Phe Leu Asn Gly Glu His Leu Tyr Phe Lys Gly
 260 265 270
 Ala Asn Val His Leu Asp His Ala Gly Trp Gly Asp Ala Val Thr Gln
 275 280 285
 Asn Arg Asn Ala Lys Lys Asn Leu Arg
 290 295

<210> 6772

<211> 341

<212> PRT

<213> B.fragilis

<400> 6772

Leu Arg Ser Glu Arg Met Arg Ile Leu Val Ala Ser Asn Ser Thr Ser
 1 5 10 15
 Lys Arg Thr Asp Tyr Phe Ile Lys Ala Gly Arg Ser Leu Gly Ala Asp
 20 25 30
 Thr Cys Phe Val Thr Tyr Asp Glu Leu Ser Ala Val Leu Pro Asp Cys
 35 40 45
 Arg Asp Thr Val Val Lys Leu Glu Pro Pro Val Phe Arg Glu Ala Asp
 50 55 60
 Phe Arg Lys Tyr Asn Leu Leu Cys Glu Glu Tyr Arg Ser Leu Leu Ser
 65 70 75 80
 Arg Leu Ala Asp Met Asp Lys Ser Glu Ser Val His Phe Leu Asn Glu
 85 90 95
 Pro Ala Ala Ile Leu Cys Ala Leu Asp Lys Val Tyr Thr Gln Arg Lys
 100 105 110
 Leu Thr Gly Ala Gly Leu Lys Thr Thr Pro Leu Leu Ser Asp Ala Leu
 115 120 125
 Ser Thr Phe Asp Asp Leu Ala Ile Leu Cys Arg Gln Lys Arg Gly
 130 135 140
 Gly Phe Leu Lys Pro Arg Tyr Gly Ser Gly Ala Gly Gly Ile Met Ala
 145 150 155 160

Val Arg Tyr Asn His Arg Arg Asp Glu Trp Val Ala Tyr Thr Thr Met
 165 170 175
 Ser Trp Glu Gly Arg Val Cys Asn Ala Lys Arg Ile Cys Arg Leu
 180 185 190
 Thr Asn Arg Lys Glu Ile Ala Thr Leu Ala Glu Glu Val Ile Arg Cys
 195 200 205
 Gly Ala Val Leu Glu Glu Trp Met Ala Lys Glu Lys Leu Glu Gly Glu
 210 215 220
 Asn Tyr Asp Leu Arg Val Val Cys Arg Gly Asp Glu Val Asp Tyr Val
 225 230 235 240
 Val Val Arg Cys Ser Asp Asp Ala Ile Thr Asn Leu His Leu Asn Asn
 245 250 255
 Lys Ala Arg Leu Phe Glu Glu Leu Ser Leu Ala Pro Ser Val Arg Glu
 260 265 270
 Glu Leu Phe Cys Arg Ser Ile Thr Ala Met Lys Ala Leu Gly Leu Arg
 275 280 285
 Tyr Ala Gly Ile Asp Val Leu Ile Ala Arg Asn Thr Asp Thr Pro Tyr
 290 295 300
 Ile Ile Glu Val Asn Gly Gln Gly Asp His Ile Tyr Gln Asp Met Tyr
 305 310 315 320
 Thr Glu Asn Lys Ile Tyr Ala Asn Gln Ile Lys Thr Ile Glu Ser Leu
 325 330 335
 Phe Asn Gly Asn Arg
 340

<210> 6773

<211> 411

<212> PRT

<213> B.fragilis

<400> 6773

Arg Tyr Asn Asp Met Lys Lys Lys Lys Ile Ile Leu Ile Ala Val Ser
 1 5 10 15
 Leu Ala Ile Leu Ala Gly Gly Gly Val Trp Leu Phe Gly Gly Ser Thr
 20 25 30
 Ala Lys His Lys Val Thr Tyr Ala Thr Val Ser Lys Gly Glu
 35 40 45
 Ile Ser Glu Ser Val Thr Ala Thr Gly Thr Ile Glu Pro Val Thr Glu
 50 55 60
 Val Glu Val Gly Thr Gln Val Ser Gly Ile Ile Asp Lys Ile Tyr Val
 65 70 75 80
 Asp Tyr Asn Ala Ala Val Thr Lys Gly Gln Leu Ile Ala Glu Met Asp
 85 90 95
 Arg Val Thr Leu Gln Ser Glu Leu Ala Ser Gln Arg Ala Thr Tyr Ser
 100 105 110
 Gly Ala Lys Ala Glu Tyr Glu Tyr Gln Lys Lys Asn Tyr Glu Arg Asn
 115 120 125
 Lys Gly Leu His Glu Lys Gly Leu Ile Ser Asp Thr Asp Tyr Glu Gln
 130 135 140
 Ser Leu Tyr Asn Tyr Glu Lys Ala Lys Ser Ser Phe Glu Ser Ser Gln
 145 150 155 160
 Ala Ser Leu Ala Lys Ala Glu Arg Asn Leu Ser Tyr Ala Thr Ile Thr
 165 170 175
 Ser Pro Ile Asp Gly Val Val Ile Ser Arg Asp Val Glu Glu Gly Gln
 180 185 190
 Thr Val Ala Ser Gly Phe Glu Thr Pro Thr Leu Phe Thr Ile Ala Ala
 195 200 205
 Asp Leu Thr Gln Met Gln Val Val Ala Asp Val Asp Glu Ala Asp Ile
 210 215 220

Gly Gly Val Glu Glu Gly Gln Arg Ala Thr Phe Thr Val Asp Ala Tyr
 225 230 235 240
 Pro Asn Asp Val Phe Glu Gly Ile Val Thr Gln Ile Arg Leu Gly Asp
 245 250 255
 Ala Ser Ser Thr Ser Thr Ser Ser Thr Thr Val Val Thr Tyr
 260 265 270
 Glu Val Val Ile Ser Ala His Asn Pro Asp Leu Lys Leu Lys Pro Arg
 275 280 285
 Leu Thr Ala Asn Val Thr Ile Tyr Thr Leu Asp Arg Lys Asp Val Leu
 290 295 300
 Ser Val Pro Ala Arg Ala Leu Arg Phe Thr Pro Glu Lys Pro Leu Ile
 305 310 315 320
 Gly Asp Asn Asp Ile Val Lys Asp Cys Glu Gly Glu His Lys Ile Trp
 325 330 335
 Thr Arg Glu Gly Asn Thr Phe Thr Ala His Pro Val Gln Ile Gly Ile
 340 345 350
 Thr Asn Gly Ile Asn Thr Glu Ile Thr Gln Gly Ala Ser Glu Gly Met
 355 360 365
 Val Val Val Thr Glu Ala Thr Ile Gly Asn Met Pro Gly Gly Asn Val
 370 375 380
 Ser Pro Glu Gly Gly Gln Glu Gly Gly Glu Gln Ser Pro Phe Met
 385 390 395 400
 Pro Ser His Pro Gly Ser Lys Lys Lys Gly Lys
 405 410

<210> 6774

<211> 206

<212> PRT

<213> B.fragilis

<400> 6774

Asn Pro Ala Arg Arg Glu Ala Glu Lys Ser Arg Thr Glu Ala Glu Leu
 1 5 10 15
 Lys Asn Leu Arg Asn Gln Leu Asn Pro His Phe Leu Leu Asn Thr Leu
 20 25 30
 Asn Asn Ile Tyr Ala Leu Ile Ala Phe Asp Ser Asp Lys Ala Gln Gln
 35 40 45
 Ala Val Gln Glu Leu Ser Lys Leu Leu Arg Tyr Val Leu Tyr Asp Asn
 50 55 60
 Gln Gln Asn Tyr Val Pro Leu Cys Lys Glu Val Asp Phe Ile Arg Asn
 65 70 75 80
 Tyr Ile Glu Leu Met Arg Ile Arg Leu Ser Gly Asn Val Glu Val Ile
 85 90 95
 Thr Gln Phe Asp Ile Gln Pro Asp Ser Arg Thr Glu Ile Ala Pro Leu
 100 105 110
 Ile Phe Ile Ser Leu Ile Glu Asn Ala Phe Lys His Gly Ile Ser Pro
 115 120 125
 Thr Glu Leu Ser Phe Ile His Ile Leu Ile Ser Glu Asn Lys Glu Glu
 130 135 140
 Ile Arg Cys Glu Ile Arg Asn Ser Tyr His Pro Lys Thr Asn Thr Asp
 145 150 155 160
 Lys Ser Gly Ser Gly Ile Gly Leu Glu Gln Val Arg Lys Arg Leu Glu
 165 170 175
 Leu Ser Tyr Pro Gly Arg Tyr Gln Trp Asp Lys Ala Ile Ser Pro Asp
 180 185 190
 Gly Lys Glu Tyr Ile Ser Lys Leu Leu Ile Phe Asn His Pro
 195 200 205

<210> 6775

<211> 259
 <212> PRT
 <213> B.fragilis

<400> 6775

Ala	Trp	Cys	Arg	Met	Asp	Gln	Ser	Met	Gln	Glu	Leu	Asn	Lys	His	Arg
1				5					10					15	
Ser	Ile	Leu	Arg	Ala	Met	Lys	Pro	Tyr	Ile	Phe	Pro	Ser	Ser	Ile	Glu
			20					25					30		
Thr	Ala	Arg	Ala	Leu	Ile	Leu	His	Leu	Val	Lys	Leu	Met	Leu	Asp	Glu
			35				40					45			
Pro	Asp	Arg	Thr	Phe	Cys	Ile	Ala	Phe	Ser	Gly	Gly	Ser	Thr	Pro	Ala
	50					55					60				
Leu	Met	Phe	Asp	Leu	Trp	Ala	Asn	Glu	Tyr	Thr	Asp	Ile	Thr	Pro	Trp
65					70					75				80	
Glu	Arg	Leu	Lys	Val	Phe	Trp	Val	Asp	Glu	Arg	Cys	Val	Pro	Pro	Glu
			85					90					95		
Asn	Ser	Asp	Ser	Asn	Tyr	Gly	Met	Met	Arg	Ser	Leu	Leu	Leu	Ser	Ile
			100				105						110		
Val	Pro	Ile	Pro	Tyr	Glu	Asn	Val	Phe	Arg	Ile	Gln	Gly	Glu	Lys	Asn
	115					120						125			
Pro	Lys	Lys	Glu	Ala	Ala	Arg	Tyr	Ser	Lys	Leu	Val	Met	Lys	Glu	Val
	130					135					140				
Pro	Val	Glu	Asn	Glu	Phe	Pro	Leu	Phe	Asp	Val	Val	Leu	Leu	Gly	Ala
145					150					155				160	
Gly	Asn	Asp	Gly	His	Thr	Ser	Ser	Ile	Phe	Pro	Gly	Gln	Glu	Glu	Leu
			165						170					175	
Leu	Ser	Thr	Asp	His	Ile	Tyr	Glu	Ala	Asn	Phe	Asn	Pro	Asn	Asn	Gly
			180					185					190		
Gln	Lys	Arg	Ile	Ala	Leu	Thr	Gly	Leu	Pro	Ile	Leu	Asn	Ala	Arg	Arg
	195						200					205			
Ile	Ile	Phe	Leu	Ile	Thr	Gly	Arg	Val	Lys	Ser	Pro	Val	Val	Glu	Asp
	210					215					220				
Ile	Phe	Tyr	Ser	Gly	Asp	Thr	Gly	Pro	Ala	Ala	Tyr	Ile	Ala	His	His
225					230				235					240	
Ala	Asp	Asn	Val	Glu	Leu	Phe	Met	Asp	Asn	Ala	Ala	Ala	Glu	Lys	Val
			245					250						255	
Ile	Arg	Gly													

<210> 6776
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 6776

Tyr	Gln	Ala	Leu	Val	Leu	Arg	Phe	Val	Val	Leu	Ile	Asn	Asn	Leu	Phe
1				5					10					15	
Tyr	Met	Arg	Ile	Lys	Arg	Leu	Leu	Tyr	Ala	Ile	Ala	Thr	Ile	Leu	Pro
			20					25					30		
Phe	Leu	Phe	Leu	Cys	Ser	Cys	Tyr	Glu	Glu	Gln	Glu	Pro	Gln	Gln	Glu
		35				40						45			
Lys	Gln	Asp	Lys	Glu	Lys	Trp	Thr	Met	Gln	Val	Ala	Gly	Asn	Gln	Leu
	50				55						60				
Asn	Glu	Phe	Leu	Asn	Ile	Asn	Pro	Asp	Leu	Arg	Asn	Leu	Tyr	Ala	Tyr
65					70					75				80	
Pro	Asp	Trp	Asp	Ala	Ala	Gln	Ile	Ile	Arg	Glu	Arg	Ser	Asp	Thr	Val
			85					90					95		
Ser	Tyr	Tyr	Val	Pro	Val	Val	Asp	Ile	Thr	Ala	Asp	Thr	Cys	Ser	Tyr

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      100      105      110
Leu Ile Ile Ala Arg Ala Ser Asn Asp Val Tyr Leu Tyr Met Val Arg
      115      120      125
Leu Pro Glu Glu Tyr Ser Gly Phe Asp Ser Phe Leu Glu Glu His Leu
      130      135      140
Lys Ile Leu Arg Ile Ile Asp Gly Ala Arg Arg Val Pro Val Gly Tyr
145      150      155      160
Leu His Asn Phe Pro Asp Asp Val Leu Thr Arg Thr Arg Ser Ser Gly
      165      170      175
Ser Leu Phe Asn His Asp Arg Glu Thr Asn Thr Glu Ile Leu Glu Asn
      180      185      190
Asn Thr Phe Val Lys Asp Asp Leu Phe Gly Ala Gly Phe Ser Leu Pro
      195      200      205
Glu Val Thr Val Ile Gly Arg Arg Pro Thr Ser Ser Glu Asp Pro Phe
      210      215      220
Lys Trp Pro Phe Gly Asp Met Pro Ser Glu Ser Pro Lys Ala Leu Pro
225      230      235      240
Gly Leu Asp Asp Phe Phe Ser Pro Gln Gly Gly Gly Ser Ser Ser Leu
      245      250      255
Ser Ser Pro Gln Gln Ser Gly Ser Leu Pro Lys Pro Glu Glu Val Ile
      260      265      270
Lys Asp Ala Thr Val Lys Lys Ala Leu Glu Glu Ala Trp Ser Asp Met
      275      280      285
Leu Lys Arg Ser Thr Lys Asp Gln Arg Gln Glu Val Gly Phe Trp Ile
      290      295      300
Tyr Tyr Asp Pro Val Lys Lys Gln Tyr Tyr Ile Gly Lys Lys Arg Tyr
305      310      315      320
Gly Ile Ala Val Lys Asn Asp Gly Lys Ala Arg Gly Asn Ile Ser Leu
      325      330      335
Gly Asp Lys Ser Pro Ser Val Asn Gly Val Pro Ala Thr Ala Lys Val
      340      345      350
Val Ala Ser Phe His Thr His Thr Pro Met Thr Glu Ile Lys Gly Met
      355      360      365
Lys Arg Lys Val Gly Pro Ser Lys Glu Asp Lys Gly Asn Ala Asp Lys
      370      375      380
Asn Arg Ile Pro Ile Ile Val Tyr Asp Tyr Ile Gly Thr Lys Asp Pro
385      390      395      400
Arg Thr Asn Asp Tyr Tyr Val Ile Gly Gly His Lys Val Ser Asp Pro
      405      410      415
Lys Lys Met Tyr Ile Tyr Gln Pro Lys Lys
      420      425

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<210> 6777

<211> 419

<212> PRT

<213> B.fragilis

<400> 6777

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Lys Gln Leu Ser Met Lys Met Ile Leu Asn Phe Ser Glu Cys Ile Ile
1      5      10      15
Ser Phe Phe Ser Leu Cys Leu Leu Cys Val Val Phe Ser Cys Asp Glu
      20      25      30
Met Asp Ile Asp Gln Gly Pro Pro Thr Ser Val Thr Arg Asn Leu Met
      35      40      45
Thr Ser Asp Gly Pro Gly Phe Lys Ile Asp Thr Val Thr Tyr Asp Lys
      50      55      60
Ile Pro Ala Glu Tyr Ala Arg Lys Ile Leu Ser Leu Glu Glu Pro Thr
65      70      75      80
Ser Val Val Thr Asp Lys Ser Lys Arg Ser Phe Arg Val Asn Glu Leu

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<210> 6778
<211> 158
<212> PRT
<213> B.fragilis
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<400> 6778
Thr Lys Ile Ile Ile Phe Val Pro Met Lys Gln Ser Leu Thr Ser Ala
1          5          10          15
Arg Arg Pro Leu Glu Ile Leu Ile His Ile Ile Ser Trp Gly Ile Val
          20          25          30
Phe Gly Phe Pro Phe Phe Phe Ile Asp Arg Thr Gly Asp Ser Ile Asn
          35          40          45
Trp His Ala Tyr Leu Arg His Ser Ala Val Pro Leu Ser Phe Val Thr
          50          55          60
Val Phe Tyr Leu Asn Tyr Phe Leu Leu Val Pro His Leu Leu Phe Gln

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65					70					75				80	
Glu	Gln	Lys	Asn	Lys	Tyr	Ile	Ile	Tyr	Asn	Ile	Leu	Leu	Val	Cys	Leu
				85					90					95	
Ile	Gly	Leu	Leu	Leu	His	Ile	Trp	Gln	Ser	Leu	Asn	Ala	Pro	Ala	Pro
			100					105					110		
Thr	Leu	Lys	Lys	Pro	His	Met	Pro	Gly	Trp	Asp	Phe	Phe	Arg	Lys	
		115					120				125				
Arg	His	Ser	Lys	Pro	His	Leu	His	His	Arg	Thr	Glu	Cys	Arg	His	Pro
	130					135					140				
His	Glu	Cys	Pro	Val	Gly	Asp	Lys	Leu	Lys	Pro	Arg	Pro	Ser		
145					150					155					

<210> 6779

<211> 515

<212> PRT

<213> B.fragilis

<400> 6779

Cys	Pro	Asn	Met	Tyr	Ile	Pro	Asp	Pro	Asn	Arg	Met	Met	Ser	Ser	Leu
1				5					10					15	
Ser	Thr	Val	Arg	Ser	Ile	Tyr	Tyr	Arg	Gly	Ser	Leu	Glu	His	Cys	Asn
		20						25					30		
Tyr	Thr	Cys	Ser	Tyr	Cys	Pro	Phe	Gly	Arg	Lys	Ser	Val	Ser	Ala	Asp
		35					40					45			
Thr	Thr	Glu	Asp	Gln	Glu	Ala	Leu	Asp	Arg	Phe	Ile	Ser	Arg	Ile	Gly
	50					55					60				
Gly	Trp	Lys	Tyr	Gly	Ser	Leu	Arg	Ile	Leu	Ile	Ile	Pro	Tyr	Gly	Glu
65					70				75					80	
Ala	Met	Ile	His	Arg	Tyr	Tyr	Arg	Glu	Gly	Ile	Met	Arg	Leu	Ala	Ala
				85					90					95	
Met	Pro	His	Val	Ile	Gly	Val	Ser	Cys	Gln	Thr	Asn	Leu	Ser	Phe	Ser
			100					105					110		
Val	Ser	Arg	Phe	Leu	Asp	Glu	Ala	Glu	Ala	Glu	Gln	Ala	Asp	Val	Ser
		115					120					125			
Lys	Phe	Arg	Phe	Trp	Ala	Ser	Tyr	His	Pro	Glu	Met	Val	Gly	Val	Gly
	130				135						140				
Glu	Phe	Ala	Ser	Lys	Val	Glu	Met	Leu	Arg	Ala	Ala	Gly	Ile	Gly	Val
145					150					155					160
Cys	Ala	Gly	Ala	Val	Gly	Asp	Pro	Ser	Ala	Lys	Glu	Gln	Ile	Arg	Lys
				165					170					175	
Leu	Arg	Gln	Leu	Leu	Asp	Pro	Ser	Val	Tyr	Leu	Phe	Val	Asn	Ala	Met
			180						185				190		
Gln	Gly	Leu	Arg	Lys	Pro	Leu	Ser	Glu	Glu	Asp	Ile	Arg	Phe	Phe	Gly
		195						200					205		
Glu	Ile	Asp	Asn	Leu	Phe	Asp	Tyr	Asp	Arg	Arg	Asn	Ala	Lys	Ala	Cys
	210					215						220			
Leu	Asp	Gly	Cys	Val	Gly	Gly	Arg	Glu	Thr	Leu	Phe	Ile	Asp	Arg	Lys
225					230					235					240
Gly	Asp	Met	Tyr	Ala	Cys	Pro	Arg	Ser	Gly	Ile	Arg	Met	Gly	Asn	Phe
				245					250					255	
Tyr	Asp	Asp	Pro	Thr	Ser	Asp	Phe	Gln	Pro	Phe	Cys	Leu	Arg	Lys	Val
			260					265					270		
Cys	Asp	Trp	Tyr	Ile	Ala	Leu	Ser	Asn	Leu	Cys	Asp	Thr	Pro	Leu	Arg
		275					280						285		
Arg	Met	Met	Gly	Asp	Gly	Ala	Met	Trp	Arg	Ile	Leu	Glu	Arg	Lys	Lys
	290					295						300			
Val	Glu	Ala	Val	Phe	Phe	Asp	Val	Asp	Gly	Thr	Leu	Thr	Asp	Ala	Gln
305					310					315					320
Gly	Arg	Ile	Pro	Asp	Arg	Thr	Val	Ser	Val	Leu	Glu	Tyr	Met	Ala	Lys

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          325          330          335
Arg Leu Pro Leu Tyr Leu Ser Thr Ala Leu Pro Val Ser His Ala Lys
          340          345          350
Lys Arg Leu Gly Asn Val Phe Gly Leu Phe Ser Gly Gly Val Phe Ala
          355          360          365
Asp Gly Gly Leu Leu Cys Tyr Gly Glu Thr Ile Glu Cys Val Pro Ile
          370          375          380
Ala Asn Pro Val Thr Ala Gly Phe Pro Gly Cys Arg Val Thr Arg Tyr
          385          390          395          400
Thr Arg Glu Gly Lys Val Phe Lys Tyr Ala Val Leu Ala Pro Asn Thr
          405          410          415
Arg Glu Ala Val Arg Trp Leu Thr Glu Leu Asp Glu Glu Ala Tyr Gln
          420          425          430
Leu Tyr Gln Glu Gly Arg Leu Leu Thr Val Val Asp Ser Lys Ala Gly
          435          440          445
Lys Lys Asn Gly Leu Ile Thr Leu Cys Ala Arg Leu Gly Ile Ser Leu
          450          455          460
Arg Glu Val Leu Val Val Gly Asn Thr Met His Asp Trp Pro Met Met
          465          470          475          480
Ser Val Ala Gly Tyr Ser Cys Ala Val Met Asp Ala Glu Glu Lys Leu
          485          490          495
Arg Lys Leu Ser Gly Tyr Val Leu Asn Pro Asp Ser Ile Pro Val Phe
          500          505          510
Phe Asp Ile
          515

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<210> 6780

<211> 395

<212> PRT

<213> B.fragilis

<400> 6780

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Asn Leu Val Met Lys Lys Ile His Ile Gly Leu Leu Pro Arg Ile Ile
1          5          10          15
Ile Ala Ile Ile Leu Gly Ile Ala Ile Gly Asn Phe Leu Pro Thr Pro
          20          25          30
Leu Val Arg Leu Phe Val Thr Phe Asn Ser Ile Phe Gly Glu Phe Leu
          35          40          45
Asn Phe Ser Ile Pro Leu Ile Ile Leu Gly Leu Val Thr Ile Ala Ile
          50          55          60
Ala Asp Ile Gly Lys Gly Ala Gly Arg Met Leu Leu Val Thr Ala Leu
65          70          75          80
Ile Ala Tyr Gly Ala Thr Leu Phe Ser Gly Phe Leu Ser Tyr Phe Thr
          85          90          95
Gly Ala Ala Ile Phe Pro Ser Leu Ile Thr Pro Gly Ala Pro Leu Asp
          100          105          110
Glu Val Ser Glu Ala Gln Gly Ile Leu Pro Tyr Phe Ser Val Ala Ile
          115          120          125
Pro Pro Leu Met Asn Val Met Thr Ala Leu Val Leu Ala Phe Thr Leu
          130          135          140
Gly Leu Gly Leu Ala Ser Leu His Ser Asp Ala Leu Lys Asn Val Ala
145          150          155          160
Arg Asp Phe Gln Glu Ile Ile Val Arg Met Ile Ser Ala Val Ile Leu
          165          170          175
Pro Leu Leu Pro Ile Tyr Ile Phe Gly Ile Phe Leu Asn Met Thr His
          180          185          190
Ser Gly Gln Val Phe Ser Ile Leu Met Val Phe Ile Lys Ile Ile Gly
          195          200          205
Val Ile Phe Ile Leu His Ile Phe Leu Leu Val Phe Gln Tyr Cys Ile

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210	215	220
Ala Ala Leu Phe Val Arg Lys Asn Pro Phe Arg Leu Leu Gly Arg Met		
225	230	235
Leu Pro Ala Tyr Phe Thr Ala Leu Gly Thr Gln Ser Ser Ala Ala Thr		240
	245	250
Ile Pro Val Thr Leu Glu Gln Thr Lys Lys Asn Gly Val Ser Ala Asp		255
	260	265
Ile Ala Gly Phe Val Ile Pro Leu Cys Ala Thr Ile His Leu Ser Gly		270
	275	280
Ser Thr Leu Lys Ile Val Ala Cys Ala Leu Ala Leu Met Met Met Gln		285
	290	295
Gly Met Pro Phe Asp Phe Ser Leu Phe Ala Gly Phe Ile Phe Met Leu		300
305	310	315
Gly Ile Thr Met Ile Ala Ala Pro Gly Val Pro Gly Gly Ala Ile Met		320
	325	330
Ala Ser Leu Gly Ile Leu Gln Ser Met Leu Gly Phe Asp Glu Ser Ala		335
	340	345
Gln Ala Leu Met Ile Ala Leu Tyr Ile Ala Met Asp Ser Phe Gly Thr		350
	355	360
Ala Cys Asn Val Thr Gly Asp Gly Ala Ile Ala Leu Ile Ile Asp Lys		365
	370	375
Ile Met Gly Lys Arg Lys Thr Pro Glu Ser Leu		380
385	390	395

<210> 6781

<211> 149

<212> PRT

<213> B.fragilis

<400> 6781

Asn Arg Met Met Lys Arg Lys Leu Glu Ile His Lys Ile Asp Val Ser		
1	5	10
Ser Ser Leu Pro Ile Pro Tyr Ala Asp Glu Gly Ile Arg Ala Gly Phe		15
	20	25
Pro Ser Pro Ala Gln Asp Tyr Met Glu Gln Ala Ile Asp Leu Asn Lys		30
	35	40
Glu Leu Ile Lys His Pro Ala Ser Thr Phe Phe Gly Arg Val Val Gly		45
	50	55
Asp Ser Met Arg Asp Glu Gly Ile Glu Glu Gly Asp Ile Leu Val Ile		60
65	70	75
Asp Lys Ser Leu Glu Leu Gln Asp Asp Asp Leu Ala Val Cys Phe Ile		80
	85	90
Asp Gly Asp Phe Thr Val Lys Arg Val Arg Ile Glu Pro Asn Ala Val		95
	100	105
Trp Leu Ile Pro Ala Asn Pro Lys Tyr Ser Leu Ile Lys Val Thr Lys		110
	115	120
Glu Asn Glu Phe Ile Val Trp Gly Ile Val Thr Tyr Thr Ile Lys Lys		125
	130	135
Asn Arg Arg Lys Arg		140
145		

<210> 6782

<211> 319

<212> PRT

<213> B.fragilis

<400> 6782

Phe Met Lys Ile Val Val Leu Asp Gly Tyr Ala Ala Asn Pro Gly Asp		
1	5	10
		15

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Leu Asn Trp Asp Glu Leu Arg Thr Leu Gly Glu Cys Glu Ile Tyr Asp
      20      25      30
Arg Thr Ala Pro Asp Glu Val Leu Glu Arg Ser Lys Asp Ala Glu Ala
      35      40      45
Ile Leu Thr Asn Lys Val Val Ile Thr Ala Glu His Met Ala Ser Leu
      50      55      60
Pro Asn Leu Lys Tyr Ile Gly Val Ile Ala Thr Gly Tyr Asn Ile Ile
      65      70      75      80
Asp Val Ala Ala Ala Lys Glu Arg Gly Ile Thr Val Thr Asn Ile Pro
      85      90      95
Ala Tyr Ser Thr Pro Ser Val Gly Gln Met Val Phe Ala His Ile Leu
      100     105     110
Asn Ile Thr Gln Arg Val Gln His Tyr Ala Asp Glu Val Arg Gln Gly
      115     120     125
Arg Trp Thr Gln Ser Gln Asp Phe Cys Tyr Trp Asp Thr Pro Leu Ile
      130     135     140
Glu Leu Leu Gly Lys Lys Ile Gly Leu Ile Gly Leu Gly Gln Thr Gly
      145     150     155     160
Tyr Asn Thr Ala Arg Ile Ala Ile Gly Phe Gly Met Lys Val Trp Ala
      165     170     175
Tyr Thr Ser Lys Ser Arg Leu Gln Leu Pro Pro Glu Ile Arg Lys Ala
      180     185     190
Glu Leu Asp Gln Ile Phe Arg Glu Cys Asp Ile Val Ser Leu His Cys
      195     200     205
Pro Leu Thr Glu Ser Thr Arg Asp Leu Val Asn Thr Arg Arg Leu Glu
      210     215     220
Leu Met Lys Pro Asn Ala Ile Leu Ile Asn Thr Ser Arg Gly Pro Leu
      225     230     235     240
Val Asn Glu His Asp Leu Ala Glu Ala Leu Asn Asn Tyr Lys Ile Tyr
      245     250     255
Ala Ala Gly Leu Asp Val Leu Ser Thr Glu Pro Pro Arg Ala Asp Asn
      260     265     270
Pro Leu Leu Thr Ala Arg Asn Cys Phe Ile Thr Pro His Ile Ala Trp
      275     280     285
Ala Thr Ser Ala Ala Arg Glu Arg Leu Met Ala Ile Leu Val Asp Asn
      290     295     300
Leu Lys Ala Tyr Ile Gly Gly Lys Pro Val Asn Asn Val Ala Lys
      305     310     315

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<210> 6783

<211> 267

<212> PRT

<213> B.fragilis

<400> 6783

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Asn Ile Arg Val Ala Met Ile Lys Lys Ser Asp Lys Lys Asn Val Lys
1      5      10      15
Lys Cys Ile Arg Thr Asn Phe Asn Phe Tyr Leu Cys Pro Asn Leu Tyr
      20      25      30
Ala Met Leu Val Pro Thr Met Thr Thr Glu Glu Val Cys Lys Glu Ile
      35      40      45
Lys Asn Asp Tyr Pro Ala Phe Tyr Glu Lys Met Leu Asp Asn Lys Ala
      50      55      60
Ser Asn Tyr Arg Lys Phe Ile Lys Ala Val Leu Phe Pro Val Ile His
      65      70      75      80
Gln Phe Ser Trp Lys Ser Ser Ser Gly Asn Met Trp Asn Val Ile Met
      85      90      95
Leu Ala Arg Tyr Arg Asn Glu Arg Lys Cys Pro Gly Ile Val Pro Tyr
      100     105     110

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Leu Lys Tyr Glu Asn Trp Gly Met Gly Ile Ile Tyr Pro Lys Asn Ile
   115           120           125
Tyr Ser Asn Leu Ser Ile Ile Asp Phe Lys Pro His Phe Trp Lys Arg
   130           135           140
Tyr Arg Glu Arg Gln Leu Ile Pro Asn Gly Leu Glu Gly Ile Ser Phe
  145           150           155           160
Asp Glu Gln Ile Lys Tyr Phe Phe Leu Asn Ser Gly Leu Phe Thr Phe
           165           170           175
Asp Phe Arg Glu Gly Ser Asn Lys Gly His Glu Gly Phe Val Gly Tyr
           180           185           190
Thr Lys Thr Gly Ile Phe Phe Gly Val Val Ile Lys Glu Leu Asp Tyr
           195           200           205
Leu Cys Val Lys Thr Tyr Val Ser Ala Asn Met Leu Phe Asp Asn Gln
  210           215           220
Ile Glu Ser Leu Asp Ser Ala Asp Glu Leu Arg Glu Lys Ile Leu Ser
  225           230           235           240
His Pro Asp Tyr Phe Gln Lys Arg Gly Lys Leu Phe His Ile Met Asn
           245           250           255
Asp Ser Ser Phe Trp Met Asp Glu Thr Ile Arg
           260           265

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<210> 6784

<211> 287

<212> PRT

<213> B.fragilis

<400> 6784

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Asn His Phe Ser Met Glu Ile Asp Glu Leu Pro Ser Gly Thr Gln Asp
 1           5           10           15
Gln Lys Pro Asp Ile Asp Met Asn Glu Ile Val Gly Thr His Asp Ile
           20           25           30
Leu Met Leu Cys Phe Asp Thr Leu Arg Tyr Asp Val Ser Val Ala Glu
           35           40           45
Glu Ala Ser Gly Gly Thr Pro Val Leu Asn Ser Cys Gly Asn Gly Trp
           50           55           60
Glu Lys Arg His Ala Pro Gly Asn Phe Thr Tyr Pro Ser His Phe Ala
 65           70           75           80
Ile Phe Ala Gly Phe Leu Pro Ser Pro Ala Glu Pro His Met Leu Arg
           85           90           95
Asn Arg Lys Trp Leu Phe Phe Pro Phe Gln Ala Gly Thr Gly Arg Ile
           100           105           110
Pro Pro Glu Gly Ser Tyr Ala Phe Lys Glu Ala Thr Phe Val Gln Ser
           115           120           125
Leu Ala Gln Val Gly Tyr Glu Thr Ile Cys Ile Gly Gly Val Asn Phe
 130           135           140
Phe Ser Lys Arg Asn Asp Ile Gly Arg Val Phe Pro Gly Tyr Phe Asn
 145           150           155           160
Lys Ser Tyr Trp Leu Pro Thr Phe Gly Cys Thr Asp Lys Asn Ser Ala
           165           170           175
Ala Asn Gln Val Asp Phe Ala Val Asp Lys Leu Glu Lys Tyr Pro Ala
           180           185           190
Asp Arg Lys Val Phe Met Tyr Ile Asn Phe Ser Ala Ile His Tyr Pro
           195           200           205
Asn Cys His Tyr Val Glu Gly Lys Lys Lys Asp Asp Lys Glu Ser His
 210           215           220
Ala Ala Ala Leu Arg Tyr Val Asp Ser Gln Leu Pro Arg Leu Phe Glu
 225           230           235           240
Ala Phe Arg Arg Arg Ser Asp Thr Leu Val Ile Ala Leu Ser Asp His
           245           250           255

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<210> 6785
<211> 432
<212> PRT
<213> B.fragilis
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<400> 6785

Thr	Leu	Tyr	Ser	Gln	Lys	Met	Asn	Glu	Gln	Gln	Ile	Ser	Arg	Tyr
1				5					10				15	
Val	Ser	Tyr	Met	Tyr	Ser	Tyr	Pro	His	Lys	Thr	Ala	Tyr	Arg	Thr
			20					25					30	Leu
Thr	Pro	Pro	Val	Ser	Leu	Ser	Pro	Tyr	Leu	Glu	Arg	Leu	Glu	Gly
		35					40					45		Arg
Glu	Ala	Ser	Leu	Tyr	Phe	His	Ile	Pro	Phe	Cys	Ala	His	Lys	Cys
	50					55				60				Gly
Tyr	Cys	Asn	Leu	Phe	Ser	Gln	Gln	Cys	Cys	Asp	Ala	Glu	Arg	Ile
65					70					75				80
Leu	Tyr	Leu	His	Thr	Met	Arg	Arg	Gln	Ala	Glu	Gln	Leu	Ser	Val
				85					90					95
Ala	Gln	Gly	Leu	Lys	Phe	Thr	Ser	Phe	Ala	Val	Gly	Gly	Gly	Thr
			100					105					110	Pro
Leu	Ile	Leu	Asp	Glu	Gly	Gln	Leu	Glu	Glu	Leu	Phe	Cys	Leu	Ala
		115					120					125		Glu
Leu	Phe	Gly	Val	His	Pro	Ser	Arg	Val	Phe	Thr	Ser	Val	Glu	Thr
	130					135					140			Ser
Pro	Glu	Tyr	Thr	Gln	Lys	Ser	Val	Leu	Arg	Gln	Leu	Arg	Ala	Arg
145					150					155				160
Val	Glu	Arg	Leu	Ser	Met	Gly	Val	Gln	Ser	Phe	Asn	Glu	Thr	Glu
				165					170					175
Lys	Lys	Leu	Lys	Arg	Arg	Pro	Gly	Leu	Gly	Thr	Val	Val	Gly	Ala
			180					185					190	Leu
Glu	Asn	Ile	Val	Glu	Ala	Gly	Phe	Pro	Gln	Phe	Asn	Leu	Asp	Leu
		195					200					205		Ile
Tyr	Gly	Ile	Glu	Gly	Gln	Thr	Val	Glu	Ser	Phe	Met	Arg	Ser	Leu
	210					215				220				Asn
Thr	Ala	Leu	Thr	Tyr	Arg	Pro	Asn	Glu	Leu	Phe	Ile	Tyr	Pro	Leu
225					230					235				240
Val	Arg	Pro	Gly	Thr	Arg	Ile	Asp	Val	Arg	Ser	Thr	Asp	Asp	Ile
				245					250					255
Tyr	Ala	Ile	Tyr	Lys	Ser	Ala	Arg	Glu	Leu	Leu	Val	Gly	Gln	Gly
			260					265					270	Phe
Val	Gln	Thr	Ser	Met	Arg	Arg	Phe	Val	Arg	Arg	Glu	Thr	Thr	Glu
		275					280					285		Thr
Glu	Phe	Ser	Cys	Gly	Asp	Glu	Val	Met	Leu	Ser	Cys	Gly	Ala	Gly
	290					295					300			Gly
Arg	Ser	Tyr	Leu	Gly	Asn	Leu	His	Tyr	Ala	Thr	Pro	Tyr	Ala	Val
305					310					315				Arg
Gln	Gln	Ala	Ile	Ala	Asp	Glu	Ile	Asp	His	Tyr	Ile	Arg	Thr	Thr
				325					330					335
Phe	Met	Thr	Ala	Ala	Asn	Gly	Phe	Leu	Leu	Ser	Thr	Glu	Glu	Met
			340					345					350	Gln
Ile	Arg	Phe	Ile	Ile	Lys	Asn	Leu	Met	Tyr	His	Arg	Gly		

Arg	Glu	Phe	Thr	Asp	Arg	Gly	Trp	Ile	Glu	Glu	Thr	Gly	Arg	Ile	Val
385					390				395						400
Arg	Leu	Thr	Glu	Glu	Gly	Met	Ala	Tyr	Ser	Asp	Tyr	Ile	Gly	Gln	Ala
			405					410						415	
Phe	Ile	Ser	Pro	Ala	Val	Arg	Lys	Leu	Met	Ser	Glu	Tyr	Val	Tyr	Pro
			420					425					430		

<210> 6786

<211> 535

<212> PRT

<213> B.fragilis

<400> 6786

Val	Met	Asn	Thr	Lys	Thr	Lys	Leu	Leu	Tyr	Val	Gly	Phe	Arg	Ala	Leu
1				5					10					15	
Asn	Thr	Cys	Cys	Leu	Tyr	Ala	Ala	Phe	Leu	Met	Ile	Thr	Ser	Cys	Gly
			20					25					30		
Asp	Asn	Val	Val	Asn	Pro	Asp	Ser	Pro	Glu	Pro	Asp	Gly	Glu	Asp	Met
		35					40					45			
Ile	Pro	Val	Thr	Val	Ser	Arg	Val	Glu	Asp	Gly	Ser	Tyr	Met	Glu	Ser
	50					55					60				
His	Val	Asp	Thr	Pro	Asp	Thr	Thr	Gly	Gly	Arg	Thr	Leu	Val	Asp	Glu
65					70					75					80
Trp	Val	Pro	Val	Lys	Glu	Pro	Pro	Ala	Ser	Arg	Ala	Ile	Pro	Ala	Ala
				85					90					95	
Val	Pro	Tyr	Glu	Gly	Pro	Ser	Ala	Val	Arg	Met	Thr	Leu	Arg	Glu	Glu
			100					105					110		
Pro	Gln	Val	Thr	Thr	Arg	Ala	Ala	Thr	Leu	Gly	Asn	Asp	Ile	Tyr	Phe
		115					120					125			
Arg	Leu	Ile	Ala	Phe	Arg	Lys	Val	Gly	Ser	Asn	Tyr	Val	Phe	Gln	Ser
	130					135					140				
Ala	Ala	Asp	Phe	Thr	Thr	Asn	Gly	Ala	Ser	Ala	Pro	Thr	Leu	Arg	Gln
145						150				155					160
Gly	Asn	Leu	Leu	Thr	Arg	Ala	Gly	Thr	Val	Arg	Val	Ile	Gly	Tyr	Ser
				165				170						175	
Phe	Asn	Ser	Thr	Ala	Ala	Met	Gly	Thr	Ile	Pro	Ser	Ser	Tyr	Thr	Tyr
			180				185							190	
Asn	Ser	Thr	Ser	Val	Thr	Ile	Pro	Asp	Met	Asn	Ser	Asp	Phe	Met	Val
		195					200					205			
Tyr	Asp	Ser	Gly	Asp	Ile	Ala	Asn	Val	Ser	Thr	Ile	Ser	His	Asn	Leu
	210					215					220				
Ser	Val	Ser	Phe	Thr	Gln	Lys	Leu	Cys	Lys	Leu	Thr	Val	Lys	Leu	Ser
225					230					235					240
Leu	Ser	Gln	Phe	Gly	Ser	Asn	Thr	Phe	Thr	Asn	Cys	Thr	Gly	Val	Tyr
				245					250					255	
Val	Ser	Gln	Gly	Gly	Asn	Ala	Ser	Ala	Trp	Thr	Ile	Gly	Pro	Ser	Thr
			260					265					270		
Asn	Asn	Val	Ser	Ala	Asn	Thr	Gly	Asn	Thr	Pro	Thr	Phe	Asn	Ile	Ala
		275					280					285			
Asn	Asn	Ser	Thr	Ala	Thr	Val	Arg	Leu	Val	Pro	Phe	Ser	Gly	Ser	Arg
	290					295					300				
Ala	Ile	Thr	Val	His	Ile	Gly	Thr	Leu	Lys	Leu	Ser	Asn	Tyr	Phe	Asn
305					310					315					320
Ala	Asn	Asn	Arg	Asn	Ile	Thr	Ser	Ser	Gln	Asn	Val	Gln	Leu	Leu	Pro
				325					330					335	
Gly	Lys	Ser	Tyr	Thr	Ile	Thr	Leu	Lys	Phe	Glu	Leu	Gly	Ile	Gln	Leu
			340					345					350		
Ala	Ala	Ser	Asp	Ile	Asn	Leu	Thr	Gln	Asn	Gly	Cys	Thr	Ala	Ser	Asp
			355				360						365		

Lys Asn Asp Leu Ala Lys Leu Arg Trp Ala Thr Gly Asn Leu Lys Ser
 370 375 380
 Thr Gly Asn Val Asn Tyr Val Trp Ala Ser Ser Gln Thr Glu Gly Gly
 385 390 395 400
 His Phe Tyr Ser Phe Asn Lys Leu Tyr Asp Gly Ser Thr Gly Asp Pro
 405 410 415
 Cys Ser Lys Leu Asn Thr Ala Tyr Tyr Gly Thr Ser Trp Arg Thr Pro
 420 425 430
 Thr Lys Asn Glu Leu Glu Lys Leu Val Arg Cys Thr Asp Arg Val Tyr
 435 440 445
 Asn Gly Gly Met Trp Phe Met Asn Asn Arg Leu Gly Leu Phe Leu Lys
 450 455 460
 Ala Ala Gly Met Arg Pro Glu Thr Gly Pro Gly Leu Glu Gly Thr Gly
 465 470 475 480
 Ser Gly Thr Ser Gly Val Tyr Leu Thr Ser Thr Leu Gly Asn Arg Lys
 485 490 495
 Asn Thr Cys Tyr Ala Leu Asp Phe Gly Thr Thr Tyr Ile Val Val Thr
 500 505 510
 Asp Thr Gly Ala Trp Asn Ala Leu Gln Ile Asn Gly Tyr Ser Val Arg
 515 520 525
 Cys Val Lys Gly Thr Lys Gln
 530 535

<210> 6787

<211> 474

<212> PRT

<213> B.fragilis

<400> 6787

Pro Cys Ile Asn Asn His Thr Ser Tyr Asn Tyr Tyr Lys Phe Arg Ile
 1 5 10 15
 Lys Met Asn Arg Glu Asn Lys Pro Leu Phe Leu Tyr Thr Phe Ile Thr
 20 25 30
 Val Phe Gly Gly Leu Ile Val Gly Leu Asn Met Ala Gly Ile Ser Gly
 35 40 45
 Ala Val Pro Phe Leu Gln Glu Gln Phe Met Leu Asp Asp Met Ala Leu
 50 55 60
 Gly Leu Val Val Ser Ile Leu Thr Val Gly Cys Leu Cys Gly Ala Leu
 65 70 75 80
 Leu Gly Gly Gly Phe Ser Asp Arg Tyr Gly Arg Gln Lys Val Met Phe
 85 90 95
 Ser Ser Ala Val Phe Phe Ile Val Ser Ser Leu Gly Cys Ala Leu Ser
 100 105 110
 Gly Asn Leu Val Ser Leu Leu Val Phe Arg Leu Ile Cys Gly Leu Gly
 115 120 125
 Ile Gly Val Ile Ser Ala Val Ala Pro Ile Tyr Ile Ser Glu Ile Ser
 130 135 140
 Pro Ala Arg Leu Arg Gly Thr Leu Val Ser Tyr Asn Gln Leu Ala Ile
 145 150 155 160
 Val Ile Gly Ile Leu Ile Ala Tyr Ile Val Asp Tyr Ile Leu Leu Asp
 165 170 175
 Tyr Glu Arg Asn Trp Arg Leu Met Leu Gly Phe Pro Phe Phe Ser
 180 185 190
 Val Ala Tyr Leu Leu Leu Leu Gly Ile Leu Pro Glu Ser Pro Arg Trp
 195 200 205
 Leu Ser Ala Arg Gly Lys Ala Gly Arg Ala Arg Gln Val Ala Ser Lys
 210 215 220
 Leu Asn Leu Glu Ala Gly Glu Met Thr Val Ser Asp Thr Asn Thr Gln
 225 230 235 240

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<210> 6788
<211> 184
<212> PRT
<213> B.fragilis
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Gly 1	Glu	Cys	Glu	Arg 5	Arg	Thr	Cys	Phe	Leu 10	Glu	Asn	Ile	Ile	Asn 15	Thr
Lys	Leu	Asp	Ile 20	Ser	Met	Lys	Gln	Ser 25	Lys	Arg	Asn	Val 30	Trp	Trp	Ser
Val	Cys	Ala	Gly 35	Leu	Leu	Phe	Cys 40	Ser	Trp	Gly	Cys	Ser 45	Ser	Arg	Val
Ser	Asp	Lys	Pro	Val	Thr	Leu 55	Glu	Thr	Leu	Leu	Asp 60	Glu	Met	Val	Ser
Val 65	Glu	Glu	Gln	Ala 70	Leu	Tyr	Pro	Val	Pro	Ser	Tyr 75	Thr	Cys	Arg 80	Gln
Glu	Ser	Ser	Tyr 85	Asp	Arg	Ala	Ser	Val 90	Ser	Pro	Asp	Ser	Ala 95	Gly	Trp
Phe	Ala	Asn	Ser 100	Asp	Gly	Phe	Gly 105	Ile	Lys	Arg	Val	Asp 110	Thr	Val	Ala
Gly	Arg	Ile 115	Glu	Lys	Val	Met	Phe 120	Asp	Glu	Val	Gly 125	Pro	Gly	Ala	Ile
Thr	Arg 130	Ile	Trp	Ile	Thr	Thr 135	Ile	Asp	Lys	Arg	Gly 140	Thr	Trp	Arg	Phe
Tyr 145	Phe	Asp	Gly	Ser 150	Asp	Gln	Pro	Gly	Trp	Ile 155	Ile	Pro	Ala	His 160	Asp
Leu	Leu	Arg	Ile 165	Asn	Val	Pro	Gly	Leu 170	Gly	Lys	Val 175	Met	Leu	His	Gly

Thr His His Leu Tyr Ala Leu Trp
180

<210> 6789

<211> 61

<212> PRT

<213> B.fragilis

<400> 6789

Cys	Asn	Lys	Asp	Lys	Thr	Leu	Phe	Ser	Ser	Val	Gln	Ile	Phe	Ile	His
1				5					10					15	
Tyr	Ser	Asn	Asn	Gln	Leu	Phe	Ile	Ser	Ser	Ser	Tyr	Ile	Gln	Cys	Thr
			20					25					30		
Glu	Pro	Lys	Gln	Cys	Phe	Lys	Lys	Gly	Thr	Ser	Phe	Glu	Thr	Gln	Glu
		35					40					45			
Ser	Phe	Tyr	Leu	Ser	Asn	Leu	His	Lys	Leu	Thr	Ala	Lys			
	50					55					60				

<210> 6790

<211> 503

<212> PRT

<213> B.fragilis

<400> 6790

Tyr	Met	Asn	Arg	Thr	Phe	Ile	Met	Arg	Glu	Cys	Leu	Gly	Lys	Ala	Leu
1				5					10					15	
Trp	Leu	Cys	Phe	Cys	Leu	Ser	Ile	Ala	Gly	Cys	Ala	Glu	Asp	Asp	Arg
			20					25					30		
Met	Thr	Pro	Leu	Ser	Ala	Asp	Ser	Gly	Asp	Thr	Ala	Asp	Glu	Leu	Ile
		35					40					45			
Pro	Ile	His	Ile	Ser	Leu	Thr	Gly	Asp	Asn	Asp	Tyr	His	Ser	Ser	Ser
	50					55				60					
Phe	Asn	Asn	Ala	Ser	Thr	Arg	Ser	His	Ser	Pro	Leu	Ile	Ala	Glu	Trp
65					70					75				80	
Val	Gly	Val	Lys	Ala	Phe	Ser	Pro	Thr	Arg	Thr	Gly	Glu	Gln	Pro	Asp
			85						90					95	
Tyr	Asp	Gly	Pro	Arg	Ile	Ala	Ser	Met	Glu	Leu	Thr	Glu	Asp	Thr	Leu
			100					105					110		
Pro	Arg	Val	Ser	Thr	Arg	Ala	Thr	Val	Pro	Ala	Gly	Val	Tyr	Phe	Arg
		115					120					125			
Leu	Ile	Val	Phe	Arg	Lys	Ser	Gly	Asn	Asn	Tyr	Val	Phe	Gln	Ser	Val
	130					135					140				
Ala	Asp	Tyr	Ala	Ser	Asn	Gly	Thr	Gly	Thr	Pro	Val	Leu	Lys	Gln	Gly
145					150					155				160	
Lys	Leu	Leu	Thr	Arg	Ser	Gly	Thr	Ile	Arg	Met	Val	Gly	Tyr	Ser	Phe
				165					170					175	
Asn	Thr	Ala	Thr	Ala	Ala	Asp	Leu	Gly	Thr	Met	Leu	Ser	Thr	Tyr	Ala
			180					185					190		
Tyr	Asn	Ser	Ser	Thr	Val	Ser	Ile	Pro	Asn	Met	Ser	Lys	Asp	Phe	Met
		195					200					205			
Thr	Phe	Asp	Ser	Gly	Asp	Ile	Thr	Asn	Val	Asn	Ser	Leu	Ser	His	Asn
	210					215					220				
Leu	Pro	Val	Ser	Phe	Asn	Gln	Lys	Leu	Cys	Lys	Leu	Thr	Ile	Thr	Ile
225					230					235				240	
Ser	Pro	Thr	Gly	Phe	Pro	Ser	Asn	Thr	Ile	Thr	Asn	Cys	Thr	Gly	Val
				245					250					255	
Tyr	Val	Lys	Gln	Gly	Gly	Asn	Ser	Thr	Ser	Trp	Lys	Ile	Gly	Pro	Ser
			260					265					270		
Thr	Asn	Val	Val	Ala	Thr	Asn	Thr	Asn	Asn	Thr	Ala	Ala	Phe	Ser	Pro

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275 280 285
 Ser Thr Ala Leu Ser Thr Thr Ile Arg Met Val Pro Phe Ala Gly Ala
 290 295 300
 Arg Thr Ile Thr Val His Phe Asn Thr Leu Thr Val Gly Gly Arg Ile
 305 310 315 320
 Val Asn Asn Asn Thr Glu Ile Thr Ser Thr Gln Ser Val Gln Leu Lys
 325 330 335
 Glu Gly Lys Ser Tyr Thr Leu Lys Ile Gln Phe Lys Lys Gly Pro Gly
 340 345 350
 Ile Asn Val Leu Glu Ser Asp Ile Asn Leu Thr Gly Asn Gly Cys Thr
 355 360 365
 Ala Gln Asp Lys Lys Asp Leu Ala Lys Leu Ile Trp Ala Asp Gly Asn
 370 375 380
 Leu Lys Ser Thr Gly Asn Ser Asn Tyr Val Trp Thr Thr Ser Thr Asp
 385 390 395 400
 Arg Gly Tyr Tyr Tyr Thr Trp Tyr Ser Thr Tyr Thr Gly Asn Thr Ser
 405 410 415
 Gln Asn Asn Thr Asp Pro Cys Ser Lys Leu Asn Val Ser Thr Tyr Gly
 420 425 430
 Thr Gly Trp Arg Thr Pro Ser Arg Asn Glu Leu Thr Lys Leu Ser Arg
 435 440 445
 Cys Thr Asn Lys Ala Lys Val Asn Asn Gly Met Trp Phe Met Asn Ser
 450 455 460
 Ser Lys Gly Leu Phe Leu Pro Leu Ala Gly His Thr Pro Ser Ala Ser
 465 470 475 480
 Gly Ala Asn Thr Gly Gly Asn Ala Ile Met Asn Gly Asn Arg His Gly
 485 490 495
 Asn Tyr Trp Cys Thr Lys Glu
 500

<210> 6791
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 6791
 Pro Pro Leu Phe Ile Leu Phe Ser Phe Leu Pro Arg Ile Val Arg Ile
 1 5 10 15
 Phe Phe Pro Asn Thr Met His Ile Gly Ile Val Leu Phe Thr Lys Pro
 20 25 30
 Met Pro Phe Ile Leu Tyr Ser Ala Val Val Leu Ile Tyr Ile Ser Asn
 35 40 45
 Tyr Ile Ser Leu Phe Tyr Arg Leu Tyr Leu Asn Ser Leu Ala Pro Thr
 50 55 60
 Pro Leu Ile Asn Ser Gly
 65 70

<210> 6792
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 6792
 Leu Phe Pro Ser Phe Asn Cys Thr Leu Trp Val Asp Val Ile Ser Val
 1 5 10 15
 Leu Leu Phe Thr Ile Arg Pro Pro Thr Val Ser Val Leu Lys Cys Thr
 20 25 30
 Val Ile Val Leu Ala Pro Ala Asn Gly Thr Met Arg Met Val Val Leu
 35 40 45

Arg Ala Val Leu Gly Leu Asn Ala Ala Val Leu Phe Val Leu Val Ala
 50 55 60
 Thr Thr Leu Val Glu Gly Pro Ile Phe His Asp Val Glu Phe Pro Pro
 65 70 75 80
 Cys Phe Thr Tyr Thr Pro Val Gln Leu Val Ile Val Leu Leu Gly Asn
 85 90 95
 Pro Val Gly Leu Met Val Ile Val Ser Leu His Asn Phe
 100 105

<210> 6793

<211> 205

<212> PRT

<213> B.fragilis

<400> 6793

Ile Lys Glu Thr Met Leu Leu Pro Trp Leu Asn Glu Glu Leu Ile Glu
 1 5 10 15
 Ala Gly Cys Asp Glu Ala Gly Arg Gly Cys Leu Ala Gly Ala Val Tyr
 20 25 30
 Ala Ala Ala Val Ile Leu Pro Lys Asp Phe Glu Asn Glu Leu Leu Asn
 35 40 45
 Asp Ser Lys Gln Leu Ser Glu Lys Gln Arg Tyr Ala Leu Arg Glu Val
 50 55 60
 Ile Glu Arg Asp Ala Val Ala Trp Ala Ile Gly Ile Val Ser Pro Glu
 65 70 75 80
 Glu Ile Asp Lys Ile Asn Ile Leu Asn Ala Ser Phe Leu Ala Met His
 85 90 95
 Arg Ala Val Asp Arg Leu Lys Thr Arg Pro Gln His Leu Leu Ile Asp
 100 105 110
 Gly Asn Arg Phe Lys Lys Tyr Pro Asp Ile Pro His Thr Thr Val Ile
 115 120 125
 Lys Gly Asp Gly Lys Tyr Leu Ser Ile Ala Ala Ala Ser Ile Leu Ala
 130 135 140
 Lys Thr Tyr Arg Asp Asp Tyr Met Asn Arg Leu His Gln Glu Phe Pro
 145 150 155 160
 Cys Tyr Asp Trp Glu His Asn Lys Gly Tyr Pro Thr Lys Lys His Arg
 165 170 175
 Ala Ala Ile Ala Gly His Gly Thr Thr Pro Tyr His Arg Met Thr Phe
 180 185 190
 Asn Leu Leu Gly Asp Gly Gln Leu Glu Leu Phe Ser Lys
 195 200 205

<210> 6794

<211> 311

<212> PRT

<213> B.fragilis

<400> 6794

Asn Ile Met Ser Lys Lys Ala Leu Leu Met Ile Leu Asp Gly Trp Gly
 1 5 10 15
 Leu Gly Asp His Gly Lys Asp Asp Val Ile Phe Asn Thr Ala Thr Pro
 20 25 30
 Tyr Trp Asp Tyr Leu Met Glu Thr Tyr Pro His Ser Gln Leu Gln Ala
 35 40 45
 Ser Gly Glu Asn Val Gly Leu Pro Asp Gly Gln Met Gly Asn Ser Glu
 50 55 60
 Val Gly His Leu Asn Ile Gly Ala Gly Arg Val Val Tyr Gln Asp Leu
 65 70 75 80
 Val Lys Ile Asn Leu Ser Cys Arg Asp Asn Ser Ile Leu Lys Asn Pro

Cys Thr Val Arg Tyr Gly Asp Lys Thr Leu Ser Phe Lys Thr Ser Lys
 165 170 175
 Gly Lys Val Tyr Lys Leu Ala Leu Asp Ala Asp Arg Leu Val Ile Lys
 180 185 190

<210> 6798
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 6798
 Arg Lys Arg Thr Asn Gln Lys Val Arg Ser Tyr Ile Lys Ala Asp Leu
 1 5 10 15
 Ser Leu Phe Ser Lys Phe Arg Glu Asn Leu Ile Thr Phe Gly Gln Thr
 20 25 30
 Asn Leu Ile Asn Lys Ser Ala Trp Phe Arg Lys Glu Gln Glu Lys Asn
 35 40 45
 Asp Ile His Thr Val Thr Ser Asn Asn Tyr Ala Tyr Glu Val Glu Lys
 50 55 60
 Thr Asn Pro Leu Gln Thr Leu Phe Arg Lys Gln Asn Lys Ile Arg Asn
 65 70 75 80
 Pro Lys Thr Asn Tyr Gln Ile Asn Val
 85

<210> 6799
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 6799
 Pro Phe Ala Asn Arg Glu Arg Leu Ile Phe Leu Pro Pro Ser Ser Glu
 1 5 10 15
 Ala Ala Arg Phe Ile His Tyr Leu Leu Leu Phe Asn Lys Ile Val Val
 20 25 30
 Gln Arg Ala Val Ile Lys Lys Ile Ile Ile Ile Asn Ser Cys Ile Leu
 35 40 45
 Leu Lys Val Ile Ala Ser Leu Pro Arg Asp Ile Val Ile Leu
 50 55 60

<210> 6800
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 6800
 Phe Tyr Gln Ile Lys Ile Ser Pro Glu Glu Lys Tyr Phe Phe Arg Gly
 1 5 10 15
 Tyr Phe Cys Phe Ile Thr Gln Ser Ser Leu His Pro Glu Lys Tyr Ile
 20 25 30
 His His Thr Glu Ile Ser Lys Pro Asn Val Thr Ala Ile Arg Ile Leu
 35 40 45
 Leu Leu Thr Phe Tyr Tyr Leu Tyr Cys Lys Ile Gln Lys Val Ser Tyr
 50 55 60
 Leu Thr Phe Trp Tyr Phe Ser Thr Pro Thr Phe Leu Asn Ile Asn Thr
 65 70 75 80
 Ile Lys Gln Asn Arg Ile Glu Asn Arg Asn Glu Lys Thr Lys Pro
 85 90 95

<210> 6801

<211> 387
 <212> PRT
 <213> B.fragilis

<400> 6801

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Asp His Thr Ser Arg Ser Leu Glu Lys Ser Leu Leu Tyr Asp Phe Thr
1          5          10          15
Asn Ser Gln Lys Thr Val Tyr Met Lys Ile Gly Ile Leu Thr Phe His
20          25          30
Asp Ala His Asn Tyr Gly Ala Met Leu Gln Cys Tyr Ala Leu Gln Gln
35          40          45
Phe Leu Phe Lys Lys Gly Tyr Asn Val Glu Val Ile Asp Tyr Arg Pro
50          55          60
Ala Phe Tyr Gln Lys Gln Tyr His Arg His Ser Leu Cys Pro Trp Ile
65          70          75          80
Gly Lys Asn Pro Val Arg Thr Met Lys Ser Ile Tyr Tyr Asn Tyr Tyr
85          90          95
Leu Phe Asn Lys Arg Cys Ala Ala Phe Ser Asp Phe His Asn Arg His
100         105         110
Leu Tyr Met Ser Ile Pro Ala Thr Arg Thr Asn Ile Pro Gln Ser Tyr
115         120         125
Asp Ala Tyr Ile Val Gly Ser Asp Gln Ile Trp Asn Pro Gln Leu Thr
130         135         140
Asn Gly Phe His Asp Val Tyr Phe Cys Asp Phe Cys Phe Pro Lys Gly
145         150         155         160
Lys Ser Arg Phe Ile Ala Tyr Ala Pro Ser Met Glu Ile Ser Arg Leu
165         170         175
Ser Thr Gln Glu Ala Glu Tyr Leu Thr Arg Val Leu Asn Cys Phe Asp
180         185         190
Ala Leu Ser Val Arg Glu Ser Ser Leu Ile Pro Ile Leu Gln Pro Leu
195         200         205
Val Ser Gln Pro Ile Gln Gln Val Leu Asp Pro Thr Leu Leu Leu Asp
210         215         220
Ala Thr Ala Trp Asn Pro Leu Ile Gly Lys Cys Pro Glu Asn Arg Pro
225         230         235         240
Tyr Val Val Leu Tyr Gln Val Arg Glu Asn Pro Ala Val Arg Met Lys
245         250         255
Ala Phe Glu Ile Ala Gln Ser Ile Gly Gly Ile Val Val Glu Leu Thr
260         265         270
Ala Arg Ile Asp Cys His Tyr Ser Thr Lys Tyr Gln Thr Ala Ser Pro
275         280         285
Ala Asp Phe Val Thr Tyr Ile Arg Tyr Ala Thr Tyr Val Val Thr Thr
290         295         300
Ser Phe His Gly Thr Ala Phe Ser Leu Ile Phe Asn Arg Pro Phe Tyr
305         310         315         320
Thr Phe Ser Leu Gly Asp Asn Phe Asp Ser Arg Ser Ala Ser Leu Leu
325         330         335
Glu Ser Val Asn Leu Thr Glu Arg Leu Val Cys Pro Asp Glu Gln Phe
340         345         350
Glu Ile Ser Leu Ile Asp Phe Lys Gln Ala Asn Lys Arg Leu Lys His
355         360         365
Leu Arg Lys Gln Ser Cys Asp Phe Leu Arg Gln Ser Leu His Glu Arg
370         375         380
Gln Glu Gln
385

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<210> 6802
 <211> 799
 <212> PRT

<213> B.fragilis

<400> 6802

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Ile Tyr Leu Phe Pro Val Tyr His Ser Tyr Arg Met Lys Arg Cys Leu
1      5      10      15
Leu Tyr Ile Leu Cys Cys Phe Gly Val Val Gln Leu Ser Ala Gln Pro
20      25      30
Ala Asp Asn Ile Arg Asn Ser Phe Val Lys Ala Glu Thr Phe Tyr Lys
35      40      45
Ser Gly Asp Ile Asp Glu Ala Cys Arg Ile Leu Glu Glu Asn Leu Ser
50      55      60
Ser Phe Gln Gly Thr Met His Thr Glu Ala Cys Arg Leu Ala Ala Leu
65      70      75      80
Cys Cys Leu Ala Leu Asp Arg Phe Pro Glu Ala Glu Lys Tyr Val Ser
85      90      95
Leu Leu Leu Lys Asp Glu Pro Tyr Tyr Tyr Ile Ser Leu Gln Asp Pro
100     105     110
Glu Arg Phe Ala Asp Met Val Arg Lys His Arg Glu Thr Lys Val Thr
115     120     125
Leu Val Thr Ala Ser Gln Gln Val Glu Thr Pro Glu Glu Ala Pro Val
130     135     140
Pro Val Thr Leu Ile Thr Glu Glu Met Ile Arg Ala Ile His Ala Arg
145     150     155     160
Cys Leu Arg Asp Val Leu Ile Ala Tyr Val Pro Gly Ile Ser Gly Leu
165     170     175
Ser Ser Asn Glu Glu Met Asn Leu Ala Met Arg Gly Val Tyr Ser Pro
180     185     190
Glu Gln Glu Asn Ile Leu Ile Met Gln Asp Gly Gln Arg Leu Asn Ser
195     200     205
Tyr Ile Thr Asn Ala Val Ser Pro Asp Tyr Gly Ile Ser Leu Ala Lys
210     215     220
Val Lys Gln Ile Glu Val Leu Arg Gly Pro Ala Ser Ser Leu Tyr Gly
225     230     235     240
Ser Val Ala Leu Thr Ala Val Ile Asn Ile Val Thr Lys Asp Gly Val
245     250     255
Asp Val Arg Asn Gly Ser Ile Ser Val Ser Ala Gly Asn Arg Gly Gln
260     265     270
Leu Ala Ala Asp Leu Leu Leu Gly Lys His Asp Met Asn Met Asp Phe
275     280     285
Met Ala Trp Phe Ser Leu Tyr Arg Ala Thr Gly Glu Ser Val Phe Val
290     295     300
Pro Ala Glu Lys Gln Tyr Ala Leu Tyr Pro Arg Asp Gly Phe Ile Arg
305     310     315     320
Leu Asp Asn Tyr Ser Gly Phe Pro Ala Met Asp Gly Gly Ile Lys Leu
325     330     335
Gln Arg Gly Asn Leu Leu Phe Ser Phe Ser Met Asn Tyr Ala Lys Lys
340     345     350
Arg Gln Pro Tyr Ser Met Trp Leu Phe Ser Ser Pro Tyr Ser Tyr Glu
355     360     365
Arg Phe Arg Thr Phe Asp Gly Ser Gly Pro Gly Tyr Ser Arg Trp Ser
370     375     380
Ala Arg Glu Gln Ala Val Tyr Ser Arg Thr Trp Gln Arg Ile Thr Phe
385     390     395     400
Ser Thr Ala Phe Tyr Thr Asp Trp Asn Lys Asn Val His Tyr Glu Thr
405     410     415
Ser Gly Asp Thr Leu Gln Asp Tyr Pro Ile Phe Pro Asn Tyr Asp Tyr
420     425     430
Gln Pro Ile Ile Tyr Pro Thr Arg Gly Ala Phe Gln Tyr Ile Arg Trp
435     440     445

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Met Asp Phe Asn Val Gly Phe Asn Gly Arg Val Asn Tyr Ala Tyr Asp
 450 455 460
 Trp Gly Lys Leu Gly Lys Gly Asn Met Leu Gly Gly Val Glu Trp Asn
 465 470 475 480
 Arg Tyr Thr Leu Tyr Asp Ser Glu Tyr Leu Glu Gly Met Asn Phe Lys
 485 490 495
 Glu Ile Val Arg Thr Trp Ile Glu Lys Arg Leu Tyr Thr Gly His Glu
 500 505 510
 Met Asn Thr Asp Ala Phe Leu Gln Ile Lys His Asn Leu His Lys Asn
 515 520 525
 Trp Ile Val Asn Ala Gly Ile Arg Tyr Asp Tyr Lys Arg Arg Ser Asn
 530 535 540
 Lys Arg Thr Leu Gln Ala Phe Ser Pro Arg Leu Ser Leu Ile Tyr Leu
 545 550 555 560
 Arg Asn Gly Leu Asn Ile Lys Ala Ser Tyr Ser Arg Ala Phe Val Asp
 565 570 575
 Ala Pro Tyr Tyr Tyr Arg Asn Asn Glu Met Asp Thr Tyr Ser Gly Gly
 580 585 590
 Glu Asn Leu Gln Ala Glu Tyr Leu Ser Ser Tyr Gln Val Thr Cys Ala
 595 600 605
 Tyr His His Ser Pro Ser His Ile Asp Val Glu Cys Asn Leu Phe Tyr
 610 615 620
 Asn Arg Ala Ser His Phe Leu Phe Thr Gln Pro Glu Thr Arg Val Tyr
 625 630 635 640
 Glu Asn Ala Gly Ser Leu Asp Met Gly Gly Val Glu Val Val Ala Arg
 645 650 655
 Tyr Lys Ala Asp Arg Leu Ser Leu Asp Gly Asn Leu Cys Phe Gln Lys
 660 665 670
 Val Leu Asn Tyr Thr Asn Phe Phe Val Thr Asp Gly Ser Val Asn Asn
 675 680 685
 Val Pro Gly Phe Ser Met Asn Leu Val Ala Asn Tyr Phe Leu Leu Lys
 690 695 700
 Lys Lys Val Gln Ser Trp Ser Ala His Leu Lys Leu Asn Cys Ser Ser
 705 710 715 720
 His Cys Tyr Thr Gln Ile Ser Val Leu Glu Asp Gly Leu Asn Gly Asp
 725 730 735
 Ala Thr Asn Tyr Thr Val Arg Leu Pro Gly Tyr Ala Val Phe Ser Phe
 740 745 750
 Thr Thr Arg Tyr Lys Tyr Lys Arg Ile Glu Gly Ser Leu Gly Ile Glu
 755 760 765
 Asn Leu Phe Asn Asn Arg Tyr Glu Cys Gly Gly Ala Thr Val Pro Ile
 770 775 780
 Arg Gln Lys Gly Arg Trp Ile Ser Ala Ser Ile Leu Tyr Asn Phe
 785 790 795

<210> 6803

<211> 67

<212> PRT

<213> B.fragilis

<400> 6803

Leu Gln Phe Pro Ser Pro Glu Gly Lys Glu Asp Ser Val Pro Leu Pro
 1 5 10 15
 Ile Pro Gly Tyr Ala Phe Asn Thr Met Ala His Asn Tyr Pro Gly Leu
 20 25 30
 Ala Asp Ile Leu Lys Arg Leu Gly Ile Asn Glu Val Asn Glu Val Asn
 35 40 45
 Ala Ile Leu Arg Leu Pro Asp Tyr Glu Arg Lys Gly Thr Val Gln Pro
 50 55 60

Leu Phe Ser

65

<210> 6804

<211> 954

<212> PRT

<213> B.fragilis

<400> 6804

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Ile Leu Leu Pro Lys Asn Val Ser Ala Met Lys Lys Ile Val Phe Leu
1      5      10      15
Ile Met Cys Leu Cys Ser Val Tyr Ala Asn Ser Gln Glu Gly Ile Pro
      20      25      30
Phe Phe Val Asn Tyr Pro Ala Ser Val Tyr Gln Ala His Asn Arg Asn
      35      40      45
Phe Asp Val Val Cys Asp Ser Cys Gly Asn Val Tyr Phe Ala Asn Phe
      50      55      60
Glu Gly Ile Leu His Tyr Asp Tyr Asn Arg Trp Glu Thr Ile Tyr Thr
65      70      75      80
Pro Gly Phe Ser Arg Val Thr Arg Leu Phe Arg Asp Ser Glu Gly Arg
      85      90      95
Ile Trp Val Gly Gly Tyr Asn Val Phe Gly Arg Ile Glu Arg Asp Gly
      100      105      110
Arg Gly Cys Ile Thr Leu Arg Thr Leu Leu Ser Asp Leu Asp Thr Asp
      115      120      125
Ser Leu Gly Glu Leu Glu Asp Met Ala Glu Ile Asp Lys Arg Ile Tyr
      130      135      140
Leu Lys Ala Thr Ser Gly Arg Tyr Tyr Thr Val Gln Ser Asp Ser Ile
145      150      155      160
Leu Thr Pro Val Gln Val Leu Pro Ala Gln Leu Gln Glu Lys Trp Arg
      165      170      175
Asn Gln Ser Ser Val Ser Met Asn Arg Ala Phe Ser Leu Pro Gly Gly
      180      185      190
Glu Thr Ile Ser Ile Asn Ser Ala His Gly Leu Ile Met Asp Asp Ser
      195      200      205
Gly Lys Lys Glu Arg Phe Ser Val Thr Glu Arg Asn Gly Leu Cys Ser
      210      215      220
Asn Ala Val Ser Gly Ile Ala Ala Asp Gly Arg Gly Asn Leu Trp Gly
225      230      235      240
Ala Thr Asp Asn Gly Val Phe His Val Phe Ile Pro Ser Leu Phe Ser
      245      250      255
Arg Tyr Thr Ser Gly Glu Gly Leu Lys Gly Glu Val Ile Ser Ala Val
      260      265      270
Ser Tyr Lys Gly Met Ile Tyr Thr Gly Thr Leu Gln Gly Leu Tyr Val
      275      280      285
Leu Lys Gln Asn Thr Phe Val Pro Val Gln Gly Ile Ser Gln Ala Cys
      290      295      300
Trp Arg Leu Cys Leu Ser Pro Gln Gly Glu Leu Tyr Ala Ala Ser Gly
305      310      315      320
Asp Gly Val Tyr Val Ile Arg Asp Tyr Asn His Ser Glu Lys Leu Thr
      325      330      335
Asp Met Ala Ala Tyr Ser Leu Ala Phe Ile Gly His Thr Asn Leu Leu
      340      345      350
Met Gly Thr Met Asp Gly Ile Tyr Gln Tyr Ser Ala Asp Glu Glu Arg
      355      360      365
Ile Lys Lys Ile Ser Asp Val Glu Lys Val Val Arg Leu Glu Val Lys
      370      375      380
Lys Asp Arg Ser Val Trp Ala Lys Thr Leu Tyr Gly Glu Ile Tyr Leu
385      390      395      400

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Arg Glu Glu Gly Glu Ser Ser Phe Val Leu Gln Asp Arg Glu Ser Glu
 405 410 415
 Glu Val Met Thr Glu Tyr Thr Asp Asn Asp Gly Cys His Trp Gln Thr
 420 425 430
 Asn Leu Lys Gly Lys Glu Val Gln Val His His Ser Gln Ile Asp Thr
 435 440 445
 Glu Lys Phe Asn Gln Cys Leu Tyr Ala Ile Arg Asn Tyr Val Val Arg
 450 455 460
 Val Ile Tyr Ile Glu Glu Asp Arg Ala Ala Trp Phe Gly Gly Asp Phe
 465 470 475 480
 Gly Leu Ile Arg Met Asp Leu Glu Lys Ala Arg Thr Phe Thr Pro Val
 485 490 495
 Ala Pro Arg Ile Tyr Leu Arg Glu Ile Cys Leu Asn Arg Asp Ser Val
 500 505 510
 Tyr Trp Gly Gly Asp Leu Pro Glu Glu Ser Gly Gly Ala Asp Trp Gln
 515 520 525
 Ile Asn Ser Thr Ala Pro Arg Leu Gly Asn Asp Val Arg Ser Ile Arg
 530 535 540
 Phe Ser Phe Ala Thr Asp Ala Pro Cys Phe Thr Gly Ser Asn Glu Tyr
 545 550 555 560
 Arg Tyr Arg Leu Val Gly Tyr Asp Pro Glu Trp Ser Ser Trp Asp Pro
 565 570 575
 Gly Thr Val Lys Glu Tyr Ala Asn Leu Ser Ser Gly Thr Tyr Thr Phe
 580 585 590
 Cys Val Arg Ala Arg Asp Ile Tyr Gly Thr Glu Ser Glu Met Asn Gln
 595 600 605
 Phe Arg Phe Ser Leu Leu Pro Pro Phe Tyr Leu Gln Trp Tyr Cys Leu
 610 615 620
 Ile Leu Tyr Ala Val Ala Phe Gly Met Leu Leu Phe Leu Leu Phe Lys
 625 630 635 640
 Trp Arg Met Arg Ser Leu Leu Lys Glu Lys Glu Arg Leu Glu Ala Leu
 645 650 655
 Val Gly Gln Arg Thr Lys Gln Leu Val His Gln Lys Asn Glu Ile Glu
 660 665 670
 Glu Lys Ser Leu Lys Leu Glu Lys Ala Leu Lys Glu Leu Gly Gln Ala
 675 680 685
 Gln Asp Glu Leu Val Arg Gln Glu Lys Met Ala Thr Val Gly Lys Leu
 690 695 700
 Thr Gln Gly Leu Ile Asp Arg Ile Leu Asn Pro Leu Asn Tyr Ile Asn
 705 710 715 720
 Asn Phe Ser His Leu Thr Ser Gly Leu Leu Lys Asp Leu Tyr Gln Asn
 725 730 735
 Leu Glu Ser Val Lys Glu Leu Leu Asp Glu Asp Thr Tyr Leu Asp Ser
 740 745 750
 Val Asp Val Ile Asn Met Met Arg Asp Asn Leu Glu Lys Ile Glu Glu
 755 760 765
 His Gly Ser Asn Thr Thr Arg Val Leu Lys Ala Met Glu Glu Ile Leu
 770 775 780
 Arg Asp Arg Asn Arg Gln Leu Glu Lys Thr Glu Leu Ile Gly Leu Cys
 785 790 795 800
 Arg Lys Asp Met Glu Leu Leu Ser Ser Tyr Tyr Gln Lys Glu Ile Thr
 805 810 815
 Ala Met His Ile Ala Val Arg Thr Ser Leu Pro Asp Asn Pro Leu Phe
 820 825 830
 Ile Asp Gly Asn Ala Glu Gln Leu Gly Lys Thr Ile Met Ser Leu Leu
 835 840 845
 Asn Asn Gly Met Tyr Ala Ile Ala Lys Lys Tyr Gly Lys Lys Ala Tyr
 850 855 860
 Pro Ala Glu Ile Gly Leu Ala Leu Glu Ser Lys Asp Gly Gln Ala Val

865 870 875 880
 Ile Arg Leu Tyr Asp Asn Gly Val Gly Ile Glu Gln Ser Ile Leu Asp
 885 890 895
 Lys Ile Phe Asp Pro Phe Phe Thr Thr Lys Thr Thr Gly Glu Ala Ala
 900 905 910
 Gly Ile Gly Leu Tyr Leu Ser Lys Glu Ile Ile Leu Asn His His Gly
 915 920 925
 Gln Ile Ala Val Arg Ser Glu Lys Asp Glu Leu Thr Glu Phe Thr Ile
 930 935 940
 Thr Leu Pro Leu Trp Glu Glu Lys Ser Val
 945 950

<210> 6805

<211> 343

<212> PRT

<213> B.fragilis

<400> 6805

Ser Met Ile Pro Lys Val Ser Val Ile Val Pro Ile Tyr Asn Val Glu
 1 5 10 15
 Lys Tyr Leu Asp Gln Cys Val Gln Ala Leu Leu Ala Gln Thr Leu Ser
 20 25 30
 Asp Ile Glu Ile Ile Leu Ile Asp Asp Glu Ser Pro Asp Asn Cys Pro
 35 40 45
 Lys Ile Cys Asp Asp Tyr Ala Ala Gln Tyr Pro Asn Ile Lys Val Ile
 50 55 60
 His Lys Lys Asn Ala Gly Leu Gly Met Ala Cys Asn Ser Gly Leu Asp
 65 70 75 80
 Val Ala Thr Gly Glu Tyr Val Ala Phe Cys Asp Ser Asp Asp Tyr Val
 85 90 95
 Asp Ser Asp Met Tyr Met Thr Met Tyr Asn Val Ala Gln Lys Tyr Thr
 100 105 110
 Cys Asp Ala Val Phe Thr Gly Leu Lys Arg Ile Thr Met Ala Gly Ile
 115 120 125
 Pro Thr Gly Thr Val Thr His Gln Lys Glu Phe Lys Leu Tyr Lys Asn
 130 135 140
 Lys Asn Glu Ile His Thr Leu Leu Lys Asp Leu Ile Ala Ser Asp Pro
 145 150 155 160
 Tyr Ala Arg Glu Glu Arg Ala Ile Gln Val Ser Ala Lys Val Val Leu
 165 170 175
 Tyr Arg Arg Asn Leu Ile Glu Lys Lys His Leu Arg Phe Val Ser Glu
 180 185 190
 Arg Ile Leu Pro Ser Glu Asp Leu Ile Phe Asn Val Asp Val Leu Ala
 195 200 205
 Asn Ser Asn Ile Val Cys Val Leu Pro Gln Thr Phe Tyr Asn Tyr Arg
 210 215 220
 Thr Asn Pro Ile Ser Ile Ser His Thr Ile Lys Lys Asp Lys Phe Ser
 225 230 235 240
 Leu Phe Lys Gln Leu Tyr Ile Glu Ile Thr Asp Arg Cys His Arg Leu
 245 250 255
 Gly Val Glu Asp Asn Val Gln Leu Arg Ile Gln Arg Met Phe Leu Gly
 260 265 270
 Tyr Thr Arg Asn Tyr Ile Cys Asn Ile Leu Asn Ser Ser Ile Thr Asn
 275 280 285
 Ile Glu Lys Lys Gln Ile Thr Ser Ser Ile Cys Lys Asp Gly Ile Trp
 290 295 300
 Lys Pro Ile Trp Lys Thr Tyr Pro Leu Ser Val Met Pro Leu Pro His
 305 310 315 320
 Arg Ile Phe Thr Phe Ala Met Arg His Asn Phe Tyr Ser Leu Leu Leu

325
Val Leu Ala Lys Ile Lys Lys
340

330

335

<210> 6806
<211> 76
<212> PRT
<213> B.fragilis

<400> 6806
Lys Lys Glu Pro Glu Ala Phe Ile Gln Ile Asn Tyr Ala Asp Ser Tyr
1 5 10 15
Leu Arg Phe Ser Leu Ile Cys Tyr Gly Pro Gly Asn Lys Gly Gln Gln
20 25 30
Asn Ile Ala Lys Gln Asn Ser Asn Arg Ser Ala Arg Ile Lys Thr Glu
35 40 45
Lys Arg Ser Ala Pro Leu Pro Leu Arg Gln Thr Arg Ser Leu Pro Arg
50 55 60
Tyr Cys Trp Pro Cys Asn Ile Ala Ile His Asp Phe
65 70 75

<210> 6807
<211> 143
<212> PRT
<213> B.fragilis

<400> 6807
Ala Met Thr Leu Leu Gln Phe Arg Pro Val Asp Gly Arg Leu Asp Glu
1 5 10 15
Ile Leu Ser Met Leu Met His Ser Arg Glu Val Ala Ser His Pro Ser
20 25 30
Leu Ser Tyr Ala Ile Arg Leu Val Ser Glu Glu Ile Ile Val Asn Ile
35 40 45
Leu Asn Tyr Ala Tyr Pro Gln Gln Ala Glu Gly Tyr Leu Thr Leu Cys
50 55 60
Leu Trp Asp Glu Asp Gly Glu Ile Thr Leu Glu Phe Ile Asp Gly Gly
65 70 75 80
Ile Pro Phe Asn Pro Leu Asp Lys Ala Asp Pro Asp Ile Ser Leu Pro
85 90 95
Leu Glu Gln Arg Glu Ile Gly Gly Leu Gly Ile Phe Leu Val Arg Glu
100 105 110
Met Met Asp Asp Val Ala Tyr Thr Tyr Val Asn Lys Glu Asn Arg Leu
115 120 125
Thr Ile Lys Lys Lys Tyr Leu Gln Pro Thr Asp Glu Pro Val Ser
130 135 140

<210> 6808
<211> 516
<212> PRT
<213> B.fragilis

<400> 6808
Tyr His Met Pro Ser Asp Ser Gln Asn Asn Lys Arg Ile Ala Gln Asn
1 5 10 15
Thr Leu Leu Leu Tyr Phe Arg Met Leu Phe Leu Met Leu Val Ser Leu
20 25 30
Tyr Thr Ser Arg Val Asn Leu Asn Ala Leu Gly Ile Glu Asp Phe Gly
35 40 45
Ile Tyr Asn Val Val Gly Gly Leu Val Ala Met Phe Ser Ile Ile Ser

50	55	60
Gly Ser Leu Val Ser Ser Ile Ser Arg Phe Ile Thr Phe Glu Leu Gly		
65	70	75
Thr Glu Asn Lys Glu Lys Leu Lys Lys Val Phe Ser Thr Ala Val Ser		80
	85	90
Ile Gln Phe Phe Leu Val Ile Ile Val Val Ile Leu Ala Glu Thr Ile		95
	100	105
Gly Leu Trp Phe Leu Asn Asn Lys Met Val Ile Pro Glu Glu Arg Ile		110
	115	120
Leu Ala Ala Asn Ile Ile Tyr Gln Phe Ser Ile Ile Ser Phe Ala Leu		125
	130	135
Ser Leu Met Ser Ile Pro Tyr Thr Gly Thr Ile Val Ala His Glu Lys		140
145	150	155
Met Ser Ala Phe Ala Tyr Ile Ser Ile Phe Asp Val Ile Gly Lys Leu		160
	165	170
Ala Val Ala Leu Thr Ile Ser Ile Ala Pro Ile Asp Lys Leu Ile Trp		175
	180	185
Phe Ala Gly Phe Ile Val Phe Asn Ser Thr Ile Ile Gln Ser Ile Tyr		190
	195	200
Ile Phe Tyr Cys Lys Arg His Phe Glu Glu Cys Thr Tyr His Phe Ile		205
210	215	220
Phe Asp Lys Ser Leu Leu Lys Asn Met Phe Gly Phe Ala Gly Trp Asn		225
225	230	235
Phe Ile Gly Ser Ile Ala Ala Ile Leu Arg Asp Gln Gly Gly Asn Ile		240
	245	250
Val Ile Asn Met Phe Cys Gly Pro Ala Val Asn Ala Ala Arg Gly Val		255
	260	265
Ala Met Gln Val Asn Asn Ala Val Ser Gly Phe Val Ser Asn Phe Gln		270
	275	280
Thr Ala Leu Asn Pro Gln Ile Thr Lys Ser Tyr Ala Ser Gly Asn Tyr		285
290	295	300
Asp Tyr Met Met Gln Leu Ile Phe Gln Gly Ala Arg Leu Ser Tyr Tyr		305
305	310	315
Ile Leu Leu Ile Leu Ala Leu Pro Ile Ile Ser Asn Thr His Phe Ile		320
	325	330
Leu Gln Leu Trp Leu Gly Gln Val Pro Lys His Thr Val Leu Phe Val		335
	340	345
Gln Leu Val Leu Phe Phe Thr Met Ser Glu Ser Leu Ala Asn Pro Leu		350
	355	360
Ile Asn Ala Met Leu Ala Thr Gly Lys Ile Lys Lys Phe Gln Ile Ile		365
370	375	380
Val Gly Gly Leu Asn Leu Val Asn Leu Pro Leu Ser Tyr Ile Cys Leu		385
385	390	395
Arg Leu Gly Cys Ile Pro Glu Ser Val Val Ile Ile Ala Ile Ile Ile		400
	405	410
Ser Met Ile Cys Glu Met Ala Arg Val Ile Met Leu Arg Asn Met Ile		415
	420	425
His Phe Pro Ala Arg Ser Phe Leu Lys Lys Val Tyr Phe Asn Val Ile		430
	435	440
Phe Val Thr Ile Thr Ala Ser Ile Leu Pro Leu Tyr Leu His Phe Ile		445
	450	455
Leu Glu Glu Asn Ile Tyr Thr Phe Thr Leu Ile Ser Val Val Ser Phe		460
465	470	475
Ser Cys Thr Leu Leu Ser Ile Leu Tyr Ile Gly Cys Ser Ser Glu Glu		480
	485	490
Arg Val Met Val Phe Ser Lys Val Lys Val Ile Val Asn Lys Val Ser		495
	500	505
Lys Arg Tyr Lys		510
515		

<210> 6809
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 6809

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Ser Gln Phe Thr His Thr Asn His Met Thr Ile Ala Val Asp Phe Asp
1          5          10          15
Gly Thr Ile Val Glu His Arg Tyr Pro Lys Ile Gly Glu Glu Ile Pro
          20          25          30
Phe Ala Thr Glu Thr Leu Lys Ile Leu Ala Gln Glu Arg His Lys Leu
          35          40          45
Ile Leu Trp Thr Val Arg Glu Gly Glu Leu Leu Glu Glu Ala Ile Glu
          50          55          60
Trp Cys Arg Gln Arg Gly Val Phe Phe Tyr Ser Val Asn Lys Asp Tyr
65          70          75          80
Pro Glu Glu Glu Lys Ser His Asn Gly Phe Ser Arg Lys Leu Lys Ala
          85          90          95
Asp Leu Phe Ile Asp Asp Arg Asn Leu Gly Gly Leu Pro Asp Trp Gly
          100          105          110
Thr Ile Tyr Gln Met Ile His Glu Gln Lys Pro Tyr Glu Pro Val Leu
          115          120          125
Cys Asp Arg Gln Lys Pro Thr Gly Asp Leu Ser Trp Ile Glu Lys Leu
          130          135          140
Leu Gly Lys Arg Asn Lys
145          150

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<210> 6810
 <211> 354
 <212> PRT
 <213> B.fragilis

<400> 6810

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Arg Lys Arg Leu Thr Met Asn Asn His Val Val Ile Met Ala Gly Gly
1          5          10          15
Ile Gly Ser Arg Phe Trp Pro Met Ser Thr Pro Glu Cys Pro Lys Gln
          20          25          30
Phe Ile Asp Ile Leu Gly Cys Gly Lys Thr Leu Ile Gln Leu Thr Val
          35          40          45
Glu Arg Phe Gly Asn Val Cys Pro Gln Glu Asn Met Trp Val Val Thr
          50          55          60
Ser Glu Lys Tyr Ile Asp Thr Ile Arg Glu Gln Leu Pro Gly Ile Pro
65          70          75          80
Glu Ser Asn Ile Leu Ala Glu Pro Cys Pro Arg Asn Thr Ala Pro Cys
          85          90          95
Ile Ala Tyr Ala Cys Trp Lys Ile Lys Lys Lys Tyr Pro Glu Ala Asn
          100          105          110
Ile Val Val Thr Pro Ser Asp Gln Val Val Ile Asp Thr Thr Glu Phe
          115          120          125
Arg Arg Val Ile Glu Lys Ala Leu Leu Phe Thr Asp Lys Ser Ser Ala
          130          135          140
Ile Ile Thr Leu Gly Ile Lys Pro Ala Arg Pro Glu Thr Gly Tyr Gly
145          150          155          160
Tyr Ile Ala Ala Gly Glu Pro Ile Thr Arg Asp Lys Glu Ile Phe His
          165          170          175
Val Glu Ala Phe Lys Glu Lys Pro Asp Lys Glu Thr Ala Glu Lys Tyr
          180          185          190
Leu Ala Ala Gly Asn Tyr Phe Trp Asn Ala Gly Ile Phe Val Trp Asn

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195	200	205
Val Arg Thr Ile Thr Ala	Val Met Arg Val Tyr Ala	Pro Gly Ile Ala
210	215	220
Gln Ile Phe Asp Arg Ile Tyr	Pro Asp Phe Tyr Thr	Glu Arg Glu Glu
225	230	235
Glu Ser Val Lys Lys Leu Phe	Pro Thr Ala Glu Ser	Ile Ser Ile Asp
245	250	255
Tyr Ala Val Met Glu Lys Ala	Glu Glu Ile Tyr Val	Leu Pro Ala Gln
260	265	270
Met Gly Trp Ser Asp Leu Gly	Thr Trp Gly Ala Leu	His Thr Leu Leu
275	280	285
Pro Lys Asp Lys Glu Gly Asn	Ala Thr Val Gly Pro	Asp Ile Arg Met
290	295	300
Tyr Glu Ser Gln Asn Cys Met	Val His Ala Ser Gln	Glu Lys Arg Val
305	310	315
Val Ile Gln Gly Leu Asn Asp	Tyr Ile Ile Ala Glu	Lys Asp Asn Ile
325	330	335
Leu Leu Ile Cys Gln Leu Ser	Glu Glu Gln Arg Ile	Lys Asp Phe Ser
340	345	350
Lys Glu		

<210> 6811

<211> 369

<212> PRT

<213> B.fragilis

<400> 6811

Tyr Asn Thr Thr Met Thr	Asn Ile Leu Gly Leu Lys	Gln Asn Arg Trp
1	5	10 15
Ile Val Gly Ala Val Leu	Leu Leu Thr Thr Cys	Asn Leu Gln Ala Gln
20	25	30
Glu Gln Pro Asn Ala Arg	Glu Lys Phe Glu Arg	Gly Asn Trp Phe Val
35	40	45
Ser Gly Ala Leu Asn Gly	Glu Trp Leu Thr Lys	Thr Ile Gly Asn Val
50	55	60
Tyr Ala Gly Gly Lys Ile	Ser Gly Gly Val Tyr	Leu Thr Pro Leu Ser
65	70	75
Gly Phe Arg Ala Thr Ala	Glu Ile Gly Lys Asn	Trp Ile Gly Asn Asp
85	90	95
Thr Glu Ala Thr Gln Leu	Ser Ala Asn Leu Asp	Tyr Met Leu Thr Leu
100	105	110
Ile Gly Asn Asn Gly Phe	Lys Arg Phe Asn Leu	Ala Ala Ile Leu Gly
115	120	125
Ala Gly Phe Asn Tyr Tyr	Asp Phe Gly Asp Asn	Asp Pro Lys Tyr Thr
130	135	140
Arg Val Asn Thr Ile Ser	Gly Asn Phe Ser Ile	Gln Ala Ser Tyr Asn
145	150	155
Val Asn Arg Lys Phe Ser	Ile Phe Ile Glu Pro	Gly Leu Lys Val Leu
165	170	175
Pro Lys Tyr Tyr Ser Lys	Glu Leu Asn Asn Lys	Ile Tyr Met Gln Ser
180	185	190
Asn Leu Thr Ile Gly Leu	Ala Tyr Thr Phe Arg	Asp Lys Tyr Arg Lys
195	200	205
Ser Val Asp Asn Ser Ile	His Pro Leu Tyr Leu	Pro Glu Ala Asp Leu
210	215	220
Leu Glu Ile Lys Glu Lys	Ile Gly Met Leu Cys	Glu Glu Val Met Gln
225	230	235
Met Lys Gln Glu Leu Lys	Glu Arg Arg Lys Ile	Thr Asp Gly Gln Asn

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<210> 6812
<211> 583
<212> PRT
<213> B.fragilis
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<400> 6812															
Arg 1	Arg	Glu	Thr	Thr 5	Tyr	Lys	Leu	Lys	Glu 10	Thr	Thr	Phe	Lys	Tyr 15	Met
Lys	Lys	Ser	Ile	Leu	Phe	Thr	Phe	Val	Leu	Cys	Leu	Leu	Ser	Gln	Trp
20 25 30															
Ser	Val	Ala	Gln	Asp	Pro	Lys	Trp	Val	Glu	Lys	Ala	Lys	Arg	Ser	Val
35 40 45															
Phe	Ser	Ile	Val	Thr	Tyr	Asp	Lys	Asp	Asp	Lys	Ile	Gln	Asn	Thr	Gly
50 55 60															
Asn	Gly	Phe	Phe	Val	Thr	Glu	Asp	Gly	Val	Ala	Leu	Ser	Asp	Tyr	Ser
65 70 75 80															
Leu	Phe	Lys	Gly	Ala	Gln	Arg	Ala	Val	Ile	Ile	Asn	Ser	Glu	Gly	Glu
85 90 95															
Lys	Met	Pro	Val	Glu	Cys	Ile	Leu	Gly	Ala	Asn	Asp	Met	Tyr	Asp	Ile
100 105 110															
Ile	Lys	Phe	Arg	Val	Gly	Ile	Thr	Val	Lys	Lys	Val	Pro	Ala	Leu	Gln
115 120 125															
Val	Ala	Ala	Leu	Ala	Pro	Ala	Val	Gly	Ala	Glu	Val	Tyr	Leu	Leu	Pro
130 135 140															
Tyr	Ser	Thr	Gln	Lys	Gly	Gly	Asn	Val	Thr	Arg	Gly	Lys	Val	Lys	Lys
145 150 155 160															
Val	Asp	Asn	Ile	Gly	Asp	Lys	Tyr	His	Tyr	Tyr	Thr	Leu	Asp	Met	
165 170 175															
Val	Leu	Lys	Asp	Lys	Met	Val	Ser	Cys	Pro	Val	Thr	Thr	Ala	Asp	Gly
180 185 190															
Lys	Val	Phe	Gly	Val	Ala	Gln	Lys	Ser	Ser	Gly	Gln	Asp	Thr	Ala	Ser
195 200 205															
Ile	Ser	Tyr	Ala	Ala	Gly	Ala	Ala	Phe	Ala	Met	Ser	Gln	Asn	Ile	Ser
210 215 220															
Ala	Leu	Ala	Leu	Ser	Asp	Pro	Ala	Leu	Asn	Ala	Ile	Gly	Ile	Lys	Lys
225 230 235 240															
Gly	Leu	Pro	Glu	Asp	Glu	Asp	Gln	Ala	Leu	Val	Tyr	Leu	Phe	Ile	Ala
245 250 255															
Ser	Thr	Gln	Ser	Thr	Pro	Glu	Ala	Tyr	Ala	Ile	Ala	Leu	Asp	Asp	Phe
260 265 270															
Ile	Lys	Thr	Phe	Pro	Asn	Ser	Ala	Asp	Gly	Tyr	Leu	Arg	Arg	Ala	Gly

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      275              280              285
Asn Tyr Val Phe Ala Asp Lys Asp Glu Asn His Met Asp Lys Ala Ala
 290              295              300
Ala Asp Leu Glu His Ala Leu Lys Val Ala Gln Lys Lys Asp Asp Thr
305              310              315              320
Tyr Tyr Asn Ile Ala Lys Leu Ile Tyr Asn Tyr Gln Leu Ser Lys Pro
      325              330              335
Glu Thr Val Tyr Lys Asp Trp Thr Tyr Asp Lys Ala Leu Glu Asn Val
      340              345              350
Arg Ser Ala Ile Ala Ile Gln Ser Leu Pro Val Tyr Gln Gln Leu Glu
      355              360              365
Gly Asp Ile Leu Phe Ala Lys Gln Asp Tyr Ala Gly Ala Phe Ala Ser
      370              375              380
Tyr Asp Lys Val Asn Gln Thr Glu Leu Ala Ser Pro Ala Ser Phe Phe
385              390              395              400
Ser Ala Ala Lys Ala Lys Glu Leu Ser Lys Ala Ala Pro Glu Glu Val
      405              410              415
Ile Ala Leu Leu Asp Ser Cys Ile Ala Arg Cys Gln Thr Pro Ile Thr
      420              425              430
Ser Asp Leu Ala Pro Tyr Leu Leu Glu Arg Ala Gln Met Tyr Met Asn
      435              440              445
Val Glu Lys Tyr Arg Leu Ala Leu Ala Asp Tyr Asp Ala Tyr Phe Asn
      450              455              460
Ala Val Lys Gly Ser Val Asn Asp Leu Phe Tyr Tyr Tyr Arg Glu Gln
465              470              475              480
Ala Ala Phe Lys Ala Lys Gln Phe Gln Arg Ala Leu Asp Asp Ile Ala
      485              490              495
Lys Ala Ile Glu Leu Asn Pro Glu Asp Leu Thr Tyr Arg Ala Glu Gln
      500              505              510
Ala Val Val Asn Leu Arg Val Gly Arg Tyr Glu Glu Ala Glu Lys Val
      515              520              525
Leu Lys Asp Ala Leu Ala Ile Asp Pro Lys Tyr Ala Glu Gly Tyr Arg
      530              535              540
Leu Leu Gly Ile Cys Gln Ile Gln Leu Lys Gln Glu Lys Ala Ala Cys
545              550              555              560
Ala Ser Phe Ala Lys Ala Lys Glu Leu Gly Asp Pro Asn Val Asp Glu
      565              570              575
Leu Ile Lys Lys His Cys Lys
      580

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<210> 6813

<211> 105

<212> PRT

<213> B.fragilis

<400> 6813

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Asn Lys Arg Thr Met Glu Lys Tyr Glu Ile His Phe Val Gly Ser Val
 1              5              10              15
Leu Asp Ser Asn Thr Ser Gly Asp Glu Gln Ala Lys Ile Val Ala Leu
      20              25              30
Ile Glu Gln Gly His Ser Val Ala Leu Asp Leu Ser Gly Cys Ser Tyr
      35              40              45
Val Ser Ser Ala Gly Leu Arg Val Met Leu Tyr Ala Phe Lys Leu Ala
      50              55              60
Lys Ala Lys Ser Arg Asp Val Cys Leu Val Gly Val Ser Gln Glu Val
65              70              75              80
Lys Asp Val Met His Met Thr Gly Phe Asp Lys Phe Phe Arg Phe Tyr
      85              90              95
Gln Thr Leu Asp Glu Leu Ser Gln Pro

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100

105

<210> 6814

<211> 647

<212> PRT

<213> B.fragilis

<400> 6814

Cys	Ile	Phe	Ala	Pro	Pro	Lys	Thr	Lys	Thr	Val	Lys	Gln	Met	Lys	Gln
1				5					10					15	
Asn	Phe	Phe	His	Arg	Tyr	Leu	Ser	Ala	Lys	Val	Leu	Pro	Ile	Trp	Thr
			20					25					30		
Ile	Leu	Leu	Ile	Asp	Ile	Phe	Ile	Ile	Val	Ala	Ser	Cys	Leu	Leu	Ala
		35					40					45			
Tyr	Ser	Leu	Arg	Tyr	Asp	Phe	Arg	Ser	Ile	Phe	Leu	Asp	Ser	Ser	Thr
	50					55					60				
Ile	Asp	Lys	Thr	Ile	Leu	Trp	Thr	Val	Val	Ala	Asn	Leu	Ile	Phe	Phe
65					70					75					80
Arg	Val	Phe	Arg	Thr	Tyr	Ser	Asn	Val	Leu	Arg	Phe	Ser	Ser	Phe	Val
				85					90					95	
Asp	Ile	Met	Arg	Ile	Phe	Val	Ser	Leu	Thr	Val	Ser	Tyr	Gly	Val	Leu
		100						105					110		
Met	Ile	Leu	Ser	Leu	Leu	Leu	Asp	Ala	Tyr	Leu	Gly	Ile	Arg	Ile	Gly
	115						120					125			
Ala	Ile	Ser	Val	Leu	Phe	Met	Ala	Tyr	Val	Ile	Asn	Phe	Ala	Met	Met
	130					135						140			
Ala	Cys	Ser	Arg	Ile	Val	Val	Lys	Met	Phe	Phe	Glu	Val	Leu	Asn	Phe
145					150					155					160
Asp	Gly	Ser	His	Thr	Thr	Asn	Val	Phe	Ile	Tyr	Gly	Ala	Lys	Glu	Ala
				165					170					175	
Gly	Val	Asn	Ile	Ala	Lys	Ser	Leu	Arg	Val	Asn	Leu	Arg	Asn	His	Tyr
		180						185					190		
Arg	Leu	Arg	Gly	Phe	Ile	Ala	Asp	Glu	Pro	Glu	Leu	Ile	Gly	Lys	Val
	195						200					205			
Met	Met	Gly	Ala	Lys	Val	Phe	Pro	Asn	Asp	Glu	Ala	Leu	Ile	Glu	Asn
	210					215						220			
Met	Asn	Asp	Arg	Asp	Val	His	Thr	Ile	Ile	Val	Ser	Pro	Ala	Lys	Met
225					230					235					240
Glu	Lys	Leu	Lys	Lys	Ser	Asp	Met	Ile	Asp	Thr	Leu	Leu	Ser	Asn	Asn
				245					250					255	
Val	Lys	Leu	Leu	Thr	Ala	Pro	Pro	Leu	Ser	Glu	Trp	Gly	Gly	Gln	Ala
		260						265					270		
Leu	Asn	Lys	Thr	Gln	Leu	Lys	Glu	Ile	Gln	Ile	Glu	Asp	Leu	Leu	Gln
	275						280					285			
Arg	Glu	Pro	Ile	Glu	Val	Asp	Ile	His	Lys	Ile	Ala	Ser	His	Leu	Glu
	290					295					300				
Gly	Lys	Arg	Val	Met	Ile	Thr	Gly	Ala	Ala	Gly	Ser	Ile	Gly	Ser	Glu
305					310					315					320
Ile	Met	Arg	Gln	Val	Ala	Ser	Phe	Asn	Pro	Tyr	Lys	Leu	Ile	Leu	Ile
				325					330					335	
Asp	Gln	Ala	Glu	Thr	Pro	Leu	His	Asp	Ile	Arg	Leu	Glu	Leu	Gln	Asp
		340						345					350		
Arg	Trp	Arg	Asp	Ile	Asp	Ala	Glu	Thr	Ile	Val	Ala	Asp	Ile	Ser	Asn
	355						360					365			
Ala	Thr	Arg	Met	Glu	Ala	Ile	Phe	Arg	Glu	Tyr	Lys	Pro	Gln	Tyr	Ile
	370					375					380				
Phe	His	Ala	Ala	Ala	Tyr	Lys	His	Val	Pro	Met	Met	Glu	Asp	Asn	Val
385					390					395					400
Ser	Glu	Ser	Ile	Gln	Ile	Asn	Val	Ser	Gly	Thr	Arg	Thr	Leu	Ala	Asp

405 410 415
 Leu Ala Val Lys Phe Gly Ser Glu Lys Phe Val Met Ile Ser Thr Asp
 420 425 430
 Lys Ala Val Asn Pro Thr Asn Val Met Gly Cys Ser Lys Arg Ile Cys
 435 440 445
 Glu Ile Tyr Val Gln Ser Leu Ala Lys Lys Leu Gln Lys Glu Gly Thr
 450 455 460
 Arg Ser Val Gln Phe Ile Thr Thr Arg Phe Gly Asn Val Leu Gly Ser
 465 470 475 480
 Asn Gly Ser Val Ile Pro Arg Phe Arg Asp Gln Ile Gln Arg Gly Gly
 485 490 495
 Pro Val Thr Val Thr His Pro Glu Ile Ile Arg Tyr Phe Met Thr Ile
 500 505 510
 Pro Glu Ala Cys Arg Leu Val Leu Glu Ala Gly Ser Met Gly Asn Gly
 515 520 525
 Gly Glu Ile Tyr Ile Phe Asp Met Gly Lys Pro Val Lys Ile Val Asp
 530 535 540
 Leu Ala Lys Arg Met Ile Ser Leu Ser Gly Arg Thr Asp Val Lys Ile
 545 550 555 560
 Glu Phe Thr Gly Leu Arg His Gly Glu Lys Leu Tyr Glu Glu Leu Leu
 565 570 575
 Asn Val Lys Glu Leu Thr Lys Pro Thr Tyr His Glu Lys Ile Met Ile
 580 585 590
 Ala Thr Val Arg Glu Tyr Asp Tyr Asp Glu Val Lys Glu Arg Ile Gln
 595 600 605
 Lys Leu Ile Asp Val Ser Tyr Thr Tyr Asp Gln Met Lys Ile Val Ala
 610 615 620
 Ala Met Lys Asp Ile Val Pro Glu Phe Val Ser Lys Asn Ser Cys Phe
 625 630 635 640
 Glu Ala Leu Asp Lys Lys Asp
 645

<210> 6815

<211> 383

<212> PRT

<213> B.fragilis

<400> 6815

Thr Leu His Ala Thr Ser Thr Ser Phe Phe Tyr Tyr Thr Asn Gln Ser
 1 5 10 15
 Val Thr Leu Val Phe Leu Gln Asp Ala Phe Asp Thr Leu Leu Gly Lys
 20 25 30
 Lys Gln Thr Leu His Asp Gly Pro Cys Ala Leu Asn Ile Pro Phe Asn
 35 40 45
 Leu Lys Ala Leu Ile Phe Met Ser Ser Pro Lys Ile Ser Ile Ile Ile
 50 55 60
 Pro Val Tyr Met Ala Glu Ser Tyr Leu His Arg Cys Val Asp Ser Ile
 65 70 75 80
 Ile Thr Gln Thr Phe Thr Asp Trp Glu Leu Leu Leu Val Asp Asp Gly
 85 90 95
 Ser Pro Asp His Ser Gly Glu Leu Cys Glu Lys Tyr Ala Ser Ala Tyr
 100 105 110
 Lys Ser Arg Ile Lys Ala Phe His Lys Pro Asn Gly Gly Val Ala Ser
 115 120 125
 Ala Arg Glu Phe Gly Met Gln Gln Ala Arg Gly Glu Tyr Ser Ile His
 130 135 140
 Val Asp Pro Asp Asp Trp Ile Asp Ser Asn Thr Leu Glu Glu Leu Tyr
 145 150 155 160
 Gln Gln Ala Val Lys Glu Gln Ala Asp Met Val Ile Cys Asp Phe Met

				165					170					175			
Met	Glu	Tyr	Pro	Asn	Arg	Gln	Ile	His	Asn	Cys	Gln	Lys	Pro	Gln	Leu		
			180					185					190				
Leu	Asp	Ser	Ser	Ser	Phe	Met	His	Gln	Leu	Leu	Gln	Gln	Glu	Arg	His		
		195					200					205					
Gly	Ser	Leu	Cys	Asn	Lys	Leu	Ile	Arg	Thr	Glu	Leu	Tyr	His	Lys	Tyr		
	210					215					220						
Gln	Leu	His	Phe	Pro	Glu	Lys	Met	Ile	Cys	Trp	Glu	Asp	Leu	Tyr	Ile		
225					230					235					240		
Cys	Cys	Ser	Ile	Leu	Leu	His	Gly	Cys	Lys	Leu	Ala	Tyr	Val	Pro	His		
			245					250						255			
Ala	Leu	Tyr	His	Tyr	Asp	Phe	Tyr	Thr	Asn	Asp	Asn	Ser	Met	Val	Arg		
		260						265					270				
His	Thr	Asp	Met	Arg	Gly	Leu	Gln	Ala	Gln	Ile	Asp	Phe	Cys	Arg	Leu		
	275						280				285						
Met	Gln	Ala	Lys	Ile	Ser	Pro	Glu	Tyr	Leu	Pro	Glu	Leu	Asn	Glu	Leu		
	290					295				300							
Lys	Gly	Ile	Thr	Leu	Ile	Thr	Ala	Phe	Arg	Asn	Gln	Leu	Leu	Asn	Glu		
305					310					315					320		
Gln	Ala	Ile	Arg	Ser	Leu	Phe	Pro	Glu	Ile	Asn	Asp	Trp	Tyr	Val	Thr		
			325						330					335			
Arg	Tyr	Gly	His	Asp	Tyr	Glu	Lys	Ser	Asn	Tyr	Tyr	Gly	Leu	Thr	Leu		
		340						345					350				
Val	Leu	Arg	Gly	Tyr	Asn	Phe	Lys	Thr	Ala	Arg	Arg	Arg	Met	Phe	Val		
	355						360				365						
Ala	Lys	Phe	Leu	Val	Gln	Ile	Lys	Asn	Lys	Ile	Thr	Arg	Met	Leu			
	370					375				380							

<210> 6816

<211> 549

<212> PRT

<213> B.fragilis

<400> 6816

Thr	Thr	Asn	Ala	Met	Lys	Leu	Arg	Thr	Ile	Val	Lys	Ile	Ala	Val	Ile		
1			5						10				15				
Ser	Ser	Val	Val	Leu	Leu	Cys	Thr	Gly	Phe	Ala	Met	Phe	Ser	Phe	Phe		
		20						25				30					
Arg	Leu	Ser	Ala	Ala	Glu	Gly	Arg	Lys	Asp	Phe	Asn	Leu	Tyr	Thr	Leu		
		35				40						45					
Val	Pro	Gly	Ser	Ala	Thr	Val	Val	Leu	Glu	Thr	Asp	Asp	Leu	Ala	Gly		
	50					55					60						
Met	Ile	Gln	Gly	Ile	Asn	Glu	Leu	Ser	Cys	Ser	Lys	Asp	Arg	His	Phe		
65					70				75					80			
Leu	Tyr	Val	Ser	Lys	Leu	Phe	Ser	Tyr	Leu	Lys	Leu	His	Leu	Tyr	Thr		
			85					90					95				
Leu	Leu	Glu	Asp	Thr	Pro	His	Gly	Leu	Ser	Lys	Gln	Met	Asn	Lys	Val		
		100						105					110				
Leu	Leu	Ser	Phe	His	Glu	Pro	Asp	Asn	Asp	Arg	Asn	Gln	Val	Leu	Tyr		
	115						120					125					
Cys	Ser	Leu	Gly	Asn	Gly	Asp	Tyr	Glu	Leu	Val	Glu	Lys	Phe	Ile	Arg		
	130					135					140						
Lys	Tyr	Cys	Ser	Ser	Ser	Phe	Pro	Ser	Lys	Leu	Phe	Asp	Tyr	Lys	Gly		
145					150					155					160		
Glu	Glu	Ile	Arg	Ile	Tyr	Pro	Met	Pro	Asp	Asp	Ser	Phe	Leu	Ala	Cys		
			165					170					175				
Tyr	Phe	Thr	Ser	Asp	Phe	Leu	Val	Val	Ser	Tyr	Gln	Lys	Lys	Leu	Ile		
		180						185					190				
Glu	Gln	Val	Ile	Asp	Ala	Arg	Leu	Ser	Lys	Lys	Ser	Leu	Leu	Thr	Asp		

195	200	205
Ala Ser Phe Ala Lys Val	His Glu Asp Lys Arg	Ala Arg Val Ala Ala
210	215	220
Thr Ile Tyr Ala Arg Met	Gln Pro Leu Ser Met	Gly Lys Ala Thr Asp
225	230	235
Gly Ile Arg Ser Cys Thr	Gln Leu Gly Gly Trp Thr	Glu Phe Asp Met
245	250	255
Lys Met Asn Gly Asp Ala	Ile Tyr Phe Ser Gly Val	Ser His Asp Thr
260	265	270
Asp Thr Cys Leu Thr Phe	Met Asn Val Leu Arg Gln	Gln Gln Pro Val
275	280	285
Glu Asp Phe Pro Gly Asp	Ile Leu Pro Ala Ser Thr	Phe Phe Phe Asn
290	295	300
Lys Arg Ser Val Thr Asp	Met Gln Ala Met Leu Asp	Phe Thr Ala Arg
305	310	315
Gln Glu Tyr Thr Thr Ser	Thr Tyr Ser Asp Tyr Ile	Arg Asp Arg Asp
325	330	335
Gly Glu Leu Leu Ala Tyr	Leu Lys Glu Asn Ala Gly	Gly Glu Ile Val
340	345	350
Thr Cys Leu Phe His Ser	Thr Asp Thr Leu Ser Asn	Pro Cys Ala Val
355	360	365
Met Ser Ile Pro Leu Arg	Asp Gly Gln Gln Ala Glu	Arg Val Leu Gln
370	375	380
Gly Met Leu Arg Thr Ala	Pro Lys Glu Val Asp Gly	Pro Pro Lys Pro
385	390	395
Arg Thr Thr Phe Cys Lys	Thr Pro Leu Arg Ala Tyr	Thr Leu Tyr Val
405	410	415
Leu Pro Arg Asn Thr Leu	Phe Thr Gln Leu Thr Gly	Ile Thr Glu Ser
420	425	430
Ala Leu Tyr Ile Tyr Ala	Cys Phe Tyr Glu Gly Arg	Leu Val Leu Ala
435	440	445
Pro Asp Val Glu Ser Leu	Thr Ala Tyr Leu Arg His	Leu Asp Lys Lys
450	455	460
Glu Ile Leu Asp Asp Thr	Pro Gly Tyr Glu Glu Ala	Val Val Asn Leu
465	470	475
Ser Pro Ser Tyr Asn Phe	Met Met Val Ala Asp	Leu Gly Glu Thr Phe
485	490	495
Ser Gln Pro Glu Asn Tyr	Val Arg Leu Ile Pro Ala	Phe Phe Arg
500	505	510
Asn Gln Glu Phe Phe Arg	His Phe Ile Leu Ser Ala	Gln Phe Thr Cys
515	520	525
Thr Asp Gly Ile Val Tyr	Pro Asn Val Val Leu Ile	Tyr Lys Gly Glu
530	535	540
Ser Asp Asp Ile Ser		
545		

<210> 6817

<211> 67

<212> PRT

<213> B.fragilis

<400> 6817

Ile Phe His Phe Lys Val	Glu Ile Gly Asp Leu Asp	Glu Ile Val Phe
1	5	10
Lys Glu Ile Phe Gly Leu	Asp Leu Glu Ser Gln Val	Val Glu Tyr Gly
20	25	30
His Lys Lys Cys Ser Ser	Asp His Ala Trp Pro Glu	Glu His Thr Gln
35	40	45
Thr Lys Gln Ile Lys Ala	Val Thr Ile Arg Ile Gly	Thr Pro Leu His

50

55

60

Pro Val Leu

65

<210> 6818

<211> 490

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (49)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6818

Lys	Lys	His	Tyr	Arg	Leu	Val	Ile	Ser	Met	Phe	Leu	Ser	Gly	Gly	Arg
1				5					10					15	
Thr	Leu	Ser	Trp	Arg	Val	Arg	Gly	Gln	Lys	Ser	Lys	Gly	His	Ser	Met
			20					25					30		
Leu	Ser	Glu	Glu	Gly	Glu	Ser	Glu	Glu	Asp	Met	Glu	Asp	Val	Leu	Phe
		35					40					45			
Xaa	Asn	Pro	Glu	Gln	Phe	Arg	Arg	Val	Ala	Pro	Tyr	Phe	Pro	Glu	Glu
	50					55					60				
Val	Phe	Glu	His	Leu	Pro	Asp	Leu	Leu	Ala	Gln	Gly	Val	Lys	Ala	Ala
65				70					75					80	
Gly	Asn	Tyr	Arg	Glu	Arg	Asp	Met	Leu	Leu	Met	Ala	Met	Ile	Thr	Asn
			85					90					95		
Ile	Ser	Ala	Cys	Leu	Pro	Glu	Val	Arg	Val	Leu	Tyr	Asp	Gln	Val	Tyr
			100					105					110		
Tyr	Ser	Pro	His	Leu	Tyr	Tyr	Met	Val	Ile	Ala	His	Ala	Gly	Gly	Gly
		115					120					125			
Lys	Gly	Val	Val	Ser	Leu	Ala	Gly	Leu	Leu	Pro	Gly	Glu	Ile	His	Arg
	130					135				140					
Tyr	Tyr	Glu	Lys	Gln	Asn	Glu	Glu	Met	Arg	Leu	Val	Tyr	Asp	Lys	Ala
145					150				155					160	
Phe	Phe	Glu	Trp	Glu	Leu	Glu	Leu	Lys	Lys	Ala	Gln	Ala	Glu	Lys	Arg
			165					170					175		
Ser	Pro	Asp	Phe	Ser	Leu	Arg	Pro	Lys	Glu	Pro	Val	Arg	Lys	Leu	Leu
		180						185					190		
Thr	Leu	Ser	Pro	Asn	Val	Ser	Lys	Ser	Met	Leu	Ile	Ser	Ala	Leu	Glu
		195					200					205			
Glu	Ser	Gly	Lys	Leu	Gly	Cys	Cys	Ile	Asn	Ala	Thr	Glu	Leu	Asp	Met
	210					215					220				
Val	Ser	Gly	Ala	Ile	Arg	Asn	Asp	Tyr	Gly	Lys	His	Asp	Asp	Val	Phe
225					230					235				240	
Arg	Ala	Ala	Phe	Gln	His	Glu	Val	Val	Ser	Ala	Asp	Phe	Lys	Val	Asn
			245						250				255		
Gly	Arg	Gln	Val	Val	Ala	His	Asn	Pro	His	Leu	Ala	Leu	Cys	Leu	Ala
		260					265					270			
Gly	Thr	Pro	Asn	Gln	Leu	Val	Arg	Phe	Ile	Pro	Ser	Leu	Glu	Asn	Gly
	275					280						285			
Leu	Tyr	Ser	Arg	Phe	Leu	Val	Tyr	Thr	Gly	Gln	Ser	Asp	Trp	Cys	Trp
	290					295					300				
Arg	Ser	Ala	Ala	Pro	Arg	Glu	Gly	Gly	Glu	Asp	His	Arg	Ala	Met	Phe
305					310				315					320	
Ala	Arg	Leu	Ser	Gly	Arg	Leu	Leu	Glu	Leu	His	Gln	Phe	Leu	Leu	Gln
			325					330					335		
Ser	Pro	Thr	Glu	Val	Thr	Phe	Thr	Ala	Ala	Gln	Trp	Glu	Glu	His	Thr
			340					345					350		

Ser Arg Phe Ser Ser His Leu Ser Glu Val Val Asn Glu Arg Asp Asp
 355 360 365
 Ser Pro Gly Ala Ile Val Leu Arg His Gly Leu Met Ala Ser Arg Ile
 370 375 380
 Ala Gly Val Leu Thr Ala Leu Arg Lys Gly Glu Cys Ala Trp Ala Met
 385 390 395 400
 Pro Gln Tyr Val Cys Ser Asp Glu Asp Phe His Thr Ala Met Leu Met
 405 410 415
 Thr Asp Val Leu Leu Glu His Ser Leu Leu Leu Ser Thr Ser Val Arg
 420 425 430
 Lys Ser Glu Ser Lys Ser Gly Pro Leu Lys Pro Tyr Phe Arg Leu Arg
 435 440 445
 Pro Val Leu Gln Thr Phe Ser Gly Thr Phe Thr Leu Tyr Asp Ala Met
 450 455 460
 Asp Arg Ala Val Glu Met Gly Ile Ser Val Pro Thr Phe Asn Cys Leu
 465 470 475 480
 Phe Met Arg Thr Ile Glu Leu Lys Asn Asn
 485 490

<210> 6819

<211> 459

<212> PRT

<213> B.fragilis

<400> 6819

Asn Met Asn Tyr Gln Glu Thr Leu Asp Tyr Leu Tyr Asn Ser Val Pro
 1 5 10 15
 Met Phe Gln Gln Val Gly Ser Ser Ala Tyr Lys Glu Gly Leu Glu Asn
 20 25 30
 Thr Tyr Ala Leu Asp Glu Tyr Leu Gly His Pro His Thr Ala Phe Gln
 35 40 45
 Ser Ile His Ile Ala Gly Thr Asn Gly Lys Gly Ser Cys Ser His Thr
 50 55 60
 Leu Ala Ala Ile Leu Gln Ser Ala Gly Tyr Arg Val Gly Leu Tyr Thr
 65 70 75 80
 Ser Pro His Leu Val Asp Phe Arg Glu Arg Ile Arg Ile Asn Gly Glu
 85 90 95
 Pro Ile Pro Gln Glu Tyr Val Ile Arg Phe Val Glu Asp His Arg Leu
 100 105 110
 Phe Phe Glu Pro Leu His Pro Ser Phe Phe Glu Leu Thr Thr Ala Met
 115 120 125
 Ala Phe Arg Tyr Phe Ala Asp Gln His Ile Asp Val Ala Val Ile Glu
 130 135 140
 Val Gly Leu Gly Gly Arg Leu Asp Cys Thr Asn Ile Ile Arg Pro Asp
 145 150 155 160
 Leu Ser Ile Ile Thr Asn Ile Ser Phe Asp His Met Gln Phe Leu Gly
 165 170 175
 Asn Thr Leu Ala Gln Ile Ala Thr Glu Lys Ala Gly Ile Ile Lys Arg
 180 185 190
 Gly Ile Pro Val Val Val Gly Glu Thr Thr Glu Glu Thr Lys Pro Val
 195 200 205
 Phe Tyr Arg Lys Ala Gln Glu Met Glu Ala Pro Val Thr Phe Ala Glu
 210 215 220
 Glu Glu Gln Arg Leu Lys Gly Ala Thr Lys Phe Lys Thr Arg Ala Asp
 225 230 235 240
 Arg Lys Pro Gly Gln Tyr Thr Asp His Gln Pro Asn Thr Ala Ala Glu
 245 250 255
 Lys Asp Thr Glu Tyr Ile Thr Gly Trp Ile Tyr Glu Asn Asp Val Tyr
 260 265 270

Pro Gly Leu Glu Gly Val Leu Gly Gly Ser Tyr Gln Leu Lys Asn Thr
 275 280 285
 Asn Thr Leu Leu Ser Ala Leu Pro Val Leu Lys Ser Leu Gly Tyr Lys
 290 295 300
 Ile Glu Asp His Asp Val Arg Asn Gly Phe Leu Gln Val Asp Lys Met
 305 310 315 320
 Thr Gly Leu Gln Gly Arg Trp Gln Lys Leu Ser Asp Ser Pro Thr Val
 325 330 335
 Ile Cys Asp Thr Gly His Asn Val Ala Gly Ile Ser Tyr Ile Val Glu
 340 345 350
 Gln Leu Lys Gln Met Lys Tyr Asn Cys Leu His Met Val Ile Gly Met
 355 360 365
 Val Asn Asp Lys Asp Val Ser Gly Ile Leu Ser Ile Leu Pro Glu Asn
 370 375 380
 Ala Val Tyr Tyr Phe Thr Lys Ala Ser Val Lys Arg Ala Leu Pro Glu
 385 390 395 400
 Ala Gln Leu Gln Gln Ile Gly Ala Ser Ala Gly Leu Gln Gly Lys Ala
 405 410 415
 Tyr Pro Asp Val Gln Ser Ala Val Lys Ala Ala Gln Glu Lys Ser Leu
 420 425 430
 Pro Glu Asp Leu Ile Phe Val Gly Ser Ser Phe Ile Val Ala Asp
 435 440 445
 Leu Leu Ser Cys Arg Asp Ala Leu Asp Leu Asp
 450 455

<210> 6820

<211> 88

<212> PRT

<213> B.fragilis

<400> 6820

Asn Thr Ser Leu Arg Asn Lys Met Ile Ile Ala Ser Gly Glu Gln Ala
 1 5 10 15
 Ser Gln Phe Val His His Ser Phe Leu Ile His Ser Ser Leu Leu Ile
 20 25 30
 Gln Ile Leu Leu Arg Trp Phe Lys Gly Tyr Asn Cys Pro Thr Lys Ile
 35 40 45
 Ser Gly Lys Pro Leu Leu Ile Phe Tyr His Ile Asp Ser Ala His Lys
 50 55 60
 Gln Asp His Tyr Asn Val Trp Gln Thr Leu Pro Ser Leu Trp Leu Ala
 65 70 75 80
 Lys Arg Lys Ala Phe Arg Ile Val
 85

<210> 6821

<211> 354

<212> PRT

<213> B.fragilis

<400> 6821

Thr Lys Tyr Gln Asn Ala Ile Asn Asn Met Ser Leu Val Asn Asn Phe
 1 5 10 15
 Thr Val Lys Lys Val Arg Ser Ser Asn Leu Glu Ser Leu Arg Leu Leu
 20 25 30
 Ser Met Phe Phe Val Leu Val Val His Ala Asp Phe Gln Ala Leu Gly
 35 40 45
 Met Pro Asp Arg Thr Glu Met Thr Ile Leu Pro Leu Phe Ser Val Phe
 50 55 60
 Arg Ile Ile Ile Glu Ala Phe Ala Ile Val Cys Val Asn Ser Phe Val

115	120	125
Thr Asp Arg Pro Met Gly Leu Lys Gly Ser Ala Gly Val Ile Asn		
130	135	140
Arg Ser Ala Trp Lys Ala Asp Ile Val Leu Tyr Pro Glu Val Ser Leu		
145	150	155
Glu Asn Ser Thr Phe Asp Lys Leu Tyr Ser Tyr Arg Val Asn Leu Ser		160
	165	170
Pro Ala Val Glu Met Asp Leu Trp Lys Gly Ala Lys Ala Thr Ala Gln		175
	180	185
Val Val Phe Pro Ile Ala Thr Asn Met Lys Gly Glu Tyr Lys Lys Ile		190
	195	200
Arg Pro Gly Val Met Thr Ile Ser Gln Glu Ile Arg Phe Arg Asn Asn		205
	210	215
Phe Leu Ala Arg Ile Val Ala Gly Asn Phe Thr Asp His Arg Ile Gly		220
225	230	235
Ala Gln Ala Glu Val Lys Tyr Arg Thr Gly Asn Gly Arg Val Glu Leu		240
	245	250
Gly Ala Gln Ile Gly Thr Thr Gly Tyr Ser Ala Ile Thr Asp Asp Gly		255
	260	265
Trp Tyr Ile Gly Thr Arg Gln Arg Ile Asn Ala Ala Val Lys Gly Ser		270
	275	280
Leu Tyr Val Pro Gln Phe Asn Thr Gln Leu Asp Leu Gln Ala Gly Arg		285
	290	295
Tyr Leu Tyr Gly Asp Tyr Gly Leu Arg Gly Asp Cys Thr Arg His Phe		300
305	310	315
Gly Glu Tyr Ala Val Gly Val Tyr Ala Met Tyr Val Glu Gly Glu Val		320
	325	330
Asn Gly Gly Phe His Phe Ala Ile Pro Leu Pro Gly Lys Lys Trp Asn		335
	340	345
Arg Asn His Ala Val Arg Met Lys Pro Ala Glu Phe Phe Ala Ala Glu		350
	355	360
Tyr Ser Met Val Ser Trp Gly Glu Tyr Ala Asp Arg Lys Met Gly Tyr		365
	370	375
Thr Tyr Gln Thr Arg Pro Ala Glu Asn Arg Ser Asn Gly Phe Phe Gln		380
385	390	395
Pro Glu Tyr Ile Arg His Phe Leu Ile Lys Ser Ile Glu Lys Glu Arg		400
	405	410
Asn Lys Lys Gln Phe		415
	420	

<210> 6823

<211> 250

<212> PRT

<213> B.fragilis

<400> 6823

Arg Thr Tyr Asn Tyr Pro Phe His Leu Arg Asn Met Leu Lys Leu Lys	
1	5
Thr Val Ser Leu Leu Lys His Arg Ser Asp Leu Ser Ile Leu Pro Glu	
	20
Gly Lys Leu Leu Ile Asn Thr Ile Asn Ala His Ser Tyr Asn Thr Ala	
	35
Leu Lys Asp Ala Gly Phe Ala Glu Ala Leu Leu Lys Gly Gly Ala Leu	
	50
Ile Pro Asp Gly Ala Ser Met Val Leu Ala Phe Arg Trp Leu Arg Lys	
65	70
Glu Ser Ile Glu Arg Thr Ala Gly Trp Asp Leu Phe Glu Tyr Glu Met	
	85
Glu Arg Leu Asn Arg Lys Gly Gly Ile Cys Tyr Phe Leu Gly Ser Ser	
	90
	95


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<210> 6824
<211> 270
<212> PRT
<213> B.fragilis
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Ile	Lys	Asn	Asn	Trp	Asn	Met	Lys	Thr	Ile	Lys	Leu	Gly	Tyr	Glu	Gly
1				5					10					15	
Glu	Glu	Ala	Leu	Leu	Leu	Cys	Arg	Glu	Leu	Lys	Arg	Asn	Gly	Tyr	Ser
			20					25					30		
Val	Lys	Glu	Ser	Arg	Thr	Phe	Thr	Gln	Glu	Met	Lys	Glu	Ala	Val	Ile
			35				40						45		
Asp	Phe	Gln	Gln	Lys	Asn	Lys	Leu	Asp	Ala	Asp	Gly	Ile	Val	Gly	Tyr
	50					55					60				
Arg	Thr	Trp	Glu	Val	Leu	Phe	Phe	Thr	Gly	His	Pro	Ile	Thr	Glu	Arg
65					70					75					80
Leu	Thr	Glu	Glu	Asp	Phe	Ile	Leu	Val	Ala	Arg	Leu	Leu	Asp	Val	Glu
				85					90					95	
Val	Ala	Ala	Leu	Lys	Ala	Val	Gln	Gln	Val	Glu	Thr	Gly	Gly	Arg	Gly
			100					105					110		
Gly	Phe	Phe	Ala	Pro	Gly	Lys	Pro	Ala	Ile	Leu	Phe	Glu	Gly	His	Ile
		115					120					125			
Phe	Trp	Asn	Gln	Leu	Lys	Lys	Arg	Asn	Ile	Asn	Pro	Glu	Ser	His	Val
	130					135					140				
Lys	Gly	Asn	Glu	Asn	Ile	Leu	Tyr	Pro	Lys	Trp	Glu	Lys	Gly	His	Tyr
145				150						155				160	
Lys	Gly	Gly	Met	Gly	Glu	Tyr	Asp	Arg	Leu	Glu	Gln	Ala	Arg	Lys	Ile
				165					170					175	
Asn	His	Glu	Ala	Ala	Asp	Ala	Ser	Ala	Ser	Trp	Gly	Met	Phe	Gln	Ile
			180					185					190		
Met	Gly	Phe	Asn	Tyr	Ala	Ala	Cys	Gly	Glu	Lys	Ser	Val	Asp	Ser	Phe
		195					200					205			
Val	Lys	Ala	Met	Cys	Met	Ser	Glu	Cys	Arg	Gln	Leu	Val	Leu	Ser	Ala
	210					215					220				
Arg	Phe	Ile	Lys	Gln	Ser	Gly	Met	Leu	Ser	Ala	Leu	Gln	Ala	Lys	Asp
225				230						235				240	
Trp	Ala	Glu	Phe	Ala	Lys	Arg	Tyr	Asn	Gly	Pro	Ala	Tyr	Glu	Gln	Asn
				245					250					255	
Gln	Tyr	Asp	Lys	Lys	Leu	Ala	Ala	Ala	Tyr	Gln	Lys	Phe	Ser		

260

265

270

<210> 6825
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6825
 Arg Arg Ile Leu Val Leu Val Glu Glu Gln Asn Pro Leu Ser Pro Arg
 1 5 10 15
 Gly Arg Gly Ile Ala Val Thr Asp Ala Pro Phe Tyr Gly Asn Gly Thr
 20 25 30
 Ser Glu Arg Leu Phe Asn Ile Gly Leu Cys Leu Pro Ser Gly Pro Thr
 35 40 45
 Leu Thr Asp Glu Asp Ile Arg Arg Val Val Asp Thr Ile Arg Lys Met
 50 55 60

<210> 6826
 <211> 251
 <212> PRT
 <213> B.fragilis

<400> 6826
 Asn Ala Asp Asn Tyr Met Ile Asp Lys Ser Glu Met Ile Phe Gly Val
 1 5 10 15
 Arg Ala Val Ile Glu Ala Ile Gln Ala Gly Lys Glu Ile Asp Lys Ile
 20 25 30
 Leu Val Lys Lys Asp Ile Gln Ser Asp Leu Ser Lys Glu Leu Phe Thr
 35 40 45
 Ala Leu Lys Gly Thr Leu Ile Pro Val Gln Arg Val Pro Val Glu Arg
 50 55 60
 Ile Asn Arg Ile Thr Arg Lys Asn His Gln Gly Val Val Ala Phe Ile
 65 70 75 80
 Ser Ser Val Thr Tyr Gln Lys Thr Glu Asp Leu Val Pro Phe Leu Phe
 85 90 95
 Glu Glu Gly Lys Asn Pro Phe Phe Val Met Leu Asp Gly Ile Thr Asp
 100 105 110
 Val Arg Asn Phe Gly Ala Ile Ala Arg Thr Cys Glu Cys Ala Gly Val
 115 120 125
 Asp Ala Val Ile Ile Pro Ala Lys Gly Ser Val Thr Val Asn Ala Asp
 130 135 140
 Ala Met Lys Thr Ser Ala Gly Ala Leu His Thr Leu Pro Val Cys Arg
 145 150 155 160
 Glu Gln Asn Leu Lys Thr Thr Leu Gln Tyr Leu Lys Asp Ser Gly Phe
 165 170 175
 Arg Ile Val Ala Ala Thr Glu Lys Gly Asp Tyr Asp Tyr Thr Lys Ala
 180 185 190
 Asp Tyr Thr Gly Pro Met Cys Ile Ile Met Gly Ala Glu Asp Thr Gly
 195 200 205
 Val Ser Tyr Asp Asn Leu Ala Leu Cys Asp Glu Trp Val Lys Ile Pro
 210 215 220
 Met Leu Gly Ser Ile Glu Ser Leu Asn Val Ser Val Ala Ala Gly Ile
 225 230 235 240
 Leu Ile Tyr Glu Gly Val Lys Gln Arg Thr Asn
 245 250

<210> 6827
 <211> 276
 <212> PRT

<213> B.fragilis

<400> 6827

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Asn Leu Lys Asn His Ile Met Ala Gln Leu Ser Ser Val Ile Gly Ser
1      5      10      15
Ile Leu Arg Asp Ile Val Ser Ala Gln His Glu Ala Asn Leu Tyr Ser
20      25      30
Leu Ser Leu Gly Asp Ser Tyr Gly Lys Asp Gly Lys Ala Lys Asp Phe
35      40      45
Gln Leu Pro Asn Val Met Val Ser Asp Met Glu Leu Asp Leu Lys Tyr
50      55      60
Gly Val Lys Ser Ala Ser Glu Ser Gln Gln Gln Phe Asn Ile Lys Tyr
65      70      75      80
Asp Lys Phe Arg Gln Phe Leu Lys Glu Leu Cys Glu Gln Val Ala Arg
85      90      95
Val Ala Ile Ser Ser Ala Val Thr Thr Val Met Thr Ser Asp Ile Glu
100     105     110
Arg Asn Glu Gly Glu Lys His Phe Phe Glu Arg Leu Lys Lys Glu Asn
115     120     125
Lys Leu His Gln Glu Phe Cys Thr Phe Leu Ser Arg Asn Met Arg Asn
130     135     140
Ser Phe Arg Asn Asn Leu Tyr Asp Ala Val Asp Ser Ser Asn Gly Ser
145     150     155     160
Val Asn Asn Asp Val Val Ile Ser Arg Leu Thr Asp Val Val Arg Lys
165     170     175
Lys Phe Leu Tyr Asp Thr Asp Leu Asp Asp Leu Phe Ala Gly Glu Asp
180     185     190
Gly Glu Lys Leu Arg Asp Thr Ala Glu Lys Asn Ile Ile Lys Ala Met
195     200     205
Glu Ala Ile Val Lys Lys Leu Ser Val Asp Ala Asn Phe Lys Ser Leu
210     215     220
His Ser Phe Pro Gln Leu Asp Val Ala Ile Thr Ala Asp Glu Leu Met
225     230     235     240
Asn Met Pro Glu Glu Ala Ile His Ser Phe Lys Ile Lys Phe Ser Pro
245     250     255
Arg Asn Tyr Ser Val Ser Gln Thr Asp Asp Asp Ser Leu Leu Glu Asp
260     265     270
Phe Val Met Arg
275

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<210> 6828

<211> 178

<212> PRT

<213> B.fragilis

<400> 6828

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Asn Gln Lys Asn Gly Leu Thr Thr Met Lys Leu Ser Lys Phe Leu Ser
1      5      10      15
Ser Arg Thr Gly Lys Arg Phe Tyr Asn Leu Cys Tyr Cys Trp Gly Ala
20      25      30
Cys Leu Val Ile Leu Gly Ala Val Phe Lys Ile Ala His Met Pro Tyr
35      40      45
Asp Asn Leu Phe Leu Met Ile Gly Leu Phe Thr Glu Val Phe Ile Phe
50      55      60
Phe Ile Ser Gly Phe Asp Glu Pro Ala Arg Glu Tyr Lys Trp Glu Arg
65      70      75      80
Val Phe Pro Leu Leu Asn Asp Lys Asn Ala Asn Ile Asn Pro His Thr
85      90      95
Gly Val Ser Asp Thr Leu Met Thr Glu Lys Tyr Ile Gln Gln Leu Lys

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          100              105              110
Arg Leu Glu Asn Asn Val Cys Lys Leu Asn Glu Thr Tyr Glu Ala Gln
      115              120              125
Ile Lys Gly Met Thr Glu His Ala Lys Ser Leu Asn Glu Met Asn Ser
      130              135              140
Glu Glu Leu Lys Lys Glu Thr Glu Lys Met Ala Ala Tyr Ile Glu Leu
145              150              155              160
Leu Asn Lys Gln Tyr Ser Gln Met Leu Asn Ala Met Asn Val Lys Thr
      165              170              175

Gly Lys

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<210> 6829
 <211> 63
 <212> PRT
 <213> B.fragilis

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<400> 6829
Leu Trp Lys Lys Asn Asp Lys Phe Lys Ser Pro Asn Glu Leu Leu Lys
1      5      10      15
Glu Leu Ser Gly Gln Val Phe Ala Leu Val Arg Glu Leu Pro Lys Pro
      20      25      30
Leu Ser Arg Glu Glu Met Arg Glu Leu Lys Arg Leu Cys Arg Phe Leu
      35      40      45
Asn Asn Thr Val Lys Asp Gln Glu Arg Lys Gln Glu Val Arg Lys
      50      55      60

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<210> 6830
 <211> 80
 <212> PRT
 <213> B.fragilis

```

<400> 6830
Lys Thr Arg Lys Arg Leu Arg Arg Phe Pro Arg Asn Ile Gln Val Phe
1      5      10      15
Ser Ser Lys Leu Leu Ser Leu Phe Gly Lys Gly Leu Arg Val Cys His
      20      25      30
Thr Ile Ile Gly Trp Ser Gly Val Phe Glu Gly Gln Lys Ser Lys Gly
      35      40      45
Lys Leu Tyr Glu Ser Val Ser Gly Lys Pro Arg Gly Val Met Ile Tyr
      50      55      60
Ile Ser Pro Ser Leu Ser Ile Ile Phe Lys Leu Tyr Ser Pro His Glu
65      70      75      80

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<210> 6831
 <211> 201
 <212> PRT
 <213> B.fragilis

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<400> 6831
Arg Val Gly Lys Asn Asn Lys Lys Tyr Ile Met Asp Glu Lys Leu Leu
1      5      10      15
Pro Tyr Phe Glu Asn Val Asn Asp Gly Gly Glu Gln Gly Lys Tyr Leu
      20      25      30
Lys Glu Phe Gly Asn Glu Glu Thr Gln Gly Gly Ile Cys Leu His Leu
      35      40      45
Ser Ile Thr Trp Leu Tyr Leu Trp His Asn Ser Thr Asn Lys Ala Pro
      50      55      60
Asn Thr Ile Trp Gln Glu Met Lys Thr Pro Thr Leu Ile Gln Gln Ile

```

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65          70          75          80
Ala Ser Asn Gln Arg Ser Tyr Gln Gln Tyr Tyr Pro Asn Ile Ala Asp
          85          90          95
Asn Val Ser Leu Ala Thr Arg Asn Ser Leu His Val Thr Gly Thr Asn
          100          105          110
Ala Gly Glu Ile Tyr Gln Ile Thr Thr Asn Ala Leu Val Lys Ser Asn
          115          120          125
Met Leu Leu Tyr Val Ile Asn Leu Glu Lys Asp His Lys Pro Val Gly
          130          135          140
Arg His Ala Ile Ala Ala Ile Ala Thr Arg Gly Arg Phe Tyr Leu Tyr
145          150          155          160
Asp Pro Asn Val Gly Val Met Ser Val Pro Met Pro Asn Met Lys Glu
          165          170          175
Leu Ile Glu Lys Ile Pro Tyr Ile Tyr Gly Lys His Ser Leu Asn Ile
          180          185          190
Ser Gln Thr Ser Val Tyr Asn Ile Ser
          195          200

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<210> 6832
 <211> 114
 <212> PRT
 <213> B.fragilis

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<400> 6832
Lys Ser Met Asn Pro Ile Leu Asn Lys Met Gly Ala Asn Ala Asn Glu
1          5          10          15
Gln Lys Lys Leu Leu Met Glu Cys Val Ser Met Leu Glu Lys Tyr Val
          20          25          30
Asn Arg Phe Pro Ala Glu Lys Gly Cys Ala Ser Phe Ser Gly Glu Asp
          35          40          45
Met Lys Leu Trp Lys Glu Val Tyr Phe Pro Lys Leu Val Gln Thr Asp
          50          55          60
Ile Leu Leu Asp Gly Lys Phe Phe Cys Gly Thr Ser Ser Gly Asn Ser
65          70          75          80
Gly Ile Gly Thr Asp Gly Tyr Phe Thr Gly Tyr Glu Phe Phe Gln Phe
          85          90          95
Ile Tyr Arg Ala Tyr Lys Ala Leu Tyr Glu Leu Glu Lys Ala Ser Gln
          100          105          110
Met Arg

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<210> 6833
 <211> 323
 <212> PRT
 <213> B.fragilis

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<400> 6833
Tyr Ser Met Lys Lys Arg Glu Phe Lys Ile Ser Phe Phe Leu His Val
1          5          10          15
Trp Glu Arg Lys Ala Glu Glu Ile Ser Leu Glu Glu Phe His Asn Asp
          20          25          30
Leu Arg Gly Ala Arg Trp Lys Val Leu Ala Glu Ser Tyr Arg Arg Trp
          35          40          45
Met Arg Thr Gly Met Thr Glu Glu Gly Lys Arg Leu Lys Gly Ala Leu
          50          55          60
Asn Ala Val Val Val Ala Gly Lys Cys Arg Gly Gly His Ala Ala Asn
65          70          75          80
Gln Val Thr Glu Leu Asn Gly Leu Ala Leu Phe Asp Phe Asp His Cys
          85          90          95

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Leu Glu Met Leu Ala Gly Met Lys Glu Lys Ala Gly Ala Leu Pro Tyr
 100 105 110
 Val Val Gly Ala Phe Val Ser Ile Ser Gly Glu Gly Leu Lys Leu Ile
 115 120 125
 Val Arg Ile Asp Ala Glu Asn Ala Gly Gln Tyr Ala Val Ala Tyr Pro
 130 135 140
 Val Val Ala Arg Glu Leu Glu Arg Val Leu Gly His Pro Cys Asp Met
 145 150 155 160
 Ser Cys Arg Asp Leu Gly Arg Ala Cys Tyr Ala Ser Tyr Asp Pro Glu
 165 170 175
 Ala Tyr Tyr Asn Pro Gly Ala Gly Val Phe Pro Trp Arg Glu Gln Val
 180 185 190
 Asp Gly Leu Leu Gln Ala Glu Gly Glu Cys Ser Ala Gln Ser Val Gly
 195 200 205
 Lys Ala Cys Pro Ala Gly Val Ala Ser Glu Ala Gly Asp Gly Phe Met
 210 215 220
 Gln Val Phe Leu Asn Asp Phe Asp Ala Arg Asn Pro Phe Val Ala Gly
 225 230 235 240
 Gly Arg His Ala Phe Val Leu Lys Leu Gly Arg Val Ala Arg Tyr Lys
 245 250 255
 Gly Phe Ser Pro Glu Glu Met Arg Leu Leu Gln Lys Ala Val Val Glu
 260 265 270
 Lys Tyr Ala Gln Ala Asp Phe Gly Ser Gly Glu Ile Glu Lys Thr Leu
 275 280 285
 Ser Ser Gly Tyr Gln Tyr Val Ser Val Arg Arg Ala Asp Ala Val Met
 290 295 300
 Ala Ser Gln Gly Pro Lys Val Gln Gly Pro Leu Tyr Ala Leu Arg Gly
 305 310 315 320
 Gly Gly Glu

<210> 6834
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 6834
 Ile Lys Met Lys Arg Ile Thr Asp Arg Thr Asn Phe Ser Val Ile Asn
 1 5 10 15
 Thr Val Val Asn Tyr Ser Glu Ala Pro Tyr Ala Val Cys Pro Gln Cys
 20 25 30
 Asn Ile Arg Thr Ala Cys Arg Arg Phe Pro Ser Ser Ile His Ser Val
 35 40 45
 Arg His Leu Tyr Pro Asp Arg Ser Thr Thr Gln Lys His Lys Tyr Asp
 50 55 60
 Lys Asp Lys Ile Gln Lys Lys Ala Val Met Ile Pro Ile Phe Thr His
 65 70 75 80
 Ile

<210> 6835
 <211> 449
 <212> PRT
 <213> B.fragilis

<400> 6835
 Lys Val Ser Lys Lys Arg Glu Thr Lys Asn Ser Phe Asn Ile Phe Leu
 1 5 10 15
 Met Thr Lys Met Ile Met Lys Lys Ser Asp Leu Phe Lys Ile Gly Val

		20					25				30				
Leu	Leu	Met	Ala	Thr	Thr	Leu	Gly	Thr	Thr	Gly	Cys	Ser	Phe	Gly	Glu
		35					40					45			
Asp	Glu	Lys	Lys	Pro	Glu	Ile	Val	Val	Asp	Pro	Ala	Glu	Lys	Thr	Ile
	50					55					60				
Glu	Tyr	Tyr	Ile	Ala	Gly	Lys	Val	Thr	Glu	Gly	Thr	Thr	Ala	Leu	Ser
65					70					75					80
Gly	Val	Glu	Val	Lys	Ala	Gly	Glu	Val	Thr	Ala	Thr	Thr	Asp	Ala	Glu
				85					90					95	
Gly	Ala	Tyr	Lys	Leu	Thr	Val	Asp	Ser	Lys	Lys	Val	Tyr	Thr	Val	Thr
			100					105					110		
Phe	Ser	Lys	Glu	Gly	Tyr	Met	Ser	Ile	Asp	Asn	Ala	Thr	Ala	Thr	Ile
		115					120					125			
Ala	Asp	Asn	Ala	Ala	Asn	Arg	Ser	Met	Val	Ser	Leu	Ser	Val	Lys	Leu
	130					135					140				
Ser	Lys	Lys	Ala	Pro	Glu	Lys	Glu	Val	Lys	Ala	Asp	Ala	Glu	Glu	Glu
145					150					155					160
Val	Val	Val	Thr	Asp	Lys	Gly	Asp	Ser	Asn	Ile	Ser	Gln	Ala	Glu	Ala
			165					170						175	
Ala	Val	Ile	Ile	Pro	Pro	Lys	Ala	Ile	Glu	Thr	Thr	Thr	Thr	Val	Ser
		180						185						190	
Val	Thr	Pro	Tyr	Glu	Glu	Pro	Ala	Ala	Val	Thr	Thr	Thr	Val	Thr	Pro
	195					200						205			
Gly	Asn	Asn	Val	Glu	Thr	Pro	Val	Ala	Ile	Ala	Asn	Ile	Glu	Val	Glu
	210					215					220				
Thr	Ala	Gln	Glu	Val	Thr	Leu	Ala	Lys	Pro	Val	Thr	Leu	Ala	Ile	Ile
225					230					235					240
Asn	Lys	Ala	Ser	Glu	His	Thr	Thr	Phe	Glu	Asn	Val	Glu	Val	Tyr	Asn
			245					250						255	
Gln	Lys	Thr	Thr	Thr	Arg	Ala	Gly	Glu	Asn	Trp	Asn	Lys	Val	Ala	Asp
		260						265					270		
Ala	Ile	Tyr	Asp	Ser	Glu	Thr	Asn	Ser	Tyr	Lys	Phe	Thr	Leu	Pro	Ala
	275						280					285			
Gly	Ala	Ser	Leu	Ser	Gly	Lys	Tyr	Ser	Met	Arg	Val	Lys	Ser	Ser	Lys
	290					295				300					
Thr	Thr	Gly	Lys	Glu	Arg	Ile	Gly	Glu	Thr	Asn	Lys	Glu	Glu	Lys	Lys
305					310					315					320
Ser	Asn	Glu	Gly	Asn	Met	Thr	Ala	Ile	Pro	Glu	Tyr	Lys	Ile	Asn	Phe
			325						330					335	
Glu	Ala	Thr	Ala	Gly	Trp	Glu	Tyr	Thr	Val	Ser	Pro	Glu	Lys	Ala	Leu
		340						345					350		
Met	Asn	Ala	Gly	Val	Asp	Ala	Ala	Asp	Ala	Gln	Gly	Met	Gly	Thr	Thr
	355					360						365			
Ile	Asn	Ser	Ala	Ile	Glu	Ala	Gln	Glu	Gly	Thr	Thr	Gly	Thr	Tyr	Lys
	370					375						380			
Val	Ala	His	Glu	Leu	Ile	Ala	Gly	Ile	Ser	Gly	Asn	His	Ile	Leu	Tyr
385					390					395					400
Tyr	Leu	Asn	Gln	Ala	Lys	Tyr	Cys	Glu	Lys	Thr	Tyr	Thr	Phe	Lys	Ile
			405						410					415	
Ser	Gly	Gly	Arg	Thr	Val	Thr	Ile	Thr	Leu	Lys	Phe	Tyr	Thr	Gly	Met
		420						425					430		
Gln	Ile	Thr	Tyr	Thr	Asn	Val	Glu	Ala	Ser	Gln	His	Ser	Gly	Gly	Lys
		435					440					445			

Ile

<210> 6836

<211> 403

<212> PRT

<210> 6837
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 6837

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Ser Asp Ala Glu Cys His Glu Cys Lys Asn Arg Glu Ile Arg Arg Arg
1          5          10          15
Asp Met Ala Lys Tyr Thr Leu Pro Pro Arg Gln Lys Met Ile Asn Leu
          20          25          30
Leu Tyr Val Val Leu Ile Ala Met Leu Ala Ile Asn Ile Ser Ser Asp
          35          40          45
Val Leu Glu Gly Tyr Gly Gln Met Asn Asn Asp Tyr Leu Pro Gln Ile
          50          55          60
Lys Lys Leu Glu Glu Tyr Asn Arg Thr Leu Leu Glu Arg Ile Asn Ser
65          70          75          80
Arg Asn Asp Lys Ala Ala Leu Ser Ala Gln Asn Ile Asp Ala Ala Ala
          85          90          95
Gly Lys Leu Met Asp Thr Leu Glu Glu Leu Lys Glu Asp Ile Ala Arg
          100          105          110
Lys Ala Asp Lys Glu Lys Tyr Glu Ala Gly Lys Leu Lys Ala Lys Asp
          115          120          125
Asp Leu Asn Ala Val Pro Glu Val Phe Leu Ser Val Thr Gly Gly Lys
          130          135          140
Gly Lys Ala Leu Arg Leu Ser Leu Asp Thr Phe Lys Glu Asp Ala Leu
145          150          155          160
Ser Leu Ile Lys Asn Asp Ala His Arg Gln Leu Val Gly Thr Tyr Leu
          165          170          175
Asn Thr Glu Ser Pro Gly Thr Gly Ile Ser Trp Glu Lys Glu Thr Phe
          180          185          190
Ser Tyr Leu Pro Ala Ile Gly Gly Val Thr Phe Ile Asn Lys Met Gln
          195          200          205
Glu Glu Val Leu Leu Cys Val Asn Glu Val Tyr Arg Ser Leu Leu Tyr
          210          215          220
Glu Glu Ala Glu Asp Gly Lys Gly Gly Ala Phe Val Phe Ile Asn Glu
225          230          235          240
Asp Gln Met Ile Val Asn Lys Asp Gly Thr Val Asp Leu Pro Val Val
          245          250          255
Gln Ile Thr Pro Ala Leu Thr Ser Ile Leu Tyr Thr Asp Tyr Glu Asn
          260          265          270
Pro Leu Asn Ile Leu Thr Ala Gly Ile Pro Phe Asn Glu Val Thr Phe
          275          280          285
Arg Met Thr Asn Gly Lys Ile Leu Lys Arg Gly Asn His Cys Ile Ala
          290          295          300
Val Pro Asp Glu Lys Ala Gln Thr Ala Thr Val Thr Ala Thr Gln Ile
305          310          315          320
Lys Asn Gly Val Ala Arg Gln Leu Ala Glu Tyr Arg Tyr Thr Val Lys
          325          330          335
Ala Leu Pro Asp Pro Thr Pro Tyr Ile Leu Cys Thr Asp Glu Asn Gly
          340          345          350
Arg Thr Val Gln Tyr Arg Gly Asn Val Pro Ile Asn Lys Arg Leu Val
          355          360          365
Ser Asn Met Thr Gln Leu Gly Ala Ser Ile Ser Asp Gly Pro Lys Ala
          370          375          380
Asn Tyr Glu Ile Ser Ser Phe Glu Met Val Leu Ile Lys Gly Ser Ser
385          390          395          400
Lys Ala Val Thr Ser Ile Pro Asn Thr Gly Asn Lys Phe Ser Ala Arg

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			405					410					415
Gln	Met	Glu	Leu	Ile	Arg	Gln	Leu	Glu	Lys	Gly	Asp	Lys	Phe Tyr Ile
			420					425					430
Thr	Ser	Ile	Val	Val	Thr	Gly	Pro	Gly	Asn	Lys	Lys	Lys	Gln Ile Ala
			435				440						445
Ser	Ile	Asn	Val	Val	Leu	Ile							
			450			455							

<210> 6838

<211> 418

<212> PRT

<213> B.fragilis

<400> 6838

Cys	Ile	Asn	Glu	Asp	Arg	Met	Met	Asn	Gly	Ile	Phe	Glu	Lys	Leu	Tyr
1				5					10					15	
Asp	Met	Thr	Ala	Phe	Ser	Asn	Ile	Val	Ala	Glu	Pro	Gln	Phe	Leu	Val
			20					25					30		
Met	Tyr	Val	Ile	Ala	Phe	Val	Leu	Leu	Tyr	Leu	Gly	Ile	Lys	Lys	Gln
		35					40					45			
Tyr	Glu	Pro	Leu	Leu	Leu	Val	Pro	Ile	Ala	Phe	Gly	Val	Leu	Leu	Ala
	50					55				60					
Asn	Phe	Pro	Gly	Gly	Gly	Met	Gly	Val	Ile	Gln	Ala	Asp	Glu	Asn	Gly
65					70					75					80
Met	Ile	Leu	Val	Asn	Gly	Val	Met	Lys	Asn	Ile	Trp	Glu	Met	Pro	Leu
				85					90					95	
His	Asp	Ile	Ala	His	Glu	Leu	Gly	Leu	Met	Asn	Phe	Val	Tyr	Tyr	Met
			100					105					110		
Leu	Ile	Lys	Thr	Gly	Phe	Leu	Pro	Pro	Ile	Ile	Phe	Met	Gly	Val	Gly
		115					120					125			
Ala	Leu	Thr	Asp	Phe	Gly	Pro	Met	Leu	Arg	Asn	Leu	Arg	Leu	Ser	Ile
	130					135					140				
Phe	Gly	Ala	Ala	Ala	Gln	Leu	Gly	Ile	Phe	Thr	Val	Leu	Leu	Val	Ala
145					150				155					160	
Ile	Leu	Met	Gly	Phe	Thr	Pro	Ser	Glu	Ala	Ala	Ser	Leu	Gly	Ile	Ile
			165					170						175	
Gly	Gly	Ala	Asp	Gly	Pro	Thr	Ala	Ile	Phe	Thr	Thr	Ile	Lys	Leu	Ala
		180					185						190		
Pro	His	Leu	Gly	Pro	Ile	Ala	Ile	Ala	Ala	Tyr	Ser	Tyr	Met	Ala	
	195					200					205				
Leu	Val	Pro	Val	Ile	Ile	Pro	Leu	Val	Val	Arg	Leu	Leu	Cys	Thr	Lys
	210					215				220					
Lys	Glu	Leu	Ser	Ile	Asn	Met	Lys	Glu	Gln	Glu	Lys	Lys	Tyr	Pro	Ser
225					230				235					240	
Lys	Thr	Glu	Ile	Lys	Asn	Leu	Arg	Val	Leu	Lys	Ile	Ile	Phe	Pro	Ile
			245					250					255		
Val	Val	Thr	Thr	Val	Val	Ala	Leu	Phe	Val	Pro	Ser	Ala	Val	Pro	Leu
		260					265					270			
Ile	Gly	Met	Leu	Met	Phe	Gly	Asn	Leu	Val	Lys	Glu	Ile	Gly	Ala	Asn
	275					280					285				
Thr	Phe	Arg	Leu	Phe	Asp	Ala	Ala	Ser	Asn	Ser	Ile	Met	Asn	Ala	Ala
	290				295					300					
Thr	Ile	Phe	Leu	Gly	Leu	Ser	Val	Gly	Ala	Thr	Met	Thr	Ser	Glu	Ala
305					310					315				320	
Phe	Leu	Asn	Trp	Thr	Thr	Ile	Gly	Ile	Val	Val	Gly	Gly	Phe	Leu	Ala
			325					330					335		
Phe	Ala	Leu	Ser	Ile	Ala	Gly	Gly	Ile	Phe	Phe	Val	Lys	Leu	Val	Asn
		340					345				350				
Leu	Phe	Thr	Lys	Lys	Lys	Ile	Asn	Pro	Leu	Ile	Gly	Ala	Thr	Gly	Leu

355	360	365
Ser Ala Val Pro Met Ala	Ser Arg Val Ala Asn	Asp Ile Ala Leu Lys
370	375	380
Tyr Asp Pro Lys Asn His	Val Leu Gln Tyr Cys	Met Ala Ser Asn Ile
385	390	395
Ser Gly Val Ile Gly	Ser Ala Val Ala	Ala Gly Val Leu Ile Ser Phe
405	410	415
Leu Ser		

<210> 6839

<211> 398

<212> PRT

<213> B.fragilis

<400> 6839

Glu Val Cys Glu Thr Asn Lys Arg Ile Ile Met Asn Leu Asp Leu Asp	1	5	10	15
Phe Ile Leu Leu Asn Leu Leu Leu Leu Tyr Thr Phe Trp Lys Ala Gly	20	25	30	
Arg Asn Ile Ser Gln Ser Met Asp Tyr Trp His Asn Ala Gly Leu Cys	35	40	45	
Val Ile Leu Phe Ser Ile Val Gln Gly Cys Arg Phe Ala Arg Gly Asn	50	55	60	
Asp Tyr Phe Ala Tyr Ser Arg Ile Phe Arg Glu Gly Ser Leu His Val	65	70	75	80
Glu Asn Pro Phe Phe Ser Val Ile Asn Glu Leu Leu Arg Ile Val Gly	85	90	95	
Ile Asn Glu Tyr Ser Cys Phe Met Val Tyr Ala Phe Thr Phe Ala Leu	100	105	110	
Cys Ala Met Ile Phe Met Lys Asp Tyr Arg Thr Tyr Ala Arg Tyr Met	115	120	125	
Phe Pro Leu Phe Leu Ile Gly Phe Met Asn Phe Glu Glu Ser Met Ile	130	135	140	
Arg Gln Ala Phe Ser Tyr Ser Phe Phe Phe Leu Tyr Leu Lys Tyr Leu	145	150	155	160
Phe Lys Leu Lys Phe Asn Lys Pro Lys Asp Ile Leu His Asn His Lys	165	170	175	
Lys Leu Ile Tyr Cys Ile Ile Phe Ala Ile Leu Thr Leu Ala Ile His	180	185	190	
Thr Gly Asn Ile Ile Ser Leu Phe Val Ile Thr Thr Leu Tyr Ile Phe	195	200	205	
Trp Arg Lys Pro Phe Gln Pro Gln Phe Ala Ile Pro Ile Tyr Val Ala	210	215	220	
Cys Val Tyr Ile Leu Pro His Ile Phe Asn Phe Asn Trp Leu Glu Pro	225	230	235	240
Ile Leu Ser Phe Ala Ala Asp Thr Asn Glu Arg Ala Ala Glu Tyr Val	245	250	255	
Lys Asn Ala Asp Tyr Trp Phe Ser Glu Lys Gly Glu Asn Asp Gln Tyr	260	265	270	
Asp Lys Asn Phe Ile Val Glu Ile Ile Gln Val Ile Gly Ser Ser Ala	275	280	285	
Leu Met Tyr Phe Gly Tyr Arg Leu Ile Ile Glu Lys Leu Pro Lys His	290	295	300	
Tyr Ala Leu Ile Thr Met Leu Asn Thr Phe Ile Ile Gly Leu Cys Ile	305	310	315	320
Glu Ser Ile Phe Val Lys Leu Glu Ile Leu His Arg Ile Gly Gln Thr	325	330	335	
Leu Asp Ile Val Gly Tyr Phe Ala Leu Ala Ile Val Val Ser Tyr Lys				

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          340          345          350
Thr Ile Lys Leu Lys Pro Ile Gln Lys Val Ala Tyr Val Cys Leu Leu
          355          360          365
Trp Phe Val Tyr Tyr Tyr Val Lys Tyr Leu Phe Phe Ser Gly Arg Thr
          370          375          380
Met Phe Ile Trp Asp Thr His Tyr Pro Phe Phe Lys Phe Ile
385          390          395

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<210> 6840

<211> 393

<212> PRT

<213> B.fragilis

<400> 6840

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Ile Thr Ile Asp Met Ala Val Lys Ile Leu Ser Val Asp Asp Glu Leu
1          5          10          15
Asp Leu Glu Val Leu Leu Thr Gln Tyr Phe Arg Arg Gln Ile Arg Lys
          20          25          30
Gly Glu Tyr Glu Phe Ala Phe Ala His Asn Gly Leu Glu Ala Leu Gln
          35          40          45
Lys Leu Leu Glu Thr Pro Asp Phe Asp Ile Ile Leu Ser Asp Ile Asn
          50          55          60
Met Pro Glu Met Asp Gly Leu Thr Leu Leu Ala Lys Val Asn Glu Leu
65          70          75          80
Lys Asn Pro Ala Met Lys Cys Ile Met Val Ser Ala Tyr Gly Asp Met
          85          90          95
Asp Asn Ile Arg Ser Ala Met Asn Lys Gly Ala Phe Asp Phe Ala Thr
          100          105          110
Lys Pro Ile Asp Leu Asp Asp Leu Ser Arg Thr Ile Glu Lys Ala Ile
          115          120          125
Glu Gln Val Arg Tyr Ile Arg Glu Ser Gln Gln Glu His Asn Gln Leu
          130          135          140
Glu Ser Ile Lys Asn Asp Leu Ala Ile Ala Gly Glu Ile Gln Gln Thr
145          150          155          160
Ile Leu Pro Arg Ser Phe Pro Pro Phe Pro Glu Leu Thr Glu Val Val
          165          170          175
Asp Ile Tyr Ala Ser Met Thr Pro Ala Lys Asp Val Gly Gly Asp Phe
          180          185          190
Tyr Asp Phe Phe Gln Ile Asp Asp Glu Arg Ile Gly Leu Val Ile Ala
          195          200          205
Asp Val Ser Gly Lys Gly Val Pro Ala Ser Leu Phe Met Ala Val Ser
          210          215          220
Arg Thr Leu Leu Arg Ala Thr Ala Leu Arg Gly Val Ser Ser Ala Glu
225          230          235          240
Cys Leu Thr Tyr Ala Asn Lys Leu Leu Cys Lys Glu Ser Leu Asp Ser
          245          250          255
Met Phe Val Thr Val Phe Tyr Gly Ile Tyr His Tyr Lys Thr Gly Met
          260          265          270
Met Asp Tyr Thr Asn Ala Gly His Asn Pro Pro Tyr Leu Leu Arg Gly
          275          280          285
Gly Arg Thr Val Glu Cys Leu Pro Val Ala Ser Asn Phe Val Val Gly
          290          295          300
Val Phe Asp Asp Ile Glu Phe Glu Ser Asn Thr Leu Thr Phe Gly Ile
305          310          315          320
Gly Asp Thr Leu Leu Leu Tyr Thr Asp Gly Val Thr Glu Ala Phe Asn
          325          330          335
Asp Lys Arg Glu Gln Phe Ser Glu Ser Asn Leu Gln Asp Ile Leu Ala
          340          345          350
Ser Met His Glu Ser Ser Ser Ala Lys Glu Val Val Thr Ser Val Leu

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355 360 365
 Gln Ser Val Lys Thr Phe Ser Gly Asp Tyr Pro Gln Ser Asp Asp Ile
 370 375 380
 Thr Leu Leu Ser Leu Gln Arg Ile Lys
 385 390

<210> 6841
 <211> 159
 <212> PRT
 <213> B.fragilis

<400> 6841
 Lys Ser Lys Glu Asn Met Ser Met His Thr Trp Phe Glu Cys Lys Ile
 1 5 10 15
 Arg Tyr Glu Lys Leu Met Glu Asn Gly Met Asn Lys Lys Val Thr Glu
 20 25 30
 Pro Tyr Leu Val Asp Ala Leu Ser Phe Thr Glu Ala Glu Ala Arg Ile
 35 40 45
 Ile Glu Glu Met Thr Pro Phe Ile Thr Gly Glu Phe Thr Val Ser Asp
 50 55 60
 Ile Lys Arg Ala Asn Tyr Ser Glu Leu Phe Pro Ser Glu Glu Glu Ala
 65 70 75 80
 Ala Asp Arg Trp Phe Lys Cys Lys Leu Ile Phe Ile Thr Leu Asp Glu
 85 90 95
 Lys Ser Gly Ala Glu Lys Lys Thr Ser Thr Gln Val Leu Val Gln Ala
 100 105 110
 Ala Asp Leu Arg Asp Ala Val Lys Lys Leu Asp Glu Gly Met Lys Gly
 115 120 125
 Thr Met Ala Asp Tyr Gln Ile Gly Ser Val Ala Glu Thr Ala Ile Met
 130 135 140
 Asp Val Tyr Pro Tyr Ser Ser Glu Pro Asn Asp Lys Pro Glu Val
 145 150 155

<210> 6842
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 6842
 Phe Met Lys Glu Asn Ser Ile Lys Pro Tyr Cys Tyr Cys Gly Glu Ser
 1 5 10 15
 Glu Ser Ser Leu Val Asp Asn Ala Ile Phe Val Tyr Phe Gly Asp Glu
 20 25 30
 Tyr Arg Arg Val Leu Leu Asp Glu Ile Leu Trp Leu Glu Ala Ser Gly
 35 40 45
 Ser Tyr Cys Val Leu Cys Met Glu Asn Gly Ala Glu Ile Thr Val Ser
 50 55 60
 Tyr Pro Leu Asp Arg Ile Phe Asn Asn Asp Leu Pro Arg Gly Lys Phe
 65 70 75 80
 Gln Arg Ile His Arg Ser Tyr Ala Ile Asn Val Phe Lys Val Thr Gly
 85 90 95
 Phe Ala Gly Asn Tyr Val His Ile Gly Lys Lys Met Leu Pro Val Ser
 100 105 110
 Glu Ser His Lys Lys Asn Phe Leu Ala Cys Phe His Lys Ile Tyr Ser
 115 120 125
 Lys Arg Ala Leu Gly Lys
 130

<210> 6843

<211> 206
 <212> PRT
 <213> B.fragilis

<400> 6843

Tyr	Asn	Met	Asp	Asn	Lys	Lys	Val	Arg	Ser	Thr	Ser	Ser	Gln	Val	Met
1				5					10					15	
Glu	Leu	Gln	Gln	Leu	Ile	Ala	Gly	Pro	Leu	Ile	Ala	Thr	Ile	Glu	Ala
			20					25					30		
Asp	Ser	Leu	Ser	Ser	Gln	Arg	Tyr	Leu	Asp	Tyr	Leu	Met	Lys	Ile	Ala
		35					40					45			
Phe	Glu	Ser	Tyr	Asp	Pro	Val	Thr	Gly	Arg	Thr	Gly	Lys	Ile	Arg	Met
	50					55					60				
Leu	Thr	Phe	Asn	Tyr	Gln	Ser	Gln	Asp	Ala	Gly	Gly	Gly	Arg	Thr	Gln
65					70					75					80
Ser	Val	Ser	Ile	Pro	Ile	Leu	Thr	Leu	Val	Pro	Leu	Pro	Leu	Leu	Gln
				85				90						95	
Val	Gln	Glu	Ala	Asp	Phe	Asp	Phe	Asp	Ile	Lys	Ile	Leu	Asp	Ala	Leu
			100					105					110		
Ser	Glu	Thr	Ala	Glu	Glu	Lys	Phe	Ser	Leu	Glu	Glu	Gly	Lys	Ser	Val
		115					120					125			
Asn	Glu	Pro	Gln	Ser	Gly	Gly	Gly	Phe	Lys	Leu	Arg	Ala	Ser	Leu	Ala
	130					135					140				
Pro	Lys	Gln	Gly	Glu	Gly	Ser	Ser	Thr	Ser	Asn	Val	Gln	Gln	Ser	Leu
145					150					155					160
Ser	Ala	Asn	Met	Lys	Val	Lys	Val	Lys	Met	Arg	Gln	Ala	Asp	Met	Pro
			165						170					175	
Ala	Gly	Leu	Ser	Asn	Leu	Leu	His	Leu	Thr	Ala	Ser	Asn	Met	Gln	Val
			180					185					190		
Glu	Glu	Thr	Glu	Ala	Glu	Glu	Ile	Thr	Glu	Gly	Gly	Asn	Lys		
		195					200					205			

<210> 6844
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 6844

Arg	Ile	Ala	Glu	Ser	Ser	Glu	Cys	Ala	Gly	Glu	Phe	Gly	Glu	Lys	Lys
1				5					10					15	
Gln	Val	Gln	Arg	Leu	Asn	Gly	Arg	Gly	Met	Lys	Leu	Thr	Phe	Phe	Lys
			20					25					30		
Arg	Met	Gly	Glu	Lys	Ile	Arg	His	Pro	Phe	Arg	Lys	Glu	Ile	Pro	Lys
		35					40					45			
Thr	Ile	Pro	Val	Val	Glu	Thr	Ala	Pro	Gln	Pro	Val	Ala	Asp	Asn	Thr
	50					55					60				
Thr	Glu	Ala	Thr	Ala	Glu	Asp	Ser	Ser	Val	Ile	Arg	Ser	Ala	Asp	Gln
65					70					75					80
Cys	Gly	Glu	Gln	Ala	Arg	Tyr	Phe	Leu	Leu	Arg	Asn	Asn	Lys	Pro	Val
				85					90					95	
Gly	Lys	Pro	Phe	Ser	Tyr	Tyr	His	Pro	Glu	Ile	Arg	Ile	Val	His	Val
		100						105					110		
Gly	Ser	Phe	Val	Asn	Ala	Phe	Leu	Phe	Phe	Leu	Arg	Met	Cys	Asp	Gln
		115					120					125			
Arg	Leu	Leu	Thr	Tyr	Arg	Gln	Thr	Gly	Glu	Tyr	Leu	His	Cys	Thr	Ala
		130				135					140				
Val	Phe	Pro	Asp	Glu	Ser	Gly	Asn	Leu	Tyr	Phe	Thr	Asn	Lys	Val	Thr
145					150					155					160
Cys	Arg	Asn	Lys	Glu	Asn	Thr	Val	Ala	Val	Leu	Lys	Ile	Asp	Tyr	Val

				165					170					175			
Gly	Leu	Lys	Pro	Lys	Ile	Thr	Glu	Ile	Arg	Phe	Glu	Leu	Asn	Ile	Lys		
			180					185					190				
Lys																	

<210> 6845
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 6845

Arg	Ile	Arg	Glu	Arg	Pro	Ser	Leu	Pro	Phe	Leu	Lys	Pro	Tyr	Ser	Gln		
1				5					10					15			
Ser	Asp	Met	Lys	Ser	Trp	Leu	Ala	Ala	Tyr	Val	Arg	Leu	Tyr	His	Glu		
		20						25					30				
Lys	Lys	Thr	Arg	Asp	Arg	Leu	Thr	Ala	Met	Gly	Ile	Glu	Ser	Phe	Leu		
		35					40						45				
Pro	Val	Gln	Glu	Glu	Ile	His	Gln	Trp	Ser	Asp	Arg	Arg	Lys	Lys	Ile		
	50					55					60						
Glu	Arg	Val	Val	Ile	Pro	Met	Met	Ile	Phe	Val	His	Val	Asp	Pro	Ala		
65					70					75					80		
Glu	Arg	Ala	Glu	Val	Leu	Thr	Leu	Ser	Ser	Val	Ser	Arg	Tyr	Met	Val		
				85					90					95			
Leu	Arg	Gly	Gln	Ser	Thr	Pro	Ala	Val	Ile	Pro	Asp	Glu	Gln	Met	Glu		
			100					105					110				
Arg	Phe	Arg	Phe	Met	Leu	Asp	Tyr	Ser	Glu	Glu	Ala	Ile	Glu	Val	Cys		
		115					120					125					
Ser	Ser	Pro	Leu	Ala	Pro	Gly	Glu	Gln	Val	Arg	Val	Ile	Lys	Gly	Pro		
		130				135					140						
Leu	Ala	Gly	Leu	Glu	Gly	Glu	Leu	Val	Thr	Ile	Asp	Gly	Lys	Ser	Lys		
145					150					155					160		
Val	Ala	Val	Arg	Leu	Asp	Met	Leu	Gly	Cys	Ala	His	Val	Asp	Met	Pro		
				165					170					175			
Val	Gly	Phe	Val	Glu	Arg	Val	Gly	Lys	Met	Glu	Ala	Val	Arg				
			180					185					190				

<210> 6846
 <211> 549
 <212> PRT
 <213> B.fragilis

<400> 6846

Arg	Asn	Ile	Leu	Met	Glu	Lys	Leu	His	Ile	Arg	Lys	Ile	Ala	Ser	Leu		
1				5					10					15			
Gly	Leu	Met	Leu	Cys	Phe	Phe	Thr	Gly	Val	Gly	Ala	Gln	Thr	Pro	Val		
		20						25					30				
Lys	Val	Glu	Lys	Arg	Lys	Glu	His	Lys	Ser	Asn	Thr	Val	Ile	Pro	Val		
		35					40						45				
Val	Lys	Gly	Asn	Val	Thr	Asp	Thr	Leu	Ser	Leu	Val	Ser	Phe	Asn	Asp		
	50					55					60						
Phe	His	Gly	Ala	Phe	Ala	Cys	Asp	Lys	Gly	Val	Pro	Gly	Ala	Gly	Gln		
65					70					75					80		
Leu	Val	Gln	Thr	Val	Leu	Thr	Gln	Lys	Glu	Lys	Asn	Lys	Asn	Thr	Ile		
				85					90					95			
Val	Leu	Ser	Val	Gly	Asp	Asn	Phe	Ser	Gly	Ser	Tyr	Phe	Ser	Arg	Ile		
			100					105					110				
Thr	Arg	Gly	Asn	Pro	Leu	Pro	Glu	Met	Phe	Gln	Glu	Met	Asp	Val	Lys		
		115						120					125				

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Met Ser Ala Val Gly Asn His Glu Phe Asp Trp Gly Leu Pro Tyr Leu
130                      135                      140
Thr Asp Thr Ala Lys Val Tyr Met Asn Phe Val Ala Ala Asn Ile Ile
145                      150                      155                      160
Thr Asp Arg Gly Asp Thr Leu Glu Trp Ala Lys Pro Tyr Arg Ile Val
                      165                      170                      175
Thr Leu Asn Leu Lys Asn Gly Gly Thr Val Arg Val Ala Phe Val Gly
                      180                      185                      190
Leu Thr Thr Thr Asp Thr Ala His Lys Thr Ser Pro Glu Asn Ile Lys
                      195                      200                      205
Gly Leu Ala Phe Val His Pro Val Tyr Ala Ala Arg Val Glu Thr Ala
210                      215                      220
Cys Arg Leu Lys Lys Glu Gly Lys Val Asp Met Val Val Leu Leu Met
225                      230                      235                      240
His Ile Gly Thr Asn Met Lys Asn Arg Asp Ile Ile Glu Glu Glu Asn
                      245                      250                      255
Ala Lys Leu Leu Pro Phe Leu Lys Gly Val Asp Ala Ile Ile Ser Gly
                      260                      265                      270
His Ser His Glu Val Val Leu Ser Lys Val Asn Asp Val Pro Ile Ile
                      275                      280                      285
Gln Ala Gly Val Asn Gly Thr His Ile Gly Lys Leu Asp Phe Arg Val
290                      295                      300
Val Lys Glu Glu Gly Gly Asn Arg Ile Ser Tyr Ile Gly Gly Asp Thr
305                      310                      315                      320
Ile Arg Thr Glu Gly Pro Ser Asn Ala His Ile Asp Ser Leu Val Asp
                      325                      330                      335
Lys Val Leu Ala Val Tyr Gly Leu Ser Glu Lys Leu Ile Leu Ala Lys
                      340                      345                      350
Asp Ala Leu Ile His Asp Arg Thr Ile Asn Lys Trp Glu Tyr Thr Pro
                      355                      360                      365
Val Gly Ala Tyr Val Thr Ala Ala Tyr Val Arg Ser Phe Leu Glu Asn
370                      375                      380
Glu Lys Val Pro Ala Glu Leu Lys Val Leu Pro Val Ile Gly Val Asn
385                      390                      395                      400
His Phe Gly Gly Leu Arg Ala Ser Ile Pro Ala Gly Glu Val Thr Arg
                      405                      410                      415
Leu Arg Ala Gly Asn Val Leu Pro Phe Gly Gly Asn Val Val Ala Tyr
                      420                      425                      430
Glu Phe Thr Gly Glu Arg Leu Lys Gln Leu Leu Asp Asp Gly Arg Arg
435                      440                      445
Asn Lys Asn Gly Phe Leu Gln Thr Ser Tyr Leu Lys Leu His Leu Asn
450                      455                      460
Ser Lys Gly Asn Val Glu Thr Ile Thr Asp Cys Arg Thr Asn Lys Ile
465                      470                      475                      480
Ile Arg Asp Asp Asp Lys Cys Ile Val Val Leu Asp Ala Phe Ile Thr
                      485                      490                      495
Ser Gly Gly Asp Gly Tyr Asp Ser Lys Leu Phe Ser Gly Tyr Glu Ile
                      500                      505                      510
Gly Asp Phe Asn Ser Gln Asn Leu Glu Thr Thr Val Ala Phe Ile Asp
515                      520                      525
Tyr Leu Lys Ser Leu Lys Gly Phe Val Ser Ser Glu Ala Ala Pro Ile
530                      535                      540
Pro Ile Val Gln Lys
545

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<210> 6847

<211> 75

<212> PRT

<213> B.fragilis

<400> 6847

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Ser His Thr Leu Phe Phe Leu Gln Ala Tyr Pro Met Pro Ile Ser Ile
1          5          10          15
Leu Cys His Thr Leu Pro Thr Tyr Asp Phe Thr Ala Pro Trp Ser Tyr
          20          25          30
Val Gln Pro Leu Ser Arg Ser His Ala Asn Ala Pro Arg Phe Leu Ala
          35          40          45
Asp Leu Asn Pro Ala Asp Lys Phe Met Glu Leu Asn Leu Pro His Val
          50          55          60
Gly His Leu Ser His Gly Ser Leu Leu Thr Thr
65          70          75

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<210> 6848

<211> 258

<212> PRT

<213> B.fragilis

<400> 6848

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Thr Met Lys Leu Asn Leu Lys Asn Pro Ile Val Phe Phe Asp Leu Glu
1          5          10          15
Thr Thr Gly Thr Asn Ile Asn Ser Asp Arg Ile Val Glu Ile Cys Tyr
          20          25          30
Leu Lys Val Tyr Pro Asn Gly Asn Glu Glu Ser Lys Thr Leu Arg Ile
          35          40          45
Asn Pro Glu Met Pro Ile Pro Ala Glu Ser Ser Ala Val His Gly Ile
          50          55          60
Tyr Asp Ala Asp Val Ala Asp Cys Pro Thr Phe Lys Glu Val Ala Lys
65          70          75          80
Ser Ile Ala Asn Asp Ile Glu Gly Cys Asp Leu Ala Gly Phe Asn Ser
          85          90          95
Asn Arg Phe Asp Ile Pro Val Leu Ala Glu Glu Phe Leu Arg Ala Gly
          100          105          110
Val Asp Ile Asp Met Ser Lys Arg Lys Phe Val Asp Val Gln Val Ile
          115          120          125
Phe His Lys Met Glu Gln Arg Thr Leu Thr Ala Ala Tyr Lys Phe Tyr
          130          135          140
Cys Gly Arg Asn Leu Glu Asp Ala His Thr Ala Glu Ala Asp Thr Arg
145          150          155          160
Ala Thr Tyr Glu Val Leu Met Ala Gln Leu Asp Arg Tyr Pro Glu Glu
          165          170          175
Leu Gln Asn Asp Met Ser Phe Leu Ala Asp Tyr Ser Ser Tyr Asn Lys
          180          185          190
Asn Val Asp Phe Ala Gly Arg Met Val Tyr Asp Asp Asn Gly Val Glu
          195          200          205
Val Phe Asn Phe Gly Lys Tyr Lys Gly Gln Ser Val Ser Glu Val Leu
          210          215          220
Lys Lys Asp Pro Gly Tyr Tyr Ser Trp Ile Leu Asn Ser Asp Phe Thr
225          230          235          240
Leu Asn Thr Lys Ala Met Leu Thr Lys Ile Arg Leu Arg Glu Leu Thr
          245          250          255
Gly Lys

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<210> 6849

<211> 368

<212> PRT

<213> B.fragilis

<400> 6849

Arg His Ser Trp Trp Asp Thr Ser Lys Ser Ile Lys Ile Gln Arg Asn
 1 5 10 15
 Lys Tyr Thr Ile Lys Pro Leu Leu Ser Met Pro Lys Val Leu Val Val
 20 25 30
 Ala Thr Ser Arg Lys Thr Lys Gly Gly Ile Thr Ser Val Val Lys Ala
 35 40 45
 His Glu Thr Gly Glu Gln Trp Lys Lys Phe His Cys Lys Trp Ile Glu
 50 55 60
 Thr His Arg Asp Gly Asn Ser Val Arg Lys Leu Trp Tyr Leu Ala Thr
 65 70 75 80
 Ala Leu Ile Glu Tyr Ile Cys Leu Leu Pro Phe Tyr Asp Ile Val His
 85 90 95
 Ile His Val Gly Leu Arg Thr Ser Val Asn Arg Lys Leu Ile Phe Ala
 100 105 110
 Arg Ile Ala Leu Leu Phe Arg Lys Lys Ile Ile Val His Phe His Pro
 115 120 125
 Ala Thr Glu Lys His Leu Phe Asp Pro Met Phe Ser Gly Asn Ile Lys
 130 135 140
 His Leu Phe Glu Leu Ser Asn Lys Leu Leu Val Leu Ser Pro Lys Trp
 145 150 155 160
 Ile Glu Trp Ile Asn Glu Ala Tyr Arg Gly Asn Lys Tyr Asn Ile Gln
 165 170 175
 Val Leu Tyr Asn Pro Cys Pro Ser Val Lys Arg Ser Ile Gln Arg Glu
 180 185 190
 Asn Tyr Ile Leu Tyr Ala Gly Ile Leu Ser Asp Arg Lys Gly Tyr Asn
 195 200 205
 Arg Leu Ile Glu Ala Phe Ser Lys Ile Ala Ala Lys Tyr Pro Asp Trp
 210 215 220
 Lys Ile Lys Phe Ala Gly Asn Gly Glu Ile Glu Lys Gly Lys Ser Leu
 225 230 235 240
 Ala Val Lys Phe Gly Ile Glu Gln Gln Thr Glu Phe Leu Gly Trp Ile
 245 250 255
 Ala Gly Asn Thr Lys Glu Ser Ile Phe Gln His Ala Ser Ile Tyr Cys
 260 265 270
 Leu Pro Ser Trp Gly Glu Gly Phe Pro Met Gly Val Ile Asp Ala Ile
 275 280 285
 Ala Tyr Gly Ile Pro Val Ile Thr Thr Pro Val Gly Leu Glu Lys
 290 295 300
 Val Phe His Asp Gly Ile Asp Ala Met Ile Tyr Glu Thr Tyr Asp Leu
 305 310 315 320
 Lys Met Leu Ala Asp Lys Leu Glu Gln Leu Ile Lys Ser Glu Thr Tyr
 325 330 335
 Arg Asn Ser Ile Val Asn Glu Ala Asp Lys Leu Val Cys Ser Asp Phe
 340 345 350
 Asn Ile Ile Thr Ile Cys Asn Lys Ile Glu Lys Ile Tyr Glu Asn Met
 355 360 365

<210> 6850

<211> 378

<212> PRT

<213> B.fragilis

<400> 6850

Cys His His Arg Ser Gln Cys Cys Cys Asn Lys Arg Arg Thr Lys Gln
 1 5 10 15
 Leu Tyr Ser Ser Gly Cys Thr Cys Lys Asn Tyr Lys Glu Asn Met Ile
 20 25 30
 Tyr Leu Ile Cys Gln Asp Trp Ser Asn Thr Ser Asn Asn His Ala Gly

35	40	45
Ile Lys Tyr Leu Cys Asn Gln Ile Gln Glu Met Tyr Pro Glu Ser Tyr		
50	55	60
Lys Thr Phe Val Ile Pro Ala Phe Trp Asn Asp Arg Ser Lys Ser Pro		
65	70	75
Ile Arg Ile Ile Ala Ser Leu Gln Tyr His Phe Ala Arg Tyr Lys His		
85	90	95
Arg Leu Tyr Thr Lys Lys Leu Tyr Asn His Ile Ile Ser Lys Leu Arg		
100	105	110
Lys Gly Asp Lys Ile Ile Leu Met Glu Tyr Met Glu Lys Phe Phe Pro		
115	120	125
Met Leu His Phe Ala Gln Lys Val Lys Arg Tyr Lys Phe Asn Ile Pro		
130	135	140
Leu Tyr Ala Met Val His Leu Val Pro Ser Arg Leu Glu Lys Gly Phe		
145	150	155
Ser Asp Lys Lys Thr Phe Asp Glu Trp Thr Ile Cys Ile Asp Lys Phe		
165	170	175
Leu Thr Leu Gly His Ser Leu Thr Gln Phe Leu Ile Thr Lys Gly Leu		
180	185	190
Pro Glu Asp Lys Val Val Thr Thr Phe His Tyr Val Asp Glu Tyr Tyr		
195	200	205
His Asn Lys Arg Pro Val Arg Leu His Lys Asn Ile Arg Val Ile Ala		
210	215	220
Met Gly Asn Gln Met Arg Asn Leu Lys Leu Leu Lys Thr Ile Val Asp		
225	230	235
Asn Asn Pro Asn Val Asn Phe Thr Ile Cys Gln Gly Val Asn Asp Leu		
245	250	255
Ser Ser Tyr Phe Leu Lys Asn Thr Asn Val Glu Leu Ile Pro Phe Val		
260	265	270
Glu Glu Ser Glu Leu Arg Gln His Met Ala Asn Ala Asp Ile Ser Leu		
275	280	285
Asn Val Met Glu Asp Thr Val Gly Ser Asn Val Ile Val Thr Ser Leu		
290	295	300
Ala Met Gly Leu Ala Met Ile Cys Ser Asn Val Gly Ser Ile Lys Asp		
305	310	315
Tyr Cys Asp Asp Ser Asn Thr Ile Phe Cys Asn Asn Ser Asn Val Glu		
325	330	335
Asp Phe Ser Gln Ala Ile Thr Ala Leu Gln Thr Asp Arg Ile Arg Leu		
340	345	350
Asn Thr Met Gln Gln Ser Ala Ala Asn Met Gly Leu Gln Phe Thr Ile		
355	360	365
Glu Lys Phe Val Arg Gln Ile Ser Ala Leu		
370	375	

<210> 6851

<211> 298

<212> PRT

<213> B.fragilis

<400> 6851

Val Gly Asp Arg Met Glu Ser Thr Tyr Ile Glu Leu Lys Asp Ile Ala	
1	5
Gln Glu Ile Ser Asp Gln Gly Glu Gly Ile Glu Phe Asn Pro Leu Arg	
20	25
Leu Glu Glu Val Asn Asp Gly Leu Asn Leu Ile Tyr Ser Leu Glu Gln	
35	40
Lys His Arg Val Gln Thr Val Glu Glu Leu Ile Ala Leu Ser Glu Gln	
50	55
Tyr Ala Thr Arg Leu Ala Ala Ile Thr Ser Tyr Asp Asp Arg Ile Val	
	60

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65          70          75          80
Lys Leu Thr Glu Arg Arg Asp Ala Gln Tyr Asn Lys Val Lys Lys Gln
      85          90          95
Ala Ala Val Leu Thr Lys Ala Arg Thr Glu Ile Ala Arg Glu Val Glu
      100          105          110
Gln Gln Met Ala Ala Arg Leu Ile Pro Leu Gly Ile Pro Asn Val Arg
      115          120          125
Phe Gln Val Glu Met Gly Leu Lys Lys Glu Pro Gly Pro Gln Gly Ala
      130          135          140
Asp Thr Val Asn Phe Leu Phe Ser Ala Asn Lys Asn Gly Thr Leu Gln
      145          150          155          160
Ser Val Ser Ser Val Ala Ser Gly Gly Glu Ile Ala Arg Val Met Leu
      165          170          175
Ser Ile Lys Ala Met Ile Ala Gly Ala Val Lys Leu Pro Thr Ile Val
      180          185          190
Phe Asp Glu Ile Asp Thr Gly Val Ser Gly Glu Ile Ala Asp Arg Met
      195          200          205
Ala Asp Ile Met Gln Glu Met Gly Glu Gln Asn Arg Gln Val Ile Ser
      210          215          220
Ile Thr His Leu Pro Gln Ile Ala Ala Arg Gly Arg Ala His Tyr Lys
      225          230          235          240
Val Tyr Lys Arg Asp Asn Asp Thr Glu Thr Asn Ser His Ile Arg Arg
      245          250          255
Leu Thr Asp Glu Glu Arg Val Glu Glu Leu Ala His Met Leu Ser Gly
      260          265          270
Ala Thr Leu Thr Glu Ala Ala Leu Ser Asn Ala Arg Ala Leu Leu Glu
      275          280          285
Pro Ser Leu Lys Glu Arg Lys Ile Ile Lys
      290          295

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<210> 6852

<211> 263

<212> PRT

<213> B.fragilis

<400> 6852

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Phe Met Leu Arg Ser Leu Tyr Ile Gln Asn Tyr Ala Leu Ile Glu Lys
1          5          10          15
Leu Asp Ile Arg Phe Glu Thr Gly Phe Ser Val Ile Thr Gly Glu Thr
      20          25          30
Gly Pro Gly Gln Ser Ile Ile Leu Gly Ala Ile Gly Leu Leu Leu Gly
      35          40          45
Gln Arg Ala Asp Val Lys Ala Ile Arg Gln Gly Ala Ser Lys Cys Val
      50          55          60
Ile Glu Ala Arg Phe Asp Ile Ser Ala Tyr His Met Glu Ala Phe Phe
65          70          75          80
Glu Glu Asn Glu Leu Glu Tyr Glu Pro Glu Cys Ile Leu Arg Arg Glu
      85          90          95
Val Gln Ser Ser Gly Lys Ser Arg Ala Phe Ile Asn Asp Thr Pro Ala
      100          105          110
Ser Leu Thr Gln Met Lys Glu Leu Gly Glu Gln Leu Ile Asp Val His
      115          120          125
Ser Gln His Gln Asn Leu Leu Leu Asn Lys Glu Gly Phe Gln Leu Asn
      130          135          140
Val Leu Asp Ile Leu Ser His Asn Glu Glu Ala Leu Asp Val Tyr His
      145          150          155          160
His Leu Tyr Gln Asp Trp Lys Lys Leu Cys Lys Glu Leu Asp Glu Leu
      165          170          175
Ile Val Leu Ala Glu Gln Ser Lys Thr Asp Glu Asp Tyr Ile Arg Phe

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      180              185              190
Gln Leu Glu Gln Leu Glu Glu Ala His Leu Thr Ala Gly Glu Gln Glu
      195              200              205
Glu Leu Glu Gln Glu Ala Glu Thr Leu Ala His Ala Glu Asp Ile Lys
      210              215              220
Ala Gly Leu Tyr Arg Val Gly Gln Thr Leu Ala Ser Asp Glu Gly Gly
      225              230              235              240
Leu Leu Ala Cys Ile Glu Arg Lys Ser Trp Arg Phe Glu Trp Ala Ala
      245              250              255
Glu Ser Ile Ser Thr Cys Arg
      260

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<210> 6853
 <211> 151
 <212> PRT
 <213> B.fragilis

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<400> 6853
Ile Val Arg Arg Ser Tyr Asn Phe Leu Gly Ile Ser Asp Glu Tyr Ser
1          5          10          15
Pro Val Phe Ser Ser Leu Leu Leu Cys Cys Leu Asn Leu Phe Cys Asn
      20          25          30
Phe Val Leu Cys Lys Asn Ile Lys Phe Lys Ile Thr Asp Tyr Met Lys
      35          40          45
Phe Ile Val Ser Ser Thr Ala Leu Phe Ser His Leu Gln Ala Val Ser
      50          55          60
Arg Val Ile Asn Ser Lys Asn Ala Leu Pro Ile Leu Asp Cys Phe Leu
      65          70          75          80
Phe Gln Leu Glu Asp Gly Thr Leu Ser Val Thr Val Ser Asp Ser Glu
      85          90          95
Thr Thr Met Val Thr Ser Val Glu Val Asn Glu Ser Asp Ser Asn Gly
      100         105         110
Lys Phe Ala Val Ala Ala Lys Thr Leu Leu Asp Ala Leu Lys Glu Ile
      115         120         125
Pro Glu His Pro Leu Thr Leu Ile Ser Lys Pro Asp Thr Tyr Glu Ile
      130         135         140
Thr Gly Thr Val Pro Glu Trp
      145         150

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<210> 6854
 <211> 192
 <212> PRT
 <213> B.fragilis

```

<400> 6854
Ile Met Lys Leu Asn Asn Ile Lys Thr Gly Leu Leu Leu Ala Gly Leu
1          5          10          15
Leu Leu Leu Phe Gly Asn Val Lys Ala Gln Asp Asn Pro Phe Lys Pro
      20          25          30
Glu Trp Phe Val Ser Gly Gly Ile Asn Gly Ile Thr Ala Leu Asn Gly
      35          40          45
Ser Ala Asn Asn Ile Leu Gly Lys Val Ser Gly Gly Val Trp Leu
      50          55          60
Asn Lys Ile Ile Gly Leu Arg Val Asp Ala Glu Ala Gly Asn Val Trp
      65          70          75          80
Leu Lys Gly Gly Tyr Asn Ala Val Thr Val Gly Ala Gly Ala Asp Ile
      85          90          95
Leu Val Asn Leu Met Lys Asn Tyr Thr Asp Glu Asp Arg Lys Phe Arg
      100         105         110

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Leu Asn Ala Ile Phe Gly Leu Gly Tyr Asn Tyr Tyr Ser Phe Gly Asp
      115              120              125
Asp Tyr Pro Arg Leu Ser Lys Thr Asn Thr Met Ser Gly Asn Phe Ser
      130              135              140
Leu Gln Ala Ala Phe Arg Leu Asn Ser His Leu Ser Ile Phe Ala Glu
      145              150              155              160
Pro Gly Ile Lys Ile Ser Thr Lys Phe Tyr Asp Ile Glu Asn Lys Asp
      165              170              175
Asp Val Phe Ala Gly Gly Met Met Thr Val Gly Val Ile Tyr Lys Phe
      180              185              190

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<210> 6855
 <211> 228
 <212> PRT
 <213> B.fragilis

```

<400> 6855
Thr Gln Asn Ser Ile Lys Met Asn Val Thr Asp Asn Leu Lys Gln Val
1      5      10      15
Leu Ala Glu Leu Pro Ser Gly Val Arg Leu Val Ala Val Ser Lys Phe
      20      25      30
His Pro Asn Glu Ala Ile Glu Glu Ala Tyr Arg Ala Gly Gln Arg Ile
      35      40      45
Phe Gly Glu Ser Lys Val Gln Glu Met Thr Gly Lys Tyr Glu Ser Leu
      50      55      60
Pro Lys Asp Ile Glu Trp His Phe Ile Gly His Leu Gln Thr Asn Lys
      65      70      75      80
Ile Lys Tyr Met Ala Pro Tyr Val Ser Met Ile His Gly Ile Asp Ser
      85      90      95
Tyr Lys Leu Leu Ala Glu Val Asn Lys Gln Ala Ile Lys Ala Glu Arg
      100     105     110
Val Ile Arg Cys Leu Leu Gln Ile His Ile Ala Gln Glu Glu Thr Lys
      115     120     125
Phe Gly Phe Ser Phe Asp Glu Cys Lys Glu Met Leu Asn Ala Ala Glu
      130     135     140
Trp Lys Ala Leu Ala Asn Ile Gln Ile Cys Gly Leu Met Gly Met Ala
      145     150     155     160
Thr Asn Thr Asp Ser Lys Glu Gln Ile Glu Arg Glu Phe Arg Ser Leu
      165     170     175
Asn Cys Phe Phe His Glu Val Lys Lys Gln Tyr Phe Ala Asn Glu Pro
      180     185     190
Thr Phe Cys Glu Leu Ser Met Gly Met Ser His Asp Tyr His Leu Ala
      195     200     205
Ile Lys Glu Gly Ser Thr Leu Val Arg Val Gly Ser Lys Ile Phe Gly
      210     215     220
Glu Arg Val Tyr
225

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<210> 6856
 <211> 347
 <212> PRT
 <213> B.fragilis

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<400> 6856
Gln Lys Ser Arg Asn Asn His Met Tyr Lys Ala Pro Pro Arg Asp Ile
1      5      10      15
Ser Ile Asp Ile Leu Lys Cys Ile Ala Ala Ile Met Ile Thr Asn Ser
      20      25      30
His Met Asp Ile Leu Tyr Gly Asp Tyr Ser Tyr Leu Ala Thr Gly Gly

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35	40	45
Ala Ile Gly Asp Ala Leu Phe Phe Phe Cys Ser Gly Tyr Thr Leu Phe		
50	55	60
Leu Gly Arg Asp Met Asp Phe Phe Asn Trp Tyr Lys Arg Arg Ile Asn		
65	70	75
Arg Ile Tyr Pro Thr Val Phe Thr Trp Ala Leu Ile Ala Ala Val Phe		
85	90	95
Phe Asp Gln Arg Tyr Asp Met Pro Glu Ile Leu Ile Lys Gly Gly Gly		
100	105	110
Trp Phe Val Ser Cys Ile Met Ile Tyr Tyr Val Val Leu Trp Phe Ile		
115	120	125
Arg Lys Phe Leu Lys Lys His Leu Lys Trp Val Phe Phe Met Ala Ala		
130	135	140
Thr Ile Thr Leu Leu Trp Tyr Phe Val Leu Gly Phe Gly Glu Lys Ser		
145	150	155
Gly Asn Asn Met Tyr Gly Trp Asn Tyr Phe Lys Trp Cys Tyr Tyr Phe		
165	170	175
Leu Phe Met Leu Leu Gly Ser Met Met Gly Leu Lys Arg Asn Leu Asn		
180	185	190
Lys Lys Thr Tyr Pro Phe Phe Glu Gly Leu Tyr Asp Lys His Ile His		
195	200	205
Ile Ile Pro Ile Phe Leu Lys Leu Leu Ile Cys Ile Val Leu Phe Phe		
210	215	220
Gly Leu Cys Trp Phe Lys Cys Gln Thr Gly Ile Gly Trp Glu Leu Leu		
225	230	235
Gln Ile Ser Ser Leu Ile Pro Leu Leu Gly Thr Thr Tyr Tyr Phe Trp		
245	250	255
Arg Leu Ser Asn Thr Lys Leu Leu Thr Gln Ala Tyr His His His Leu		
260	265	270
Thr Gly Pro Ile Ile Arg Phe Ile Ser Gly Leu Cys Leu Glu Ile Tyr		
275	280	285
Leu Val Gln Tyr Asn Leu Phe Thr Asp Lys Leu Asn Asn Ile Phe Pro		
290	295	300
Leu Asn Leu Leu Val Ile Phe Ser Thr Ile Leu Val Thr Ala Tyr Leu		
305	310	315
Leu Arg Cys Leu Ser Arg Ile Trp Ser Gln Thr Phe Lys Asp Gly Asp		
325	330	335
Tyr Asp Trp Arg Asp Val Thr Lys Leu Tyr Ser		
340	345	

<210> 6857

<211> 316

<212> PRT

<213> B.fragilis

<400> 6857

Cys Val Cys Gly Leu Phe Pro Gly Val Cys Phe Val Asp Glu Leu Arg	
1	5
Gly Leu Ile Gly Ser Gly Arg Val Thr Ser Pro Tyr Leu His Ile Gly	
20	25
Gly Gly Ser Asn Leu Leu Phe Thr Lys Asp Tyr Glu Gly Thr Ile Leu	
35	40
His Ser Arg Ile Gly Gly Val Glu Val Val Ala Glu Thr Asp Asp Asp	
50	55
Ile Val Val Arg Val Gly Ala Gly Val Val Trp Asp Asp Phe Val Asp	
65	70
Tyr Cys Val Gln Arg His Trp Tyr Gly Val Glu Asn Leu Ser Leu Ile	
85	90
Pro Gly Glu Val Gly Ala Ser Ala Val Gln Asn Ile Gly Ala Tyr Gly	

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100      105      110
Val Glu Val Lys Asp Leu Ile Val Arg Val Glu Thr Leu Asn Ile Glu
115      120      125
Gly Lys Glu His Val Tyr Asp Val Thr Glu Cys Gly Tyr Ser Tyr Arg
130      135      140
Asp Ser Ile Phe Lys Arg Pro Glu Asn Lys Ser Val Phe Val Thr Tyr
145      150      155      160
Val Ser Phe Arg Leu Ser Lys Arg Glu His Tyr Thr Leu Asp Tyr Gly
165      170      175
Thr Ile Arg Arg Glu Leu Glu Lys Tyr Pro Gly Val Thr Leu Asp Val
180      185      190
Val Arg Arg Val Ile Ile Ala Ile Arg Glu Glu Lys Leu Pro Asp Pro
195      200      205
Arg Val Met Gly Asn Ala Gly Ser Phe Phe Met Asn Pro Ile Val Gly
210      215      220
Arg Glu Gln Phe Glu Ala Leu Gln Ala Glu Tyr Pro Gln Met Pro Phe
225      230      235      240
Tyr Glu Ile Asp Thr Asp Arg Val Lys Ile Pro Ala Gly Trp Met Ile
245      250      255
Asp Leu Cys Gly Trp Lys Gly Lys Ala Leu Gly Pro Ala Ala Val His
260      265      270
Asp Lys Gln Ala Leu Val Leu Val Asn Arg Gly Gly Ala Lys Gly Ala
275      280      285
Asp Val Ile Ala Leu Ser Asp Ala Val Arg Ala Ser Val Arg Ala Lys
290      295      300
Phe Gly Ile Asp Ile His Pro Glu Val Asn Phe Ile
305      310      315

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<210> 6858
 <211> 300
 <212> PRT
 <213> B.fragilis

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<400> 6858
Ser Arg Phe Met Gln Thr Glu Asn Phe Thr Leu Gly Lys Lys Glu Leu
1      5      10      15
Leu Ile Leu Leu Gly Leu Thr Leu Val Leu Pro Phe Pro Ile Asn Trp
20      25      30
Ala Leu Ile Glu Leu Asn Pro Leu Thr Leu Met Ala Gly Ala Asp Asp
35      40      45
Val Pro Thr Trp Ile Gly Phe Gly Gly Ser Tyr Ile Gly Gly Ile Ile
50      55      60
Gly Gly Ile Ile Ser Ile Met Ile Leu Asn Lys Thr Leu Gln Gln Thr
65      70      75      80
Gly Val Leu His His Asp Leu Lys Leu Leu Gln Leu Asp Thr Ile Ile
85      90      95
Tyr Thr Gln Gln Gln Asp Trp Phe Thr Gly Phe Lys Gln Glu Leu Ala
100      105      110
Glu Asn Leu Lys Ser Ile Asp Leu Tyr Val Leu Asn Thr Val Val Ser
115      120      125
Ser Ile Ser Met Lys Asn Tyr Ala Tyr Ala Lys Glu Val Leu Thr Glu
130      135      140
Ile Asn Lys Gly Leu Glu Tyr Gln Met Val Ala Ala Ser Phe Ser Phe
145      150      155      160
Thr Ser Thr His Leu Ser Ser Glu Glu Lys Lys Tyr Met Asn Leu Val
165      170      175
Arg Arg Val Gln Thr Glu Tyr Ser Ser Phe Ile Lys Asp Ile Leu Tyr
180      185      190
Tyr Ile Pro Leu Ala Glu Thr Ile Ser Ser Arg Lys Lys Leu Asn Tyr

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195	200	205
Asp Gln Leu Met Asp Tyr Thr Leu Ser Gln Tyr Asp Tyr Leu Gln Gly		
210	215	220
Gln Glu Gly Glu Ser Thr Ala Ser Gly Ala Ile Ile Pro Arg Val Met		
225	230	235
Glu Ile Asp Pro Ser Asp Asp Ile Arg Lys Glu Leu Glu Arg Ile Met		
245	250	255
Glu Glu Arg Leu Thr Gly Arg Thr Tyr Leu Tyr His Leu Lys Ser Asp		
260	265	270
Leu Ala Glu Ala Thr His Gln Leu Ile Ile Tyr Glu Glu Asn Arg Ile		
275	280	285
Asn Ser Ile Leu His Lys Pro Glu Arg Glu Met Asn		
290	295	300

<210> 6859

<211> 133

<212> PRT

<213> B.fragilis

<400> 6859

Ile Leu Ile Ile Asn Glu Ser Asn Lys Met Lys Lys Val Ile Cys Ser		
1	5	10
Glu Lys Ala Pro Gly Ala Ile Gly Pro Tyr Ser Gln Ala Ile Glu Ala		
20	25	30
Asn Gly Met Val Phe Val Ser Gly Gln Leu Pro Ile Asp Ala Ala Thr		
35	40	45
Gly Val Met Pro Asp Gly Val Glu Ala Gln Ala Arg Gln Ser Leu Glu		
50	55	60
Asn Ile Lys His Ile Leu Glu Ala Ala Gly Leu Thr Met Ala Asp Ile		
65	70	75
Val Lys Thr Thr Val Phe Leu Gln Asp Met Ser Leu Phe Ala Gly Met		
85	90	95
Asn Gly Val Tyr Ala Thr Tyr Phe Asp Gly Ala Phe Pro Ala Arg Ser		
100	105	110
Ala Val Ala Val Lys Ala Leu Pro Lys Asp Ala Leu Val Glu Ile Glu		
115	120	125
Cys Ile Ala Ala Arg		
130		

<210> 6860

<211> 294

<212> PRT

<213> B.fragilis

<400> 6860

Lys Thr Ile Ile Met Ala Val Asp Lys Thr Pro Ser Gln Val Ala Thr		
1	5	10
Ser Ala Leu Gln Ala Ile Pro Phe Gly Ser Ile Ile Gly Gly Pro Leu		
20	25	30
Lys Ala Cys Val Glu Ala Gln Ala Leu Ala Ala Lys Thr Thr Trp Glu		
35	40	45
Phe Ile Gln Asn Val Gly Ile Asn Val Asn Pro Glu Thr Gly Glu Lys		
50	55	60
Thr Ala Val Asn Val Ser Phe Ser Phe Ile Gln Gly Gly Arg Leu Val		
65	70	75
Gln Leu Asn Ile Pro Leu Leu Thr Ile Val Pro Ile Pro Tyr Ile Ala		
85	90	95
Ile Arg Glu Val Asp Ile Asn Phe Lys Ala Asn Ile Ser Ala Ser Ser		
100	105	110

Ser Thr Thr Ala Glu Thr Asn Glu Ser Val Ser Lys Asp Ala Ala Leu
 115 120 125
 Lys Ala Ser Ala Ser Met Arg Phe Gly Cys Phe Lys Met Asn Ala Asp
 130 135 140
 Met Asn Ala Ser Tyr Ser Ser Lys Lys Asp Ser Lys Ala Thr Ser Asp
 145 150 155 160
 Ser Lys Tyr Ser Val Glu Tyr Thr Met Asp Val Ala Val Lys Ala Gly
 165 170 175
 Gln Asp Ser Met Pro Ala Gly Leu Ser Lys Ile Leu Glu Leu Leu Gly
 180 185 190
 Asn Ser Leu Asp Val Ser Asp Pro Ala Gly Thr Leu Glu Val Asn Ser
 195 200 205
 Asn Leu Leu Leu Ile Glu Asn Gly Lys Glu Thr Val Arg Leu Ile Ala
 210 215 220
 Thr Tyr Lys Asp Gly Ser Gly Leu Leu Ala Pro Asp Lys Leu Thr Ile
 225 230 235 240
 Thr Gly Thr Gly Ala Asn Ala Ala Asp Phe Lys Val Ser Gly Asp Ser
 245 250 255
 Lys Ile Ile Asp Leu Pro Glu Gly Thr Tyr Thr Ile Lys Ala Glu Gly
 260 265 270
 Ser Lys Lys Glu Val Ile Val Glu Val Lys Lys Asp Thr Ala Thr Pro
 275 280 285
 Gln Glu Glu Val Thr Glu
 290

<210> 6861
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 6861
 Phe Asn Tyr Met Glu Asn Leu Glu Thr Ala Leu Leu Leu Met Val Val
 1 5 10 15
 Gly Met Ala Thr Val Phe Ala Ile Leu Leu Ile Val Ile Tyr Leu Gly
 20 25 30
 Lys Leu Leu Ile Ser Leu Val Asn Lys Tyr Ala Pro Glu Gln Leu
 35 40 45
 Pro Ala Lys Gln Gly Thr Gln Ser Pro Val Pro Ile Pro Gly Asn Ile
 50 55 60
 Val Ala Thr Ile Thr Ala Ala Val Asn Val Val Thr Gln Gly Lys Gly
 65 70 75 80
 Lys Val Ala Lys Ile Glu Lys Ile
 85

<210> 6862
 <211> 392
 <212> PRT
 <213> B.fragilis

<400> 6862
 Gln Lys Asn Ile Gln Met Lys Ile Gly Ile Ile Thr Ile Cys Lys Val
 1 5 10 15
 Asn Asn Tyr Gly Ala Glu Leu Gln Ala Phe Ala Thr Gln Lys Lys Leu
 20 25 30
 Glu Gln Met Gly His Asn Ala Glu Ile Ile Asn Tyr Leu Tyr Tyr Lys
 35 40 45
 Asp Trp His Phe Lys Asp Thr Pro Leu Ser Gln Pro Phe Val Pro Leu
 50 55 60
 Asp Met Lys Gly Lys Leu Ser Tyr Trp Ile Lys Tyr Arg Leu Met Ser

65		70		75		80									
Trp	Val	Val	Asn	Lys	Val	Leu	Pro	Ile	Phe	Asn	Gly	Asn	Met	Arg	Arg
			85						90					95	
Arg	Leu	His	Asn	Tyr	Gln	Ser	Phe	Ile	Asp	Ser	Glu	Arg	Phe	Ser	Ala
			100					105					110		
Gln	Tyr	Lys	Ser	Met	Asp	Glu	Leu	Tyr	Lys	Thr	Tyr	Pro	Lys	Tyr	Asp
		115					120					125			
Ile	Tyr	Met	Val	Gly	Ser	Asp	Gln	Val	Trp	Asn	Pro	Ser	Ala	Ser	Ser
	130					135					140				
Ser	Ile	Glu	Pro	Tyr	Phe	Leu	Thr	Phe	Ala	Pro	Lys	Asn	Ala	Pro	Lys
145					150					155				160	
Val	Thr	Tyr	Ala	Ser	Ser	Phe	Gly	Val	Ala	Ser	Ile	Ala	Pro	Asn	Leu
			165						170					175	
Ser	Lys	Arg	Tyr	Ala	Lys	Leu	Leu	Asn	Asn	Leu	Asp	Thr	Ile	Ala	Val
		180						185					190		
Arg	Glu	Gln	Ser	Gly	Val	Glu	Leu	Val	Lys	Gln	Leu	Thr	Gly	Arg	Glu
		195					200					205			
Ala	Lys	Leu	Val	Val	Asp	Pro	Thr	Leu	Leu	Leu	Ser	Lys	Ala	Asp	Trp
	210					215					220				
Glu	Pro	Tyr	Met	Lys	Pro	Leu	Ala	Lys	Ile	Ser	Thr	Gln	Tyr	Ile	Leu
225					230					235				240	
Ile	Tyr	Gln	Leu	Phe	Pro	Ser	Gln	Thr	Val	Ile	Asp	Val	Ala	Leu	Lys
			245						250					255	
Ile	Gly	Lys	Glu	Lys	Asn	Leu	Pro	Val	Tyr	Asn	Ile	Cys	Lys	Arg	Ala
		260						265					270		
Tyr	Gly	Met	Lys	Lys	Ile	Val	Gly	Ile	Asn	Asn	Ile	Leu	Asp	Ala	Gly
		275					280					285			
Pro	Ser	Glu	Phe	Leu	Trp	Leu	Ile	Ala	Asn	Ala	Thr	Cys	Met	Val	Thr
	290					295					300				
Asn	Ser	Phe	His	Gly	Thr	Ala	Phe	Ser	Val	Asn	Phe	Ala	Thr	Pro	Phe
305					310					315				320	
Cys	Cys	Val	Leu	Asn	Arg	Lys	Arg	Lys	Asn	Asn	Gly	Arg	Met	Ile	Ser
			325						330					335	
Phe	Leu	Asp	Lys	Val	Asp	Met	Ser	Asn	Arg	Ile	Leu	Tyr	Glu	Asp	Ser
			340					345					350		
Ile	Ala	Glu	Leu	Asn	Val	Met	Thr	Ala	Cys	Ser	Glu	Val	Thr	Asn	Asn
	355						360					365			
His	Leu	Arg	Leu	Leu	Val	Asn	Asn	Ser	Ile	Asp	Tyr	Leu	Lys	Ser	Ile
	370					375					380				
Ile	Glu	Asn	Lys	Glu	Gln	Lys	Cys								
385					390										

<210> 6863

<211> 191

<212> PRT

<213> B.fragilis

<400> 6863

His	Lys	Asn	Ile	Met	Ile	Gln	Ser	Lys	Lys	Asp	Leu	Lys	Tyr	Tyr	Leu
1				5					10					15	
Ser	Glu	Asp	Leu	Lys	Arg	Phe	Asn	Asn	His	Lys	Pro	Asn	Ile	Lys	Asp
		20						25					30		
Trp	Leu	Leu	His	Asn	Glu	Ile	Trp	Tyr	Ile	Phe	His	Tyr	Ile	Arg	His
	35						40					45			
Leu	Arg	Tyr	Val	Glu	Tyr	Tyr	Lys	Asn	Thr	Asn	Lys	Asn	Lys	Ile	Leu
	50					55				60					
Phe	Phe	Tyr	His	Phe	Phe	Arg	Tyr	Lys	Arg	Leu	Gly	Phe	Lys	Leu	Lys
65					70				75					80	
Ile	Thr	Ile	Tyr	Pro	Asn	Thr	Ile	Gly	Ala	Gly	Leu	Arg	Ile	Tyr	His

Glu Phe Arg Asp Lys Glu Lys Lys Ser Val Leu Ile Gln Arg Val Ser
 50 55 60
 Gln Gln Met Glu Glu Ile Ala Tyr Gln Gln Lys Asp Ile Ser Glu Lys
 65 70 75 80
 Arg Arg Gln Glu Ala Val Ala Gln Thr Gln Lys Ala Asn Arg Met Gln
 85 90 95
 Gln Gln Ala Glu Leu Ala Arg Glu Arg Ala Leu Ala Ala Gln Leu Glu
 100 105 110
 Ala Glu Lys Ala Tyr Arg Met Ala Asp Glu Gln Lys Asn Leu Ala Met
 115 120 125
 Glu Arg Gln Leu Gln Ala Glu Gln Ser Lys Arg Val Ala Asp Thr Leu
 130 135 140
 Ala Phe Leu Ala Leu Gly Arg Ser Leu Gly Thr Leu Ser Val Thr Gln
 145 150 155 160
 Tyr Arg Ser Gly Asn Met Glu Leu Ala Ser Leu Leu Ala Tyr Thr Ala
 165 170 175
 Trp Trp Phe Thr Lys Arg Tyr Asp Gly Asp Val Tyr His Pro Ala Val
 180 185 190
 Phe Asn Ala Leu Ser Leu Ser Cys Arg Gln Asp Gln Leu Trp Phe Gly
 195 200 205
 His Lys Gly Ala Val Thr Gly Ile Lys Leu Leu Ser Glu Gly Glu Glu
 210 215 220
 Lys Ala Arg Ala Gly Arg Asn Pro Leu Pro Gly Leu Val Thr Val Gly
 225 230 235 240
 Lys Tyr Gly Glu Met Ile Arg Trp Lys Ser Glu Asn Gly Gln Thr Tyr
 245 250 255
 Thr Ser Glu Leu Leu Leu Asn Asp Pro Cys Tyr Asp Phe Arg Asp Val
 260 265 270
 Leu Leu Arg Ser Asp Ser Gln Met Tyr Ala Leu Ser Tyr Cys Gly Gln
 275 280 285
 Leu Ile Ser Thr Asp Ser Ala Gly Ile Val Thr Arg Phe Leu Pro Lys
 290 295 300
 Gly Glu Tyr Arg Gln Leu Ile Ser Ile Ala Ser Asn Leu Val Leu Ala
 305 310 315 320
 Val Ser Thr Thr Gly Ile Tyr Ser Phe Asp Cys Val Asn His Glu Ile
 325 330 335
 Gln Pro Tyr Phe Gln Pro Glu His Ser Ile Thr Cys Val Gly Gln Met
 340 345 350
 Glu Gly Tyr Leu Tyr Val Phe Phe Lys Asn Gly Thr Val Ala Leu Leu
 355 360 365
 Ser Ser Asp Gly Thr Phe Leu Arg Phe Ile Asp Ser Leu Pro Glu Asn
 370 375 380
 Ser Val Val Thr Ala Phe Cys Pro Leu Thr Asn Glu Arg Tyr Ala Ile
 385 390 395 400
 Gly Cys Arg Glu Gly Val Ile Leu Ile Cys Asp Lys Asn Gly Asn Ile
 405 410 415
 Arg Gln Lys Leu Ile Gly His Gln Ala Ala Val Thr Ala Ile Ser Arg
 420 425 430
 Lys Gly Asn Lys Leu Phe Ser Ser Ser Tyr Asp Cys Thr Leu Arg Leu
 435 440 445
 Trp Asp Leu Arg Lys Gly Lys Thr Glu Ser Ala Val Ile Val Thr Ser
 450 455 460
 Pro Gly Trp Ile His Thr Phe Cys Phe His Pro Asp Gly Thr Ser Val
 465 470 475 480
 Phe Ile Gly Asp Glu Gln Gly Arg Leu Tyr Arg Val Pro Val Ser Pro
 485 490 495
 Asp His Met Ala Thr Val Val Arg Gln Gly Leu Gln Arg Asp Phe Thr
 500 505 510
 Arg Glu Glu Trp Glu Tyr Tyr Ile Gly Lys Gln Ile Pro Phe Glu Ser

515 520 525
 Tyr Tyr Leu Lys Thr Tyr Gln Pro
 530 535

<210> 6866
 <211> 225
 <212> PRT
 <213> B.fragilis

<400> 6866
 Leu Phe Leu Ile Asn Gly Lys Val Leu Met Arg Phe Ile Leu Phe Ile
 1 5 10 15
 Ile Phe Ser Leu Cys Leu Pro Leu Val Met Gln Gly Gln Glu Gln Asn
 20 25 30
 Val Trp Thr Gln Asn Asp Ser Leu Lys Leu Lys Lys Ile Leu Val Gly
 35 40 45
 Gln Ala Glu Ile Arg Ile Asn Arg Glu Ala Leu Arg Glu Leu Asp Arg
 50 55 60
 Ala Phe Ser Ser Pro Arg Arg Leu Phe Lys Ser Gln Ser Arg Ser Ala
 65 70 75 80
 Ile Leu Leu Ile Lys Asp Phe Leu Leu Tyr Arg Pro Asn Val Phe Thr
 85 90 95
 Gly Lys Tyr His Ile Ser Thr Phe Lys Val Asn Glu Leu Asn Ile Arg
 100 105 110
 Gln Asp Ser Leu Phe Met Asn Val His Met Leu Gly Asn Lys Gln Leu
 115 120 125
 Phe Val Lys Ser Gln Leu Asp Ile Gly Asp Pro Arg Val Leu Ile Lys
 130 135 140
 Arg Lys Thr Asp Ile Gln Phe Lys Phe Thr Asp His Leu Ala Tyr Arg
 145 150 155 160
 Val Tyr Gly Gly Tyr Thr Ile Asp Lys Asn Arg Thr Ile Ile Leu Pro
 165 170 175
 Thr Thr Ala Thr Pro Tyr Tyr Val Gly Thr Gly Phe Ser Tyr Ser Leu
 180 185 190
 Asn Lys Lys Leu Gln Leu Lys Thr Gly Ile Glu Tyr Gln Tyr Asn Val
 195 200 205
 Ile Tyr Lys Arg Trp Glu Trp Val Trp Asn Ser Gly Ile Arg Phe Asn
 210 215 220
 Phe
 225

<210> 6867
 <211> 813
 <212> PRT
 <213> B.fragilis

<400> 6867
 Ile Lys Leu Ile Met Lys Thr Asn Ile Gln Glu Asn Leu Ser Arg Ser
 1 5 10 15
 Leu Ser Thr Trp Gly Asp Lys Pro Ala Val Val Ala Lys Asp Gly Thr
 20 25 30
 Val Ser Tyr Gln Met Leu Glu Arg Tyr Ser Ala Asn Ile Ala Gln Ser
 35 40 45
 Ile Arg Gln Arg Leu Ser Val Thr Asp Pro Ser Gly Leu Arg Asn Ile
 50 55 60
 Cys Ile Gly Val Cys Met Glu Arg Asn Lys Thr Leu Val Pro Ala Ile
 65 70 75 80
 Leu Ala Ile Phe Arg Leu Gly Ala Thr Tyr Leu Pro Ile Asp Pro Ser
 85 90 95

565 570 575
 Arg His Glu Pro Ile Tyr Trp Tyr Arg Gln Gln Asn Leu Lys Lys Pro
 580 585 590
 Val Ile Ile Leu Val Cys Gly Ser Ala Tyr Phe Asn His Leu Tyr Phe
 595 600 605
 Asn Leu Ala Asp Arg Leu Tyr Pro Lys Tyr Asp Phe Leu Val Val Asp
 610 615 620
 Ala Ile Tyr Asp His Phe Asn Lys Val Ala Thr Asp Ile Pro Glu Leu
 625 630 635 640
 Leu Glu Tyr Tyr Val Arg Thr Val Gln Pro Met Ile Arg Glu Arg Thr
 645 650 655
 Val Tyr Ala Leu Thr Gly Phe Cys Met Gly Ala Glu Leu Ala Val Gly
 660 665 670
 Leu Ala Glu Met Leu His Arg Ser Met Gly Ile Met Pro Lys Val Phe
 675 680 685
 Ala Leu Asp Gly Gln Ala Trp Gln Asn Pro Ala Leu Cys Gln Asn Tyr
 690 695 700
 Pro Leu Leu Val Phe Pro Gly Asp Thr Asp Glu Met Val Arg Glu Arg
 705 710 715 720
 Asn Glu Ile Ile Asn Ile Tyr Phe Arg Thr Thr Pro Asn Leu Ile Tyr
 725 730 735
 Gln Gly Glu Val Ile Val Leu Leu Ser Gly Leu Phe His Gln Gln Ala
 740 745 750
 Gly Leu Ser Pro Glu Glu Ser Trp Thr Glu Glu Ser Tyr Arg Ile Phe
 755 760 765
 Arg Thr Glu Tyr Asp Asn Cys Glu Arg Leu Trp Asn Lys Tyr Tyr Pro
 770 775 780
 Asn Ala Pro Val Leu Arg Leu Pro Thr Asp His Trp His Phe Leu Glu
 785 790 795 800
 Gly Glu Ser Leu Glu Gln Leu Ile Thr Val Phe Leu Lys
 805 810

<210> 6868
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 6868
 His Gln Ser Met Arg Leu Lys Glu Ala Val Leu Thr Val Cys Val Met
 1 5 10 15
 Met Ile Thr Ser Gly Ile Lys Ala Gln Tyr Thr Met Gly Thr Thr Gly
 20 25 30
 Met Met Asn Ile Pro Thr Ala Glu Met Gln Gln Thr Gly Thr Phe Met
 35 40 45
 Ile Gly Gly Asn Tyr Leu Pro Glu Glu Leu Asn Pro Phe Lys Tyr Asn
 50 55 60
 Ser Gly Asn Tyr Phe Val Asn Ile Thr Phe Phe Ser Phe Leu Glu Leu
 65 70 75 80
 Asn Tyr Arg Cys Ile Leu Leu Lys Ser Asp Tyr Met Ala Lys Lys Pro
 85 90 95
 Lys Phe Asn Gln Gln Asp Arg Ser Leu Ser Val Arg Leu Arg Pro Leu
 100 105 110
 Lys Glu Gly Lys Tyr Trp Pro Ala Ile Val Ile Gly Ser Asn Asp Pro
 115 120 125
 Phe Lys Asp Lys Gly Tyr Asn Tyr Phe Ala Ser Val Tyr Gly Val Ala
 130 135 140
 Thr Lys Ser Phe Met Ile Gly Glu His Arg Leu Ala Ala Thr Ala Gly
 145 150 155 160
 Tyr Tyr Tyr Pro Leu Ser Lys Asp Lys Tyr Thr Leu Gln Asp Gly Ile

Gln Gly Asp Trp Arg Phe Tyr Lys His Tyr Lys Lys Trp Gln Trp Lys
 85 90 95
 Thr Tyr Glu Met Ala Gln Glu Ile Ile Val Lys Gln His Ile Asp Ile
 100 105 110
 Val His Gln Leu Asn Met Ile Gly Phe Arg Glu Pro Gly Tyr Leu Trp
 115 120 125
 Lys Leu Asp Lys Pro Phe Val Trp Gly Pro Val Asp Ala Lys Glu Lys
 130 135 140
 Phe Pro Thr Ala Tyr Leu Arg Asp Ala Gly Ile Lys Ala Asn Leu Phe
 145 150 155 160
 Ile Arg Leu Lys Asn His Ile Thr Gly Leu Gln Leu Arg Tyr Ser Gln
 165 170 175
 Arg Val Lys Lys Ala Val Lys Lys Ala Ser Val Val Thr Ser Ala Ser
 180 185 190
 Ser Glu Ser Gln Lys Ser Phe Lys Lys Tyr Phe His Ile Asp Ala Pro
 195 200 205
 Leu Leu Asn Glu Thr Gly Cys Tyr Pro Lys Thr Thr Ile Ile Asn Ser
 210 215 220
 Thr Lys Glu Lys Gly Asp Leu Asn Leu Leu Trp Val Gly Lys Leu Asp
 225 230 235 240
 Phe Arg Lys Gln Leu Pro Leu Ala Ile Lys Ala Ile Ala Arg Leu Ala
 245 250 255
 Asn Pro His Ile Lys Leu His Ile Val Gly Gly Asn Asn Asn Ser Tyr
 260 265 270
 Gln Lys Leu Ala Met Glu Leu Asn Ile Ser His Gln Cys Ile Trp His
 275 280 285
 Gly Val Ile Ser His Asn Glu Val Gln Glu Leu Met Gln Lys Val Asp
 290 295 300
 Ile Phe Phe Phe Thr Ser Ile Ala Glu Gly Thr Pro His Val Val Leu
 305 310 315 320
 Glu Ala Ile Asn Asn Asn Leu Pro Val Ile Cys Phe Asp Ile Cys Gly
 325 330 335
 His Gly Asp Ser Ile Asn Glu Gln Val Gly Ile Lys Ile Pro Leu Ser
 340 345 350
 Thr Pro Gln Gln Ser Ile Asn Asp Phe Ala Glu Lys Ile Thr Tyr Leu
 355 360 365
 Phe Asn His Arg Asp Val Leu Lys Gln Met Ser Glu Asn Cys Arg Val
 370 375 380
 Arg Gln Glu Glu Leu Ser Trp Asp Asn Lys Ala Lys Gln Met Val Ser
 385 390 395 400
 Leu Tyr Lys Lys Val Leu Ser Gln Glu
 405

<210> 6871

<211> 255

<212> PRT

<213> B.fragilis

<400> 6871

Leu Lys Glu Met Lys Ile Arg Ile Leu Gly Ser Gly Thr Ser Thr Gly
 1 5 10 15
 Val Pro Glu Ile Gly Cys Thr Cys Ala Val Cys Thr Ser Lys Asp Pro
 20 25 30
 Arg Asp Cys Arg Leu Arg Thr Ser Ala Leu Val Tyr Thr Asp Asp Thr
 35 40 45
 Thr Ile Leu Leu Asp Cys Gly Pro Asp Phe Arg Glu Gln Met Leu Arg
 50 55 60
 Val Pro Phe Gly Lys Ile Asp Ala Val Leu Ile Ser His Glu His Tyr
 65 70 75 80

Asp His Val Gly Gly Leu Asp Asp Leu Arg Pro Phe Cys Arg Phe Gly
 85 90 95
 Glu Val Pro Ile Tyr Ala Glu Thr Tyr Thr Ala Glu Arg Leu Arg Ser
 100 105 110
 Arg Met Pro Tyr Cys Phe Val Glu His Ser Tyr Pro Gly Val Pro Asn
 115 120 125
 Ile Pro Leu Arg Glu Ile Glu Pro Asn Arg Pro Phe Leu Val Asn His
 130 135 140
 Thr Glu Val Leu Pro Leu Arg Val Met His Gly Lys Leu Pro Ile Leu
 145 150 155 160
 Gly Tyr Arg Ile Gly Lys Leu Gly Tyr Ile Thr Asp Met Leu Thr Met
 165 170 175
 Pro Asp Glu Ser Phe Glu Gln Leu Gln Gly Ile Glu Val Leu Val Met
 180 185 190
 Asn Ala Leu Arg Ile Ala Pro His Asn Thr His Gln Ser Leu Ser Glu
 195 200 205
 Ala Leu Glu Ala Val Lys Arg Ile Gly Ala Lys Glu Asn Leu Leu Ile
 210 215 220
 His Met Ser His His Ile Gly Leu Gln Ala Asp Val Glu Lys Gln Leu
 225 230 235 240
 Pro Pro His Val His Phe Ala Phe Asp Gly Leu Glu Leu Glu Cys
 245 250 255

<210> 6872
 <211> 620
 <212> PRT
 <213> B.fragilis

<400> 6872
 Ser Tyr Arg Ile Ile Pro Lys Thr Glu Met Lys Arg Glu Val Lys Phe
 1 5 10 15
 Ser Leu Val Phe Arg Asp Met Trp Gln Ser Ala Gly Lys Tyr Val Pro
 20 25 30
 Arg Val Asp Gln Leu Val Lys Val Ala Pro Ala Ile Val Glu Met Gly
 35 40 45
 Cys Phe Ala Arg Val Glu Thr Asn Gly Gly Gly Phe Glu Gln Val Asn
 50 55 60
 Leu Leu Phe Gly Glu Asn Pro Asn Lys Ser Val Arg Ala Trp Thr Lys
 65 70 75 80
 Pro Phe His Glu Ala Gly Ile Gln Thr His Met Leu Asp Arg Ala Leu
 85 90 95
 Asn Gly Leu Arg Met Ser Pro Val Pro Ala Asp Val Arg Lys Leu Phe
 100 105 110
 Tyr Lys Val Lys Lys Ala Gln Gly Thr Asp Ile Thr Arg Thr Phe Cys
 115 120 125
 Gly Leu Asn Asp Val Arg Asn Ile Ala Pro Ser Ile Thr Tyr Ala Lys
 130 135 140
 Asp Ala Gly Met Ile Ser Gln Cys Ser Leu Cys Ile Thr His Ser Pro
 145 150 155 160
 Ile His Thr Val Glu Tyr Tyr Thr Asn Met Ala Leu Glu Leu Ile Lys
 165 170 175
 Leu Gly Ala Asp Glu Ile Cys Ile Lys Asp Met Ala Gly Ile Gly Arg
 180 185 190
 Pro Val Ser Leu Gly Lys Ile Val Ala Asn Ile Lys Ala Val His Pro
 195 200 205
 Asp Ile Pro Ile Gln Tyr His Ser His Ala Gly Pro Gly Phe Asn Met
 210 215 220
 Ala Ser Ile Leu Glu Val Cys Glu Ala Gly Cys Asp Tyr Val Asp Val
 225 230 235 240

Gly Met Glu Pro Leu Ser Trp Gly Thr Gly His Ala Asp Leu Leu Ser
 245 250 255
 Val Gln Ala Met Leu Lys Asp Ala Gly Phe Gln Val Pro Glu Ile Asn
 260 265 270
 Met Glu Ala Tyr Met Lys Val Arg Ala Leu Ile Gln Glu Phe Met Asp
 275 280 285
 Asp Phe Leu Gly Leu Tyr Ile Ser Pro Lys Asn Arg Leu Met Asn Ser
 290 295 300
 Leu Leu Ile Ala Pro Gly Leu Pro Gly Gly Met Met Gly Ser Leu Met
 305 310 315 320
 Ala Asp Leu Glu Thr Asn Leu Glu Ser Ile Asn Lys Tyr Lys Ala Lys
 325 330 335
 His Asn Leu Pro Phe Met Thr Gln Asp Gln Leu Leu Ile Lys Leu Phe
 340 345 350
 Asn Glu Val Ala Tyr Val Trp Pro Arg Val Gly Tyr Pro Pro Leu Val
 355 360 365
 Thr Pro Phe Ser Gln Tyr Val Lys Asn Leu Ser Met Met Asn Val Ile
 370 375 380
 Ala Met Glu Lys Gly Lys Glu Arg Trp Gly Met Ile Ala Asp Asp Ile
 385 390 395 400
 Trp Asp Met Ile Leu Gly Lys Ala Gly Arg Leu Pro Gly Lys Leu Ala
 405 410 415
 Pro Glu Ile Ile Glu Lys Ala Glu Arg Glu Gly Arg Lys Phe Phe Glu
 420 425 430
 Gly Asn Pro Gln Asp Asn Tyr Pro Asp Asp Leu Glu Lys Tyr Arg Lys
 435 440 445
 Leu Met Lys Glu Lys Lys Trp Glu Thr Gly Glu Asp Asp Glu Glu Leu
 450 455 460
 Phe Glu Tyr Ala Met His Pro Ala Gln Tyr Glu Ala Tyr Lys Ser Gly
 465 470 475 480
 Lys Ala Lys Glu Asp Val Leu Ala Asp Val Ala Lys Arg Arg Ala Glu
 485 490 495
 Lys Glu Gln Val Pro Thr Glu Glu Ala Lys Pro Lys Thr Leu Thr Val
 500 505 510
 Gln Val Asp Gly Gln Ala Tyr Arg Val Thr Val Ala Tyr Gly Asp Thr
 515 520 525
 Glu Leu Pro Val Ala Pro Ala Ser Gln Pro Ser Ala Ala Gly Glu
 530 535 540
 Gly Lys Glu Val Leu Ser Pro Leu Glu Gly Lys Phe Phe Leu Val Lys
 545 550 555 560
 Asn Ala Gln Glu Thr Pro Leu Lys Val Gly Asp Ala Val Lys Glu Gly
 565 570 575
 Asp Val Leu Cys Tyr Val Glu Ala Met Lys Thr Tyr Asn Ala Ile Arg
 580 585 590
 Ala Glu Phe Gly Gly Thr Val Thr Ala Ile Ser Ala Asn Pro Gly Asp
 595 600 605
 Thr Val Ser Glu Asp Asp Val Leu Met Lys Ile Gly
 610 615 620

<210> 6873

<211> 265

<212> PRT

<213> B.fragilis

<400> 6873

Trp Asp Arg Met Pro Ile Asn Ser Pro Gln Ser Ala Thr Leu Gly Asp
 1 5 10 15
 Asn Ala Val Arg Val Glu Met Glu Ala Gln Ile Leu Leu Gly Gly Ile
 20 25 30

Asn Arg Ser Val Phe Ala Thr Ala Asp Asp Glu Leu Arg Pro Val Met
 35 40 45
 Asn Gly Ile Tyr Phe Asp Ile Thr Thr Glu Asp Ile Thr Met Val Ala
 50 55 60
 Ser Asp Gly His Lys Leu Val Arg Cys Lys Thr Leu Ala Ala Arg Gly
 65 70 75 80
 Asn Glu Arg Ala Ala Phe Ile Leu Pro Lys Lys Pro Ala Thr Leu Leu
 85 90 95
 Lys Asn Leu Leu Pro Lys Glu Ser Gly Met Val Val Ile Glu Phe Asp
 100 105 110
 Glu Arg Asn Ala Val Phe Thr Leu Glu Ser Tyr Arg Met Val Cys Arg
 115 120 125
 Leu Ile Glu Gly Arg Tyr Pro Asn Tyr Asn Ser Val Ile Pro Gln Asn
 130 135 140
 Asn Pro His Lys Val Thr Val Asp Arg Met Gln Leu Met Gly Ala Leu
 145 150 155 160
 Arg Arg Val Ser Ile Phe Ser Ser Gln Ala Ser Ser Leu Ile Lys Leu
 165 170 175
 Arg Met Gln Glu Asn Gln Ile Val Val Ser Ala Gln Asp Ile Asp Phe
 180 185 190
 Ser Thr Ser Ala Glu Glu Thr Gln Val Cys Gln Tyr Ala Gly Ala Ala
 195 200 205
 Met Ser Ile Gly Phe Lys Ser Thr Phe Leu Ile Asp Ile Leu Asn Asn
 210 215 220
 Ile Ser Ala Asp Glu Val Val Ile Glu Leu Ala Asp Pro Ser Arg Ala
 225 230 235 240
 Gly Val Ile Ile Pro Val Glu Gln Glu Glu Asn Glu Asp Leu Leu Met
 245 250 255
 Leu Leu Met Pro Met Met Leu Asn Asp
 260 265

<210> 6874

<211> 282

<212> PRT

<213> B.fragilis

<400> 6874

Asn Arg Leu Ile Met Glu Lys Asn Ile Ser Gln Glu Lys Arg Ile Glu
 1 5 10 15
 Glu Leu Glu Ala Arg Leu Lys Glu Gln Glu Lys Leu Gly Ser Leu Gly
 20 25 30
 Leu Leu Ser Ala Gly Ile Ala His Glu Ile Gln Asn Pro Leu Asn Phe
 35 40 45
 Val Ile Asn Phe Ser Lys Leu Ser Gly Gln Leu Leu Ala Asp Leu Ala
 50 55 60
 Asp Arg Val Asp Glu Ala Lys Ala Arg Ile Pro Glu Ala Glu Leu Glu
 65 70 75 80
 Asp Ile Lys Asp Ile Leu Ser Gly Leu Arg Glu Asn Val Asp Lys Ile
 85 90 95
 Lys Glu His Gly Asp Arg Ala Ile Ser Ile Ile Arg Gly Ile Leu Leu
 100 105 110
 Tyr Ser Arg Gly Lys Glu Asp Glu Phe Met Pro Thr Gln Ile Gln Lys
 115 120 125
 Leu Thr Lys Glu Tyr Val Trp Leu Ala Tyr His Ala Met Arg Ala Asn
 130 135 140
 Tyr Lys Asn Phe Asn Ile Ala Ile Arg Glu Asp Tyr Ala Lys Asp Ile
 145 150 155 160
 Pro Ser Ile Arg Leu Ile Pro Gln Asp Phe Ser Arg Ala Val Leu Asn
 165 170 175

Val Met Asn Asn Ala Cys Tyr Ala Val Trp Lys Lys Trp Gln Asn Ala
 180 185 190
 Pro Glu Gly Tyr Ser Pro Glu Ile Met Val Thr Leu Glu Lys Leu Asp
 195 200 205
 Lys Arg Val Val Leu Ser Ile Arg Asp Asn Gly Glu Gly Met Ser Pro
 210 215 220
 Glu Val Lys Arg Lys Leu Phe Asp Ser Phe Phe Thr Thr Lys Pro Val
 225 230 235 240
 Gly Gln Gly Thr Gly Leu Gly Met Ala Ile Val Arg Asp Ile Ile Glu
 245 250 255
 Asn Lys His His Gly Lys Val Leu Phe Asp Ser Val Leu His Glu Tyr
 260 265 270
 Thr Cys Phe Arg Phe Ile Ile Pro Ile Ala
 275 280

<210> 6875

<211> 440

<212> PRT

<213> B.fragilis

<400> 6875

Thr Lys Gln Ile Asn Trp Tyr Val Ala Thr Leu Ile Ser Ser Leu Phe
 1 5 10 15
 Ala Ile Lys Leu Lys Lys Tyr Met Arg Thr Cys Ser Pro Arg Leu Ala
 20 25 30
 Lys Glu Lys Tyr Cys Thr Gly Cys Met Ala Cys Ser Asp Ala Cys Thr
 35 40 45
 His Asp Ala Ile Lys Ile Val Glu Lys Asn Cys Met Pro Phe Val Lys
 50 55 60
 Val Asp Thr His Lys Cys Met Asn Cys His Leu Cys Glu Lys Ala Cys
 65 70 75 80
 Pro Ile Ile Thr Pro Val Lys Lys Asn Arg Ala Glu Lys Met Asn Val
 85 90 95
 Tyr Gly Gly Trp Ala Asn Asp Glu Gln Thr Arg Ile Asp Ala Ala Ser
 100 105 110
 Gly Gly Gly Phe Ser Gly Leu Ala Gln Ser Phe Phe His Leu His Lys
 115 120 125
 Glu Asp Lys Val Ala Val Ile Gly Ala Thr Leu Ala Asn Asn Arg Val
 130 135 140
 Tyr His Gln Leu Ile Glu Gln Glu Lys Asp Ile Val Leu Leu Thr Asn
 145 150 155 160
 Ser Lys Tyr Ile Gln Ser Asp Thr Gln Gly Ile Tyr Lys Glu Val Ile
 165 170 175
 Glu Arg Leu Lys Thr Gly Tyr Trp Ile Leu Phe Ser Gly Cys Pro Cys
 180 185 190
 Gln Ile Ala Gly Leu Tyr Gly Phe Leu Gly Lys Lys Arg Asp Ser Glu
 195 200 205
 Arg Leu Ile Thr Ile Glu Val Val Cys His Gly Ile Ala Ser Tyr Glu
 210 215 220
 Ala Leu Asp Leu His Leu Lys Tyr Tyr Asn Ser Ser Arg Ile Tyr Arg
 225 230 235 240
 Phe Arg Asp Lys Arg His Gly Thr Gln Asp Trp Lys Gln Ser Gln Cys
 245 250 255
 Thr Thr Ile Glu Gln Asn Gly Glu Glu Ile Lys Leu Lys Arg Lys Asp
 260 265 270
 Asp Met Phe Tyr Ala Ile Tyr Ala Gly Trp Met Leu Asp Arg Lys Ser
 275 280 285
 Cys Ser Asn Cys Gln Phe Ala Glu Ile Asn Arg Val Ala Asp Ile Thr
 290 295 300

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Ile Ala Asp Phe Trp Gly Leu Gln Val Pro Asp Tyr Tyr Lys Gln Gly
305          310          315          320
Val Ser Leu Ile Ile Ala Asn Asn Asn Lys Ala Asp Thr Met Ile Lys
          325          330          335
Ala Ala Asp Ala Ile Tyr Thr Phe Lys Glu Ser Leu Arg Thr Ala Ile
          340          345          350
Asn Gly Asn Pro His Leu Phe Thr Gly Tyr Lys Leu Ile Gln Phe His
          355          360          365
Pro Ile Val Met Trp Pro Asp Phe Phe Arg Lys Ile Leu Pro Lys Arg
          370          375          380
Ile Arg Phe Lys Thr Leu Thr Asn Arg Met Pro Tyr Lys Leu Phe Trp
385          390          395          400
Ala Leu Tyr Lys Leu Gly Thr Ile Tyr Leu Val Lys Tyr Gln Lys Lys
          405          410          415
Gln Leu Ile Ser Lys Phe Gln Lys Asp Asp Asn Leu Leu Lys Leu Leu
          420          425          430
Asn Asn Ala Asn Arg Gly Gly Gly
          435          440

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<210> 6876

<211> 332

<212> PRT

<213> B.fragilis

<400> 6876

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Pro Pro Lys Met Asn Asn Thr Asn Pro Leu Val Ser Ile Ile Val Pro
1          5          10          15
Val Tyr Lys Val Glu Arg Tyr Ile His Arg Ser Ile Asp Ser Leu Leu
          20          25          30
Arg Gln Thr Tyr Asn Asn Leu Glu Ile Ile Leu Val Asp Asp Gly Ser
          35          40          45
Pro Asp Asn Cys Pro Phe Ile Cys Asp Lys Tyr Ala Met Gln Asp Asn
          50          55          60
Arg Ile Arg Val Ile His Lys Ser Asn Gly Gly Leu Ser Asp Ala Arg
65          70          75          80
Asn Ala Ala Leu Asn Val Met Thr Gly Gln Tyr Val Thr Phe Val Asp
          85          90          95
Ser Asp Asp Tyr Ile Ala Asp Asn Met Ile Glu Lys Phe Ile Glu Thr
          100          105          110
Val Lys Leu Tyr Gln Cys Asn Met Val Val Ala Gly Met Asn Ile Ile
          115          120          125
Asp Lys Asn Asn Gln Ile Tyr Asp Tyr Arg Arg Thr Leu Thr Ser Thr
          130          135          140
Leu Ser Thr Gly Ile Asp Ile Thr Arg Lys Leu Leu Lys Asp Val Phe
145          150          155          160
Pro Phe Asn Phe Val Cys Ala Lys Ile Phe Glu Ser Ser Leu Phe Glu
          165          170          175
Glu Ile Arg Phe Pro Val Gly Arg His Tyr Glu Asp Thr Ala Thr Thr
          180          185          190
Tyr Lys Leu Thr His Lys Cys Glu Arg Ile Tyr Cys Ile Ala Asp Cys
          195          200          205
Leu Tyr Phe Tyr Glu Leu Glu Arg Glu Gly Asn Ile Thr Ser Glu Leu
          210          215          220
Asn Thr Ser Lys Ala Ile Lys Ser Tyr Ile Asp Gly Cys Leu Asn Ser
225          230          235          240
Gln Glu Gln Ile Phe Phe Cys Gln Lys His Lys Asp Phe Ser Asp Leu
          245          250          255
Leu Pro Val Leu Thr Lys Arg Leu Gln Leu Trp Ala Leu Leu Ala Ile
          260          265          270

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Gln Ser Ala Ile Ser Leu Gly Tyr Lys Glu Tyr Met Phe Tyr Tyr His
 275 280 285
 Gln Ile Arg Ile Tyr Ile Arg Ser Leu Ser Tyr Thr Gln Arg Met Thr
 290 295 300
 His Leu Gln Ile Ala Leu Thr Phe Pro Ile Ile Tyr Tyr Ser Leu Tyr
 305 310 315 320
 Pro Leu Leu Ser Arg Leu Lys Lys Met Tyr Lys Asn
 325 330

<210> 6877

<211> 78

<212> PRT

<213> B.fragilis

<400> 6877

Met Asn Asn Val Ala Glu His Ala Arg Glu Gln Lys Ala Gly Met Lys
 1 5 10 15
 Cys Pro Gln Cys Gly Ala Phe Ile Glu Thr Ser Ile Phe Glu Leu Leu
 20 25 30
 Thr Ser Asn Ala Leu Gln Cys Pro Ser Cys His Leu Arg Leu Asn Ile
 35 40 45
 Asp Arg Met Lys Ser Lys Ala Ala Phe Asp Ala Leu Arg Lys Val Gln
 50 55 60
 Asn Ala Gln Glu Asn Leu Glu Arg Lys Ser Lys Phe Asn Gly
 65 70 75

<210> 6878

<211> 405

<212> PRT

<213> B.fragilis

<400> 6878

Ile Arg Tyr Val Ser Ile Tyr Gly Thr Ile Leu Tyr Leu Asn Ile Ser
 1 5 10 15
 Val Asn Val Ile Thr Leu Thr Ser Lys Tyr Asp Cys Cys Gly Cys Thr
 20 25 30
 Ala Cys Thr Ser Ala Cys Asn Arg Gly Ala Ile Ile Met Gln Glu Asp
 35 40 45
 Glu Gln Gly Phe Leu Tyr Pro His Ile Asn Thr Thr Gln Cys Ile Asp
 50 55 60
 Cys Gly Leu Cys Asn Lys Val Cys Pro Val Phe Arg Tyr Asp Val Ile
 65 70 75 80
 Ser Asn Lys Lys Asn Val Asn Pro His Ile Leu Ala Leu His His His
 85 90 95
 Asn Glu Lys Thr Trp Ile Ser Ser Ser Ser Gly Gly Val Phe Ala Ser
 100 105 110
 Leu Thr Asp Tyr Ala Leu Arg Gln Ala Gly Val Ile Phe Gly Ala Ile
 115 120 125
 Tyr Asp Asp Asn Phe Val Val Val His Arg Arg Ala Glu Thr Gln Glu
 130 135 140
 Asp Thr Leu Lys Phe Arg Gly Ser Lys Tyr Val Gln Ser Asn Leu Thr
 145 150 155 160
 Gly Ile Tyr Gln Gln Val Lys Phe Tyr Leu Gln Glu Gln Arg Phe Val
 165 170 175
 Leu Phe Ser Gly Thr Pro Cys Gln Val Glu Gly Leu Lys Gly Tyr Leu
 180 185 190
 Gln Arg Ser Tyr Asp Asn Leu Leu Thr Val Asp Ile Leu Cys His Gly
 195 200 205
 Val Pro Ser Pro Arg Val Phe His Asp Tyr Leu Asn Phe Ile Arg Gln

210	215	220
Asn Ser Asp Phe His Phe Thr Gly Ile Phe Met Lys Asp Lys Thr Phe		
225	230	235
Gly Trp Gly Tyr Gln Asn Ser Arg Leu Phe Phe Gly Lys Asn Ala Ser		240
	245	250
Gln Phe Asn Thr Val Leu Ser Arg Leu Trp Asn Asp Ile Phe Tyr Ser		255
	260	265
His Leu Thr Thr Arg Pro Ser Cys His Ala Cys Arg Phe Thr Asn Tyr		270
	275	280
Leu Arg Pro Gly Asp Ile Thr Ile Gly Asp Phe Trp Gly Ile Glu Lys		285
	290	295
His His Pro Gln Phe Thr Asp Ser Arg Gly Ile Ser Leu Ile Met Leu		300
305	310	315
Asn Asn Thr Lys Ala Glu Ile Val Trp Asn His Ile Lys Asp Asp Phe		320
	325	330
Asn Tyr Leu Glu Ser Asn Ile Lys Glu Cys Ile Gln Pro Asn Leu Lys		335
	340	345
Tyr Pro Val Pro Glu Pro Val Asn Lys Ala Thr Phe Trp Gln Asp Tyr		350
	355	360
Ala Ser Met Pro Phe Phe Gln Ile Met Asn Lys Tyr Tyr Arg Ile Thr		365
370	375	380
His Gln Asp Leu Leu Lys Asn Arg Phe Tyr Met Ile Leu Leu Thr Leu		385
385	390	395
Lys Lys Arg Phe Thr		400
	405	

<210> 6879

<211> 307

<212> PRT

<213> B.fragilis

<400> 6879

Leu Ser Val Val Arg Asp Leu Leu Thr Val Pro Leu Lys Asn Ala Lys	
1	5
Leu Glu Ala Ala Gly Ala Gly Ala Ile Val Leu Lys Ser Leu Phe Glu	10
	15
	20
Glu Gln Ile Met Met Glu Ala Asp Arg Leu Arg Asn Pro Ser Tyr Tyr	25
	30
	35
Pro Glu Gly Ser Asp Tyr Leu Ala Glu Tyr Ile Arg Asn His Lys Leu	40
	45
	50
Thr Glu Tyr Leu Glu Leu Ile Lys Glu Ser Lys Lys Ile Cys Thr Ile	55
	60
65	70
Pro Val Ile Ala Ser Ile Asn Cys Tyr Thr Asp Ala Glu Trp Val Asp	75
	80
	85
Phe Ala Lys Gln Ile Glu Glu Ala Gly Ala Asp Ala Leu Glu Ile Asn	90
	95
	100
Ile Leu Ala Leu Gln Ser Asp Ile Gln Tyr Lys Tyr Gly Ser Phe Glu	105
	110
	115
Gln Arg His Ile Asp Ile Leu Ser His Ile Lys Lys Thr Ile Arg Ile	120
	125
	130
Pro Val Ile Met Lys Leu Gly Ser Asn Phe Thr Asn Pro Val Ala Leu	135
	140
145	150
Ile Asp Gln Leu Tyr Ala Asn Gly Ala Ala Val Val Leu Phe Asn	155
	160
	165
Arg Phe Tyr Gln Pro Asp Ile Asp Val Glu Lys Met Glu His Thr Ser	170
	175
	180
Gly Asp Val Phe Ser Asn Ala Ser Asp Leu Ser Thr Thr Leu Arg Trp	185
	190
	195
Ile Gly Ile Ser Ser Ser Leu Val Ser Lys Ile Asp Tyr Ala Ala Ser	200
	205

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      210                      215                      220
Gly Gly Ile His Lys Pro Asp Gly Ile Val Lys Ala Ile Leu Ala Gly
225                      230                      235                      240
Ala Ser Ala Ile Glu Ile Cys Ser Ala Ile Tyr Gln Asn Thr Asn Leu
      245                      250                      255
Phe Val Gly Glu Met Asn Arg Phe Leu Ser Ala Trp Met Glu Arg Lys
      260                      265                      270
Gly Phe Lys His Ile Ser Gln Phe Lys Gly Lys Leu Asn Ala Lys Asp
      275                      280                      285
Val Glu Gly Ile Asn Met Phe Glu Arg Thr Gln Phe Leu Lys Tyr Phe
      290                      295                      300
Ser Glu Lys
305

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<210> 6880
 <211> 61
 <212> PRT
 <213> B.fragilis

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<400> 6880
Asn Arg Pro Val Tyr Gln Cys Phe Tyr Glu Ile Thr Tyr Thr Cys Lys
1                      5                      10                      15
Val Ile Leu Asn Asp Val Lys Tyr Tyr Gly Val Arg Arg Asp Lys Ser
      20                      25                      30
Lys Phe His Val Leu Asn Tyr Asn Ile Trp Leu Leu Val Tyr Leu Leu
      35                      40                      45
Tyr Glu Ser Lys Glu Met Gln Tyr Met Ile Asp Tyr Ser
      50                      55                      60

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<210> 6881
 <211> 120
 <212> PRT
 <213> B.fragilis

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<400> 6881
Asn Leu Lys Val Leu Tyr Met Gly Lys Asn Arg Asn His Tyr Ser Phe
1                      5                      10                      15
Phe Leu Tyr Phe Val Phe Ile Ile Phe Val Leu Leu Gly Cys Arg Pro
      20                      25                      30
Val Arg Val Gln Met Pro Asp Gly Met Tyr Gly Arg Trp Lys Ser Ser
      35                      40                      45
Ala Gly Arg Pro Asp Ile Thr Leu Gly Thr Asp Ser Ile Gly Ser Phe
      50                      55                      60
Ala Ile Val His His Arg Ile Tyr Asp Gly Lys Ile Cys Pro Val Arg
      65                      70                      75                      80
Tyr Pro Leu His Leu Asn Ser Pro Thr Lys Gly Tyr Ile Arg Ala Glu
      85                      90                      95
Gly Cys Ile Leu Phe Tyr Tyr Asp Ser Leu Lys Cys Val Leu Tyr Phe
      100                      105                      110
Ser Pro Gly Gly Asp Tyr Thr Gln
      115                      120

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<210> 6882
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6882
 Ile Asn Glu Val Thr Asp Ser Leu Lys Lys Pro Leu Thr Ile Ile Thr

1		5		10		15									
Met	Ala	Asp	Leu	Lys	Thr	Thr	Phe	Ala	Gly	Leu	Thr	Leu	Lys	Asn	Pro
		20						25					30		
Val	Ile	Ile	Ser	Ser	Ser	Gly	Leu	Thr	Asn	Ser	Ala	Ala	Lys	Lys	Arg
		35					40					45			
Lys	Ala	Gly	Ser	Cys	Arg	Cys	Arg	Ser	His	Cys	Pro	Glu	Ile	Thr	Ile
	50					55					60				

<210> 6883

<211> 371

<212> PRT

<213> B.fragilis

<400> 6883

Ala	Ser	Ile	Phe	Pro	Lys	Asp	Ile	Phe	Leu	Val	Met	Lys	Val	Ser	Ile
1				5					10				15		
Ile	Val	Pro	Cys	Tyr	Ser	Val	Ala	Ser	Lys	Leu	Pro	Arg	Cys	Val	His
		20						25				30			
Asn	Leu	Leu	Ala	Gln	Thr	Phe	Thr	Asp	Trp	Glu	Leu	Ile	Leu	Ile	Asp
		35					40					45			
Asp	Gly	Ser	Thr	Asp	Asn	Thr	Trp	Asp	Ile	Cys	Asn	Ser	Phe	Thr	Lys
	50					55				60					
Asn	Asn	Ala	His	Ile	His	Ala	Val	His	Lys	Glu	Asn	Gly	Gly	Val	Ser
65				70					75					80	
Ser	Ala	Arg	Asn	Thr	Gly	Ile	Glu	Ile	Ala	Lys	Gly	Glu	Phe	Ile	Thr
			85					90					95		
Phe	Ile	Asp	Ser	Asp	Asp	Tyr	Val	Lys	Pro	Asp	Tyr	Leu	Gln	Lys	Leu
		100						105					110		
Val	Glu	Gly	Gln	Glu	Ala	Asp	Leu	Val	Leu	Cys	Gly	Phe	Arg	Ser	Ser
	115						120					125			
Thr	Gly	Ile	Asp	Phe	Thr	Pro	Glu	Pro	Gln	Tyr	Leu	Ile	Gly	Asp	Asp
	130					135					140				
Leu	Ser	Lys	Asn	Ile	Gln	Ala	Ile	Val	Glu	Asn	Asp	Tyr	Leu	Leu	Tyr
	145			150						155				160	
Ser	Pro	Trp	Cys	Lys	Leu	Phe	Arg	Arg	Asp	Ile	Ile	Gln	Lys	His	Gln
			165					170					175		
His	Arg	Phe	Asp	Pro	Glu	Ile	Arg	Leu	Gly	Glu	Asp	Thr	Ile	Phe	Cys
		180					185					190			
Tyr	Lys	Tyr	Leu	Leu	Tyr	Cys	Ser	Ser	Ile	Lys	Val	Val	Ala	Ser	Asn
	195					200					205				
Ser	Tyr	Phe	Tyr	Asp	Gly	Val	Trp	Gly	Gly	Tyr	Lys	Lys	Tyr	Val	Leu
	210				215					220					
Thr	Arg	Gln	Glu	Val	Glu	Tyr	Leu	Asp	Lys	Ala	Glu	Ile	Thr	Thr	Leu
	225			230						235				240	
His	Asp	Ile	Asn	Gln	His	Phe	Asn	Cys	Arg	Ile	Asp	Leu	Thr	Tyr	Arg
			245					250					255		
Gly	Tyr	His	Val	Ala	Met	Leu	Lys	Gly	Leu	Tyr	Glu	Lys	Phe	Arg	Asp
		260						265					270		
Tyr	Asp	Thr	Phe	Glu	Met	Tyr	Thr	Arg	Thr	His	Asp	Val	Leu	Pro	Pro
	275					280					285				
Glu	His	Phe	Phe	Ala	Asn	His	Lys	Leu	Ser	Tyr	Ile	Phe	Trp	Gly	Ile
	290				295					300					
Val	Glu	Leu	Glu	Thr	Leu	Tyr	Val	Asp	Lys	Glu	Tyr	Cys	Ala	Gly	Lys
	305			310						315				320	
Leu	Phe	Met	Gln	Arg	Leu	His	His	Phe	Phe	Thr	Ile	Pro	Thr	Asn	Gln
			325					330					335		
Leu	Leu	Ser	Tyr	Ser	Tyr	Lys	Met	Arg	Leu	Ile	His	Tyr	Leu	Val	Lys
		340					345				350				
Ser	Lys	His	Tyr	Thr	Met	Ala	His	Val	Leu	Leu	Ile	Phe	Leu	Ser	Ile

355
Leu Lys His
370

360

365

<210> 6884
<211> 465
<212> PRT
<213> B.fragilis

<400> 6884

Leu	Gln	Gln	Phe	Ile	Thr	Val	Val	Val	Asn	Trp	Leu	Phe	Asp	Cys	Lys
1				5					10					15	
Tyr	Gln	His	Leu	Asn	Leu	Arg	Ile	Met	Gly	Thr	Lys	Lys	Asn	Phe	Val
			20					25					30		
Leu	Asp	Thr	Asn	Val	Ile	Leu	His	Asp	Tyr	Asn	Cys	Leu	Lys	Asn	Phe
		35					40					45			
Gln	Glu	Asn	Asp	Ile	Tyr	Leu	Pro	Ile	Val	Val	Leu	Glu	Glu	Leu	Asp
	50					55					60				
Lys	Phe	Lys	Lys	Gly	Asn	Glu	Gln	Ile	Asn	Tyr	Asn	Ala	Arg	Glu	Phe
65				70					75					80	
Val	Arg	Glu	Leu	Asp	Leu	Ile	Thr	Asp	Asp	Ser	Leu	Phe	Thr	His	Gly
				85					90					95	
Ala	Pro	Leu	Gly	Glu	Gly	Leu	Gly	Lys	Leu	Phe	Ile	Val	Thr	Gly	Asp
			100					105						110	
Ser	Glu	Ala	Pro	Lys	Val	His	Glu	Ser	Phe	Pro	Ala	Arg	Lys	Pro	Asp
		115					120						125		
His	Gln	Ile	Leu	Ala	Val	Ala	Glu	Tyr	Leu	Ala	Arg	Lys	Tyr	Pro	Lys
	130					135						140			
Met	Lys	Asn	Ile	Leu	Val	Thr	Lys	Asp	Val	Asn	Leu	Arg	Met	Lys	Ala
145				150						155				160	
Arg	Ser	Ile	Gly	Ile	Leu	Cys	Glu	Asp	Tyr	Ile	Thr	Asp	Lys	Val	Val
				165					170					175	
Asn	Val	Asp	Ile	Phe	Glu	Lys	Ser	Asn	Glu	Val	Phe	Glu	Asn	Ile	Glu
			180					185					190		
Pro	Asp	Leu	Ile	Asp	Arg	Ile	Tyr	Ser	Ser	Arg	Glu	Gly	Leu	Asp	Ile
	195						200						205		
Ser	Glu	Phe	Asp	Phe	Lys	Asp	Ile	Ile	Arg	Pro	Asn	Glu	Cys	Phe	Ile
	210					215					220				
Leu	Lys	Ser	Asp	Arg	Ser	Ser	Val	Leu	Ala	Arg	Tyr	Asn	Pro	Phe	Thr
225				230						235				240	
His	Thr	Val	Cys	Arg	Val	Asn	Lys	Thr	Lys	Asn	Tyr	Gly	Ile	Glu	Pro
				245						250				255	
Arg	Asn	Ala	Glu	Gln	Ser	Phe	Ala	Phe	Glu	Ile	Leu	Asn	Asp	Pro	Asp
			260					265						270	
Ile	Lys	Leu	Val	Ala	Leu	Thr	Gly	Lys	Ala	Gly	Thr	Gly	Lys	Thr	Leu
		275					280						285		
Leu	Ala	Leu	Ala	Ala	Ala	Leu	Gly	Lys	Leu	Thr	Glu	Tyr	Lys	Gln	Ile
	290					295							300		
Leu	Leu	Ala	Arg	Pro	Ile	Val	Ala	Leu	Ser	Asn	Lys	Asp	Leu	Gly	Phe
305					310					315				320	
Leu	Pro	Gly	Asp	Ala	Thr	Glu	Lys	Val	Ala	Pro	Tyr	Met	Gln	Pro	Leu
				325					330					335	
Phe	Asp	Asn	Leu	Asn	Val	Ile	Lys	Arg	Gln	Phe	Ala	Ser	Asn	Ser	Thr
			340					345					350		
Glu	Val	Lys	Arg	Leu	Glu	Asp	Met	Gln	Lys	Ser	Glu	Gln	Leu	Val	Ile
		355					360						365		
Glu	Ala	Leu	Ala	Phe	Ile	Arg	Gly	Arg	Ser	Leu	Ser	Glu	Thr	Tyr	Cys
	370					375					380				
Ile	Ile	Asp	Glu	Ala	Gln	Asn	Leu	Thr	Pro	His	Glu	Ile	Lys	Thr	Ile

```

385          390          395          400
Ile Thr Arg Ala Gly Glu Gly Thr Lys Met Val Phe Thr Gly Asp Ile
          405          410          415
Gln Gln Ile Asp Gln Pro Tyr Leu Asp Ser Gln Ser Asn Gly Leu Val
          420          425          430
Tyr Met Ile Asp Arg Met Lys Asp Gln Asn Leu Phe Ala His Val Asn
          435          440          445
Leu Val Lys Gly Glu Arg Ser Glu Leu Ser Glu Leu Ala Ser Asn Leu
          450          455          460
Met
465

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<210> 6885
 <211> 70
 <212> PRT
 <213> B.fragilis

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<400> 6885
Pro Gln Phe Ser Asp Pro Ala Lys Pro Gln Phe Tyr Lys Pro Pro Leu
1          5          10          15
Ile His Gln Pro Arg Val Lys Gly Gln Pro Tyr Phe Leu Arg Ser Ser
          20          25          30
Arg Gln Thr Leu Thr Thr Cys Tyr Leu Gly Pro Ile Asn Asn Asn Leu
          35          40          45
Ser Ser Asp Asn Arg Cys Trp His Leu Ser His Asn Trp Lys Thr Thr
          50          55          60
Phe Pro Lys Pro Leu Gly
65          70

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<210> 6886
 <211> 168
 <212> PRT
 <213> B.fragilis

```

<400> 6886
Ser Trp Leu Ser Ser Pro Gln Ser Pro Tyr Ser Val Ser Ser Phe Gly
1          5          10          15
Tyr Ser Pro Phe Asn Leu Thr Asp Ser Asp Met Lys Thr Thr Asp His
          20          25          30
Phe Lys Arg Thr Ile Gln Met Tyr Leu Glu Gln Arg Ala Ala Glu Asp
          35          40          45
Ala Leu Phe Ala Lys Asn Tyr Arg Asn Pro Ala Lys Asn Ile Asp Asp
          50          55          60
Cys Val Thr Tyr Ile Leu Asn Tyr Val Gln Lys Ser Gly Cys Asn Gly
65          70          75          80
Phe Thr Asp Gly Glu Ile Tyr Gly Gln Ala Val His Tyr Tyr Asp Glu
          85          90          95
Asn Glu Ile Glu Val Gly Lys Pro Ile Gln Cys Gln Ile Ala Val Asn
          100          105          110
His Val Val Glu Leu Thr Ala Glu Glu Lys Ala Glu Ala Arg Gln Asn
          115          120          125
Ala Ile Arg Gln Tyr Gln Asp Gly Leu Met Arg Glu Met Gln Asn Arg
          130          135          140
Asn Lys Pro Arg Thr Ala Thr Lys Ala Thr Val Gln Glu Val Gln Gln
145          150          155          160
Pro Ser Leu Phe Asp Leu Gly Leu
          165

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<210> 6887

<211> 214
 <212> PRT
 <213> B.fragilis

<400> 6887

```

Val Glu Thr Ser Asn Met Gly Lys Gln Lys Phe Tyr Val Val Trp Asp
1      5      10      15
Gly Val Thr Pro Gly Ile Tyr Thr Ser Trp Thr Glu Cys Gln Leu Gln
      20      25      30
Val Lys Gly Tyr Asp Ser Ala Lys Tyr Lys Ser Phe Asp Asn Arg Glu
      35      40      45
Glu Ala Glu Arg Ala Phe Ala Ala Ser Pro Tyr Ala Tyr Ile Gly Lys
      50      55      60
Asn Ala Lys Lys Lys Ile Thr Gly Pro Ser Thr Glu Met Leu Pro Ala
65      70      75      80
Ala Val Ile Glu Asn Ser Leu Ala Val Asp Ala Ala Cys Ser Gly Asn
      85      90      95
Pro Gly Pro Met Glu Tyr Arg Gly Val His Val Ala Ser Arg Gln Glu
      100     105     110
Ile Phe His Phe Gly Pro Met Lys Gly Thr Asn Asn Ile Gly Glu Phe
      115     120     125
Leu Ala Leu Val His Gly Leu Ala Leu Leu Lys Gln Lys Gly Phe Asp
      130     135     140
Met Pro Ile Tyr Ser Asp Ser Ala Asn Ala Ile Ser Trp Val Lys Gln
145     150     155     160
Lys Lys Cys Lys Thr Lys Leu Ser Arg Thr Ala Glu Thr Glu Ala Leu
      165     170     175
Phe Val Leu Ile Glu Arg Ala Glu Lys Trp Leu Lys Glu Asn Lys Tyr
      180     185     190
Thr Thr Pro Ile Leu Lys Trp Glu Thr Arg Glu Trp Gly Glu Ile Pro
      195     200     205
Ala Asp Phe Gly Arg Lys
      210

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<210> 6888
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 6888

```

Lys Asn Gln Ser Asn Lys Glu Arg Ser Ile Phe Met Lys Lys Ser Phe
1      5      10      15
Glu Glu Ala Leu Lys His Arg Arg Thr Tyr Tyr Ser Ile Thr Asn Gln
      20      25      30
Ser Pro Val Ser Asp Glu Glu Ile Glu Arg Ile Val Asn Leu Ala Val
      35      40      45
Thr His Val Pro Ser Ala Phe Asn Ser Gln Ser Thr Arg Val Val Leu
      50      55      60
Leu Leu Gly Glu Asn His Lys Lys Leu Trp His Ile Val Lys Glu Thr
65      70      75      80
Leu Arg Lys Ile Val Pro Pro Glu Val Phe Lys Thr Thr Glu Ala Lys
      85      90      95
Ile Asp Asn Ser Phe Ala Ser Gly Tyr Gly Thr Val Leu Phe Phe Glu
      100     105     110
Asp Gln Ser Val Val Lys Gly Leu Gln Glu Ala Phe Ser Ser Tyr Lys
      115     120     125
Asp Asn Phe Pro Gly Trp Ser Leu Gln Thr Ser Ala Met His Gln Leu
      130     135     140
Ala Val Trp Thr Met Leu Glu Asp Val Gly Phe Gly Ala Ser Leu Gln

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145		150		155		160									
His	Tyr	Asn	Pro	Leu	Ile	Asp	Glu	Glu	Val	Arg	His	Thr	Trp	His	Leu
				165					170					175	
Pro	Glu	Glu	Trp	His	Leu	Ile	Ala	Glu	Met	Pro	Phe	Gly	Leu	Pro	Val
			180					185					190		
Gln	Gly	Pro	Gly	Asp	Lys	Asp	Phe	Lys	Asp	Leu	Asp	Thr	Arg	Val	Lys
		195					200					205			
Val	Phe	Lys													
	210														

<210> 6889

<211> 406

<212> PRT

<213> B.fragilis

<400> 6889

Asp	Cys	Val	Ser	Met	Asn	Val	Ser	Gly	Ala	Thr	Ala	Leu	Trp	Thr	Arg
1				5					10					15	
Leu	Ser	Val	Lys	Thr	Glu	Phe	Gly	Thr	Lys	Asp	Tyr	Val	Val	Asp	Val
			20					25					30		
Lys	Lys	Asp	Leu	Lys	Asn	Ile	Ser	Ser	Asp	Phe	Asn	Glu	Arg	Ser	Leu
		35					40					45			
His	Ser	Val	Val	Cys	Met	Glu	Lys	Gln	Leu	Ser	Ala	Asp	Thr	Leu	Asn
		50				55					60				
Arg	Ile	Trp	Ala	Asp	Ser	Leu	Arg	Met	Arg	His	Ile	Val	Ala	Lys	Thr
65					70					75					80
Ser	Val	Gln	Val	Val	Ser	Ala	Asp	Ser	Ser	Lys	Cys	Ile	Arg	Ser	Glu
				85					90					95	
Gly	Ser	Cys	Asp	Asn	Asn	Cys	Phe	Val	Ser	Pro	Ile	Trp	Ile	Ala	Tyr
			100					105					110		
Val	Gly	Asn	Glu	Cys	Glu	Val	Glu	Val	Ala	Gly	Phe	Leu	Ser	Ser	Thr
		115					120					125			
Cys	Trp	Ser	Val	Ile	Arg	Tyr	Ser	Ser	Ser	Ser	Phe	Val	Leu	Ile	Val
	130					135					140				
Gly	Val	Thr	Phe	Ile	Leu	Phe	Ala	Phe	Phe	Tyr	Tyr	Val	Tyr	Lys	Val
145					150					155					160
Lys	Lys	His	Leu	Ser	Asp	Ser	Glu	Val	Glu	Glu	Glu	Leu	Leu	Lys	Glu
				165					170					175	
Arg	Leu	Glu	Lys	Glu	Arg	Glu	Arg	Tyr	Gln	Asp	Leu	Glu	Glu	Lys	Arg
			180					185						190	
Arg	Gln	Tyr	Glu	Gln	Gln	Leu	Asn	Leu	Leu	Gln	Gln	Glu	Glu	Lys	Met
		195					200					205			
Arg	Ile	Arg	Glu	Leu	Ser	Asp	Leu	Arg	Glu	Lys	His	Lys	Gln	Lys	Glu
						215					220				
Ala	Gln	Ile	Glu	Val	Leu	Ser	Val	Glu	Lys	Lys	Arg	Ser	Lys	Glu	Gln
225					230					235					240
Gln	Ser	Ile	Leu	Glu	Lys	Glu	Cys	Gln	Glu	Gly	Met	Leu	Gln	Ile	Thr
				245					250					255	
Met	Leu	Ser	Asp	Lys	Leu	Glu	Lys	Glu	Lys	Ile	Asp	Arg	Gly	Glu	Leu
			260					265					270		
Gln	Gln	Lys	Leu	Ala	Ala	Cys	Glu	Leu	Gln	Ile	Ala	Glu	Leu	Arg	Lys
			275				280					285			
Ile	Lys	Glu	Met	Leu	Gly	Glu	Glu	Leu	Val	Ile	Tyr	Lys	Leu	Cys	Ser
			290			295					300				
Gly	Leu	Thr	Phe	Asp	Pro	Arg	Asn	His	Ile	Leu	Asp	Cys	Ala	Gly	Asn
305					310					315					320
Arg	Ile	Lys	Leu	Asp	Ala	Gln	Gly	Ser	Arg	Leu	Leu	Leu	Leu	Phe	Leu
				325					330					335	
Glu	Ala	Ser	Glu	Asn	Lys	Leu	Ser	Tyr	Glu	Glu	Leu	Leu	Glu	Met	Met

340	345	350
Trp Ala Asp Arg Arg Lys Asp Lys Asn Arg Leu Trp Thr Ala Val Ser		
355	360	365
Arg Leu Arg Lys Ala Leu Ala Pro Thr Arg Val Ile Ile Lys Val Lys		
370	375	380
Asn Glu Gly Gly Tyr Gln Leu Val Leu Pro Lys Glu Ser Asp Asp Phe		
385	390	395
Ser Gln Arg Glu Leu Phe		400
405		

<210> 6890

<211> 714

<212> PRT

<213> B.fragilis

<400> 6890

His Pro Val Ser Thr Thr Lys Ser Lys Val Thr Ile His Lys Lys Val		
1	5	10
Ile Ser Met Lys Thr Ile Ile Ala Glu Lys Pro Ser Val Ala Arg Glu		
20	25	30
Ile Ala Arg Ile Val Gly Ala Thr Lys Arg Glu Glu Gly Tyr Phe Glu		
35	40	45
Gly Gly Asp Cys Ala Val Thr Trp Ala Phe Gly His Leu Val Gln Leu		
50	55	60
Ala Met Pro Asp Gly Tyr Gly Ile Arg Gly Phe Val Arg Asp Asn Leu		
65	70	75
Pro Val Ile Pro Glu Thr Phe Thr Leu Ile Pro Arg Gln Glu Lys Thr		
85	90	95
Glu Lys Gly Tyr Lys Pro Asp Ser Gly Val Val Ser Gln Ile Lys Ile		
100	105	110
Ile Ala Arg Leu Phe Lys Glu Ser Glu Gln Ile Ile Val Ala Thr Asp		
115	120	125
Ala Gly Arg Glu Gly Glu Leu Ile Phe Arg Tyr Leu Tyr His Tyr Ile		
130	135	140
Gly Cys Thr Thr Pro Phe Val Arg Leu Trp Ile Ser Ser Leu Thr Asp		
145	150	155
Lys Ala Ile Arg Glu Gly Leu Arg Asn Leu Glu Ala Gly Ser Lys Tyr		
165	170	175
Asp Asn Leu Tyr Leu Thr Ala Lys Ala Arg Ser Glu Ser Asp Trp Leu		
180	185	190
Val Gly Ile Asn Gly Thr Gln Ala Leu Ser Ile Ala Ala Gly His Gly		
195	200	205
Thr Tyr Ser Val Gly Arg Val Gln Thr Pro Thr Leu Ala Met Val Cys		
210	215	220
Val Arg Tyr Trp Glu Asn Arg Arg Phe Thr Val Glu Pro Phe Trp Gln		
225	230	235
Leu His Ile Ala Thr Asp Gly Gly Asn Gly Glu Val Val Lys Phe Ser		
245	250	255
Ser Ser Glu Lys Trp Lys Glu Lys Glu Pro Ala Thr Glu Leu Tyr Asn		
260	265	270
Lys Val Lys Glu Ala Gly Thr Ala Thr Val Thr Lys Ala Glu Arg Lys		
275	280	285
Glu Lys Thr Glu Asp Thr Pro Leu Leu Tyr Asp Leu Thr Thr Leu Gln		
290	295	300
Lys Glu Ala Asn Ala Lys His Gly Phe Thr Ala Glu Gln Thr Leu Glu		
305	310	315
Ile Ala Gln Lys Leu Tyr Glu Lys Lys Leu Ile Thr Tyr Pro Arg Thr		
325	330	335
Gly Ser Arg Tyr Ile Pro Glu Asp Val Phe Val Glu Ile Pro Lys Leu		


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<210> 6891
<211> 159
<212> PRT
<213> B.fragilis
```

<400> 6891
Phe Thr Asn Pro Leu Asn Ser Lys Val Met Asn Asn Lys Lys Lys Asn
1 5 10 15
Glu Gly Gln Thr Asp Phe Ser Tyr Tyr Gly Leu Tyr Leu Leu Asp Tyr
20 25 30
Leu Arg Thr Asn Lys Phe Glu Gln Ala Thr Asp Glu Ala Phe Ile Arg

```

      35              40              45
Glu Arg Ala Asp Arg Ala Ala Gly Thr Tyr Glu Trp Ala Met Leu Glu
  50              55              60
Gly Tyr Pro Ala Asp Gly Ala Gln Glu Leu Ala Met Arg Thr Leu Leu
  65              70              75              80
Glu Gly Leu His Tyr Ser Lys Tyr Ala Ile Leu Arg Glu Val Val Glu
      85              90              95
Asn Glu Phe Ser Asp Asp Val Pro Glu Ala Lys Arg Glu Ser Phe Thr
      100              105              110
Arg Lys Leu Leu Pro Leu Val Gly Asn Val Phe Ser Ile Tyr Asp Leu
      115              120              125
Ser Asp Asp Asn Phe Ala Leu Ser Pro Asp Tyr Asp Leu Leu Tyr Thr
      130              135              140
Glu Leu Thr Gly Ala Val Val Leu Tyr Ile Glu Glu Tyr Gly Val
  145              150              155

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<210> 6892

<211> 110

<212> PRT

<213> B.fragilis

<400> 6892

```

Ser Gly Asp Pro Pro Pro Val Asp Lys Val Ser Gly Met Ala Pro Cys
  1              5              10              15
Arg Ser Gln Phe His Gln Pro Val Phe Ala Val Pro Gly Val Gln Arg
      20              25              30
Glu Gly Leu Pro Tyr Glu Asp Gly Arg Arg Cys Arg Ala Glu Ala Asp
      35              40              45
Thr Tyr Pro Leu Val Asp Ala Asp His Val Lys Asp Asp Glu Gln Asp
      50              55              60
Glu Glu Ser Gln Gln Thr Ser Ala Glu Asp Glu Glu Val Leu Ser Leu
  65              70              75              80
Gln Thr Leu Glu Leu Asp Arg Thr Ala Asp Thr Leu Val Tyr Arg Val
      85              90              95
Phe Ser His Thr Leu Phe Ile Lys Gly Arg Met Ser Ala Gly
      100              105              110

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<210> 6893

<211> 300

<212> PRT

<213> B.fragilis

<400> 6893

```

Asn Met Met Phe Phe Lys Arg Thr Phe Lys Lys Thr Tyr Gln Asn Gln
  1              5              10              15
Arg Met Met Lys Leu Val Arg Met Thr Gly Gly Leu Gly Asn Gln Met
      20              25              30
Phe Ile Tyr Ala Phe Tyr Ile Gln Met Lys Thr Ile Phe Pro Glu Leu
      35              40              45
Arg Ile Asp Met Ser Glu Met Lys Lys Tyr Lys Leu His Asn Gly Tyr
      50              55              60
Glu Leu Glu Asp Val Phe Ser Ile Arg Pro Gln Thr Ile Ser Ala His
  65              70              75              80
Lys Trp Leu Lys Arg Val Ile Val Tyr Ala Phe Phe Ser Ile Ile Arg
      85              90              95
Glu Lys Ser Glu Glu Glu Leu Ser Ile His Lys Tyr Thr Gln His Lys
      100              105              110
Arg Trp Thr Leu Val Tyr Tyr Lys Gly Phe Phe Gln Ser Glu Leu Phe
      115              120              125

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```

Phe Lys Glu Ser Ser Asp Thr Ile Arg Asp Ile Phe Ser Phe Asn Thr
  130                      135                      140
Glu Asn Ala Asn Phe Arg Thr Lys Glu Trp Ala Lys Ile Ile Lys Glu
  145                      150                      155                      160
Gln Arg Ser Ser Val Ser Ile His Ile Arg Arg Gly Asp Tyr Thr Ser
                      165                      170                      175
Ala Lys Asn Lys Ile Lys Tyr Gly Asn Ile Cys Thr Lys Glu Tyr Tyr
                      180                      185                      190
Gln Lys Ala Ile Ser Ile Ile Leu Lys Lys Glu Pro Lys Ala Phe Phe
                      195                      200                      205
His Ile Phe Ser Asp Asp Val Glu Trp Thr Lys Ala His Leu Lys Ile
                      210                      215                      220
His His Leu Pro His Gln Tyr Ile Ser Trp Asn Arg Gly Pro Asp Ser
  225                      230                      235                      240
Trp Gln Asp Met Met Leu Met Ser Leu Cys Arg His Asn Ile Ile Ala
                      245                      250                      255
Asn Ser Ser Phe Ser Trp Trp Gly Ala Trp Leu Asn Ala Tyr Lys Asp
                      260                      265                      270
Lys Thr Val Ile Ala Pro Ser Arg Trp Ser Asn Val Lys Lys Thr Pro
                      275                      280                      285
His Ile Leu Pro Glu Ser Trp Ile Ser Ile Asp Ile
                      290                      295                      300

```

<210> 6894

<211> 300

<212> PRT

<213> B.fragilis

<400> 6894

```

Leu Asn Asn Pro His Thr Thr Met Lys Val Ser Ile Ile Ile Leu Asn
  1                      5                      10                      15
Tyr Asn Thr Ser Arg Leu Thr Leu Asn Cys Ile Asn Ser Ile His Lys
                      20                      25                      30
Tyr Leu Pro Asn Gly Thr Tyr Glu Ile Ile Val Val Asp Asn Ala Ser
                      35                      40                      45
Gln Glu Thr Asp Tyr Gln His Leu Thr Glu Asn Leu Ser Gly Gln Glu
                      50                      55                      60
Ile Thr Ile Ile Arg Asn Lys Ile Asn Ser Gly Phe Gly Ala Gly Asn
  65                      70                      75                      80
Met Val Gly Ala Asn Ile Ala Gln Gly Lys Tyr Leu Cys Phe Leu Asn
                      85                      90                      95
Asn Asp Thr Glu Leu Leu Glu Asp Cys Ile Ser Pro Leu Cys Ser Tyr
                      100                      105                      110
Leu Lys Glu Asn Pro Gln Thr Gly Cys Ile Thr Pro Gln Gln Tyr Asn
                      115                      120                      125
Lys His Leu Lys Ala Val Pro Ser Phe Asn His Pro Ile Gly Ile Leu
                      130                      135                      140
Tyr Glu Ile Leu Gly Asn Asp Ile Pro Glu Arg Leu Cys Pro Ala Arg
  145                      150                      155                      160
Tyr Pro Lys Arg Lys Lys Lys Val Tyr Gln Phe Pro Ile His Ala Ser
                      165                      170                      175
Trp Ile Asn Gly Ala Phe Met Met Phe Pro Ser Glu Val Phe Phe Lys
                      180                      185                      190
Ile Lys Gly Phe Asp Thr Asn Ile Phe Leu Tyr Tyr Glu Glu Tyr Asp
                      195                      200                      205
Ile Cys Thr Arg Leu Ser Tyr His Asn Tyr Gln Ser Thr Val Leu Pro
                      210                      215                      220
Thr Tyr Arg Phe Leu His Leu Gln Gly Glu Ser Thr Lys Val Tyr Ala
  225                      230                      235                      240

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Leu Ala Tyr Lys Glu Arg Phe Ile Ser Lys Leu Tyr Val Tyr Lys Lys
 245 250 255
 His Ser Asn Phe Leu Phe Tyr Ile Ile Tyr Lys Trp Ile Ile Ile Ile
 260 265 270
 Lys Leu Cys Phe His Phe Arg Arg Trp Tyr Ile Leu Pro Thr Ile Ile
 275 280 285
 Leu Gly Lys Gly Leu Ser Gln Ser Met Arg His Lys
 290 295 300

<210> 6895
 <211> 168
 <212> PRT
 <213> B.fragilis

<400> 6895
 Lys Ala Leu Pro Glu Pro Ser Leu Glu Ser Ser Val Asp Cys Thr Leu
 1 5 10 15
 Leu Phe Cys Thr Leu Pro Asn Glu Arg Lys Lys Thr Met Gly Lys Val
 20 25 30
 Gln Ile Leu Ala Val Leu Thr Met Asp Gly Cys His Ser Ser Glu Leu
 35 40 45
 Tyr Gly Lys Ala Tyr Glu Asp Leu Arg Leu Asp Arg Cys Asp Ile Asp
 50 55 60
 Lys Ile Arg Glu Asn Ala Leu Tyr His Val Thr Pro Asp Tyr Ser Ile
 65 70 75 80
 Ser Met Leu Asp Glu Trp Arg Lys Asp Asn Thr Asn Ile Cys Tyr Leu
 85 90 95
 Ala Glu Ala Thr Pro Asp Asn Ser Asp Tyr Ile Asn Gly Leu Leu Arg
 100 105 110
 Met Arg Val Val Asp Glu Ile Ile Leu Tyr Thr Val Pro Phe Ile Ser
 115 120 125
 Gly Thr Gly Arg His Phe Phe Lys Ser Ala Leu Pro Glu Ala Arg Trp
 130 135 140
 Thr Leu Ser Ser Gln Lys Ser Tyr Ser Asn Gly Val Tyr Arg Ser Ile
 145 150 155 160
 Tyr Thr Arg Met Glu Thr Met Lys
 165

<210> 6896
 <211> 1022
 <212> PRT
 <213> B.fragilis

<400> 6896
 Ser Ser Lys Pro Asp Arg Met Lys Glu Ala Leu Thr Thr Asn Gln Val
 1 5 10 15
 Val Ile Val Leu Val Glu His Pro Val Leu Gly Leu Leu Leu Val Pro
 20 25 30
 Tyr Thr Val Gly Arg Ala Leu Asp Asn Thr Leu Glu Val Ile Glu Gln
 35 40 45
 Ala Phe His Ala Ser Pro Asp Ala Leu Lys Lys Met Asn Glu Ala Glu
 50 55 60
 Gln Lys Ala Ile Asp Ile Ala Ser His Tyr Thr Glu Lys Tyr Leu Met
 65 70 75 80
 Gly Val Tyr Ser Arg Glu Lys Thr Val Pro Lys Phe Leu Arg Lys Leu
 85 90 95
 Thr Glu Asp Ser Asn Lys Leu Lys Gln Gln Ile Arg Pro Phe Ile Glu
 100 105 110
 Lys Lys Leu Leu Glu Met Leu Glu Leu Ile Cys Asn Gly Gln Leu Pro

	115		120		125														
Phe	Tyr	Gln	Lys	Pro	Ser	Gly	Ser	Lys	Gln	Leu	Tyr	Glu	His	His	Ala				
130						135					140								
Tyr	Arg	Val	His	Pro	His	Asn	Leu	Lys	Thr	His	Phe	Ser	Phe	Lys	Val				
145					150					155					160				
Thr	Glu	Glu	His	Phe	Ser	Tyr	Gln	Leu	Gln	Cys	Tyr	Asp	Asp	Asp	Thr				
				165					170					175					
Pro	Val	Ser	Leu	Met	Glu	Gln	Lys	Pro	Val	Val	Val	Leu	Thr	Ser	Asn				
			180					185					190						
Pro	Ala	Thr	Leu	Leu	Leu	Gly	Met	Asp	Leu	Tyr	Thr	Phe	Ser	His	Ile				
		195				200						205							
Glu	Ala	Ser	Arg	Leu	Leu	Pro	Phe	Thr	Lys	Lys	Glu	Arg	Ile	Ser	Ala				
	210					215					220								
Asp	Ala	Ser	Leu	Thr	Glu	Lys	Tyr	Ile	Asp	Asn	Ile	Ile	Ile	Pro	Leu				
225					230				235					240					
Ala	Arg	Tyr	His	Asp	Ile	Ser	Ile	Gln	Gly	Leu	Lys	Val	Val	Arg	Glu				
				245				250						255					
Lys	Arg	Pro	Cys	Asn	Ala	Tyr	Leu	Tyr	Leu	Glu	Asp	Thr	Ile	Tyr	Asn				
		260				265						270							
Asp	Thr	Leu	Leu	Arg	Leu	Asp	Phe	Arg	Tyr	Gly	Glu	Gln	Ser	Phe	Ser				
	275					280					285								
Pro	Gln	Pro	Ser	Asp	Glu	Thr	Arg	Lys	Phe	Val	Phe	Arg	Glu	Gln	Glu				
	290				295				300										
Glu	Glu	Glu	Ile	Val	Ile	His	Tyr	Phe	Gln	Arg	Asn	Ser	Thr	Ala	Glu				
305				310					315					320					
Arg	Lys	Ala	Val	His	Leu	Leu	Gln	Lys	Ala	Gly	Leu	Gln	Cys	Ile	Ser				
				325				330						335					
Asp	Ser	His	Phe	Lys	Leu	Ser	Ser	Ala	Ala	Pro	Glu	Lys	Asn	Ile	Thr				
		340					345					350							
Glu	Trp	Ile	Ser	His	His	Arg	Gln	Met	Leu	Leu	Glu	Glu	Phe	Val	Leu				
	355					360					365								
Ser	Ser	Asp	Thr	Gln	Asn	Lys	Pro	Tyr	Tyr	Leu	Pro	Glu	Ile	Arg	Ile				
	370				375					380									
Glu	Gln	Ser	Cys	Glu	Asp	Gly	Pro	Asp	Trp	Phe	Asp	Leu	His	Ile	Thr				
385				390				395						400					
Val	Val	Ile	Gly	Asn	Gln	Arg	Ile	Pro	Phe	Ser	Arg	Phe	Arg	Lys	Asn				
				405				410						415					
Ile	Leu	Glu	Gly	Asn	Arg	Glu	Tyr	Ile	Leu	Pro	Asp	Gly	Arg	Ile	Val				
		420					425					430							
Leu	Leu	Pro	Glu	Glu	Trp	Phe	Ser	Lys	Tyr	Thr	Asn	Leu	Leu	Glu	Ala				
		435				440					445								
Gly	Lys	Glu	Ser	Asp	Lys	Thr	Ile	Arg	Leu	Lys	Arg	Pro	Phe	Ile	Gly				
	450				455			460											
Val	Ile	Glu	Ser	Ile	Leu	Glu	Lys	Asp	Arg	Gln	Ser	Thr	Ser	Ile	Lys				
465				470				475						480					
Thr	Leu	Leu	Ser	Lys	Glu	Ile	Pro	Val	Pro	Ile	Gly	Leu	Lys	Ala	Asn				
			485				490						495						
Leu	Arg	Ser	Tyr	Gln	Gln	Lys	Gly	Phe	Ser	Trp	Leu	Ala	Asn	Leu	Tyr				
		500					505					510							
Leu	Glu	Gly	Phe	Gly	Gly	Cys	Leu	Ala	Asp	Asp	Met	Gly	Leu	Gly	Lys				
	515					520					525								
Thr	Leu	Gln	Thr	Leu	Ala	Leu	Leu	Gln	Tyr	Val	Tyr	Lys	Pro	Gly	Asn				
	530				535			540											
Thr	Thr	Glu	Ala	Ile	Arg	Glu	Thr	Ile	Asp	Leu	Glu	Lys	Ala	Glu	Ser				
545				550				555						560					
Thr	Ser	Asp	Cys	Leu	Pro	Gln	Lys	Gln	Val	Phe	Phe	Asp	Glu	Lys	Gly				
			565				570						575						
Gln	Phe	Ser	Leu	Phe	Pro	Met	Gln	Ser	Lys	Glu	Glu	Glu	Asn	Ser	Arg				
		580					585					590							

Ile Ala Pro Gln Val Pro Gln Ile Pro Glu Pro Val Gln Lys Gln Asn
 595 600 605
 Arg Ile Ser Pro Leu His Gly Thr Leu Ile Val Val Pro Thr Ser Leu
 610 615 620
 Leu His Asn Trp Lys Arg Glu Ala Ser Arg Phe Thr Asn Leu Ser Met
 625 630 635 640
 Met Glu Tyr Asn Gly Ser Ser Pro Asn Glu Ile Thr Arg Leu Lys Lys
 645 650 655
 Tyr Phe Asp Arg Tyr His Leu Ile Phe Thr Thr Tyr Gly Thr Met Arg
 660 665 670
 Asn Asn Ile Ala Thr Leu Ser Gln Tyr Thr Phe Glu Cys Ile Val Leu
 675 680 685
 Asp Glu Ser Gln Asn Ile Lys Asn Ser Glu Ser Leu Thr Phe Arg Ser
 690 695 700
 Ala Ile Gln Leu Arg Ser Lys His Arg Leu Ile Leu Thr Gly Thr Pro
 705 710 715 720
 Ile Glu Asn Ser Leu Lys Asp Leu Trp Ala Gln Phe His Phe Leu Gln
 725 730 735
 Pro Glu Leu Leu Gly Asn Glu Thr Thr Phe Ser Lys His Phe Ile Asn
 740 745 750
 Ala Ile Arg Gln Gly Asp Glu Arg Met Lys Asp Arg Leu Arg Gln Leu
 755 760 765
 Ile Thr Pro Phe Ile Leu Arg Arg Ser Lys Gln Glu Val Thr Pro Glu
 770 775 780
 Leu Pro Ser Leu Thr Glu Glu Val Val Tyr Cys Asp Met Thr Glu Arg
 785 790 795 800
 Gln Asn Glu Leu Tyr Gln His Glu Lys Asn Ser Leu Arg Asn Ile Leu
 805 810 815
 Leu Glu Gln Thr Ala Glu Lys Gly Gln Gln Ser Phe Thr Val Leu Asn
 820 825 830
 Gly Ile Leu Arg Leu Arg Gln Leu Ser Cys His Pro Gln Leu Val Leu
 835 840 845
 Pro Asp Phe Ile Gly Asp Ser Gly Lys Leu Tyr Gln Ile Ile Glu Thr
 850 855 860
 Phe Glu Thr Leu Arg Ser Glu Gly His Lys Val Leu Ile Phe Ser Ser
 865 870 875 880
 Phe Val Lys His Leu Glu Leu Val Ala Gly Glu Phe Arg Lys Arg Lys
 885 890 895
 Trp Asp Tyr Ala Phe Leu Thr Gly Ser Ser Thr Asn Arg Pro Glu Glu
 900 905 910
 Ile Ala Arg Phe Asn Arg Asp Pro Lys Ile Gln Ala Phe Leu Ile Ser
 915 920 925
 Leu Lys Ala Gly Gly Val Gly Leu Asn Leu Thr Gln Ala Asp Tyr Val
 930 935 940
 Phe Ile Ile Asp Pro Trp Trp Asn Pro Ala Ala Glu Ser Gln Ala Ile
 945 950 955 960
 Ala Arg Ala His Arg Ile Gly Gln Asn Asn Gln Val Ile Ala Tyr Arg
 965 970 975
 Phe Ile Thr Gln Gly Ser Ile Glu Glu Lys Ile Ile Gln Leu Gln Glu
 980 985 990
 Glu Lys Arg Lys Leu Ala Glu Thr Phe Ile Thr Asp Thr Glu Gln Leu
 995 1000 1005
 Pro Ala Leu Thr Asn Arg Glu Trp Ala Arg Leu Leu Gly Ser
 1010 1015 1020

<210> 6897

<211> 388

<212> PRT

<213> B.fragilis

<400> 6897

Lys Pro Asp Thr Arg Ser Cys Phe Ile Arg Thr Glu Ile Glu Asn Asn
 1 5 10 15
 Asn Asn Gln Arg Leu Thr Lys Thr Thr Lys Phe Tyr Leu Pro Leu
 20 25 30
 Lys Ser Lys Val Met Arg Lys Val Ile Ile Met Phe Ala Leu Ala Met
 35 40 45
 Asp Ile Val Thr Ala Asn Ala Gln Glu Asn Val Thr Val Gly Thr Asp
 50 55 60
 Asn Gly Ser Glu Pro Thr Asn Glu Ala Arg Ala Glu Ala Ser Ser Leu
 65 70 75 80
 Asp Tyr Ala Ser Gln Gly Gly Gly Arg Gln Ser Gln Gln Pro Thr Leu
 85 90 95
 Thr Lys Glu Val Tyr Pro Gln Lys Lys Ala Asp Gly Asp Leu Tyr His
 100 105 110
 Gly Leu Thr Lys Lys Leu Thr Phe Asp Arg Met Val Pro Pro His Gly
 115 120 125
 Leu Glu Val Thr Tyr Asp Lys Thr Val His Val Ile Phe Pro Ser Glu
 130 135 140
 Val Arg Tyr Val Asp Leu Gly Ser Pro Asp Leu Ile Ala Gly Lys Ala
 145 150 155 160
 Asp Gly Ala Glu Asn Val Ile Arg Val Lys Ala Thr Val Arg Asn Phe
 165 170 175
 Pro Asn Glu Thr Asn Met Ser Val Ile Thr Glu Asp Gly Ser Phe Tyr
 180 185 190
 Thr Phe Asn Val Lys Tyr Ala Ala Glu Pro Leu Leu Leu Asn Val Glu
 195 200 205
 Met Cys Asp Phe Ile His Asp Gly Glu Lys Val Asn Cys Pro Asn Asn
 210 215 220
 Ala Gln Glu Ile Tyr Leu Lys Glu Leu Gly Ser Glu Ser Pro Met Leu
 225 230 235 240
 Val Arg Leu Ile Met Lys Ser Ile His Lys Gln Asn Lys Arg Glu Val
 245 250 255
 Lys His Ile Gly Cys Lys Arg Phe Gly Ile Gln Tyr Leu Leu Lys Gly
 260 265 270
 Ile Tyr Thr His Asn Gly Leu Leu Tyr Phe His Thr Glu Ile Lys Asn
 275 280 285
 Gln Ser Asn Val Pro Phe Asp Val Asp Tyr Ile Thr Trp Lys Ile Val
 290 295 300
 Asp Lys Lys Val Ala Lys Arg Thr Ala Val Gln Glu Gln Ile Ile Leu
 305 310 315 320
 Pro Leu Arg Ala Gln Asn Tyr Ala Thr Leu Val Pro Gly Lys Lys Ser
 325 330 335
 Glu Arg Thr Val Phe Thr Met Ala Lys Phe Thr Ile Pro Asp Asp Lys
 340 345 350
 Cys Leu Val Val Glu Leu Asn Glu Lys Asn Gly Gly Arg His Gln Ser
 355 360 365
 Phe Val Ile Glu Asn Glu Asp Leu Val Arg Ala Asn Thr Ile Asn Glu
 370 375 380
 Leu Gln Val Arg
 385

<210> 6898

<211> 416

<212> PRT

<213> B.fragilis

<400> 6898

Tyr Ala Val Thr Ile Asp Met Thr Lys Lys Trp Gln Tyr Leu Cys Arg
 1 5 10 15
 Cys Leu Leu Val Leu Val Phe Ile Gly Gly Val Ile Pro Ala Lys Ala
 20 25 30
 Gln Leu Val Glu Arg Val Cys Arg Thr Asp Tyr Lys Ile Ser Pro Glu
 35 40 45
 Arg Lys Gly Glu Leu Leu Leu Glu Leu Asp Asn Ile Ser Phe Phe Lys
 50 55 60
 Asp Asn Glu Phe Ala Gly Thr Val Ile Lys Gly Tyr Ser Leu Pro Gly
 65 70 75 80
 Leu Trp Ile Gln Pro Lys Phe Val Tyr Tyr Pro Leu Lys Asn Ile Lys
 85 90 95
 Leu Glu Gly Gly Val His Met Leu Trp Phe Ser Gly Ala Tyr Arg Tyr
 100 105 110
 Pro Ser Val Ser Tyr Gln Asp Ile Ala Leu Trp Lys Gly Glu Gln Tyr
 115 120 125
 Gln Lys Gly Ala His Leu Leu Pro Phe Phe Arg Ala Gln Ile Ser Met
 130 135 140
 Lys Ser Val Asp Leu Ile Leu Gly Asn Ile Tyr Gly Gly Ser Asn His
 145 150 155 160
 Gly Leu Ile Ala Pro Leu Tyr Asn Pro Glu Leu Asn Leu Thr Ala Asp
 165 170 175
 Pro Glu Thr Gly Phe Gln Val Leu Ala Gly Ala Pro Trp Ile Asp Leu
 180 185 190
 Asp Ala Trp Ile Asp Trp Gln Ser Phe Ile Phe Arg Asp Asp Thr His
 195 200 205
 Gln Glu Ala Phe Thr Val Gly Leu Ser Thr Arg Phe Lys Leu Asn Ala
 210 215 220
 Pro Ser Ser Thr Phe His Cys Tyr Ile Pro Leu Gln Ile Leu Ala Gln
 225 230 235 240
 His Arg Gly Gly Glu Ile Asp Thr Ile Arg Glu Ser Ser Val Gln Thr
 245 250 255
 Leu Met Asn Gly Ala Val Gly Ala Gly Val Thr Trp Asn Ile Asp Arg
 260 265 270
 Arg Ile Leu Lys Arg Val Asn Val Glu Leu Asp Ala Ala Gly Tyr Tyr
 275 280 285
 Gln Gln Lys Gly Glu Leu Trp Pro Tyr His Lys Gly Ile Gly Val Tyr
 290 295 300
 Ser Ser Ala Phe Val Asp Leu Gly Asn Phe Arg Val Lys Met Gly His
 305 310 315 320
 Trp Ile Cys Asn Asp Phe Ile Thr Met Phe Gly Ile Pro Tyr Phe Gly
 325 330 335
 Thr Val Ser Thr Lys Lys Glu Gly Ile Thr Tyr Asp Lys Pro Gln Thr
 340 345 350
 Leu Leu Cys Ser Ile Glu Tyr Ser Arg Met Phe Gly Lys His Tyr Ala
 355 360 365
 Leu Gly Leu Lys Ala Asp Ala Tyr Gln Phe Phe Pro Gly Thr Met Arg
 370 375 380
 Ser Ala Asn Gly Glu Leu Thr Ser Pro Gly Ser Thr Thr Ser Phe Ser
 385 390 395 400
 Val Gly Val Tyr Phe Arg Ile Asn Pro Ser Phe Leu Leu Lys Asn Phe
 405 410 415

<210> 6899

<211> 427

<212> PRT

<213> B.fragilis

<400> 6899


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Asn Cys Gly Thr Phe Lys Arg Asn Ala Gly Lys Met Val Ala Lys Ile
1      5      10      15
Ser Val Gly Asn Ser Leu Tyr Gly Ala Leu Ala Tyr Asn Gly Glu Lys
20      25      30
Ile Asn Glu Ala Lys Gly Arg Leu Thr Thr Asn Arg Ile Tyr Asn
35      40      45
Asp Gly Thr Gly Thr Met Glu Ile His Arg Ala Met Glu Asp Phe Leu
50      55      60
Ala Leu Met Pro Val Arg Ser Lys Val Glu Lys Pro Val Val His Ile
65      70      75      80
Ser Leu Asn Pro His Pro Asp Asp Ile Leu Thr Asp Thr Glu Leu Gln
85      90      95
Asn Ile Ala Arg Glu Tyr Leu Glu Lys Met Gly Phe Gly Asn Gln Pro
100     105     110
Tyr Leu Val Phe Lys His Glu Asp Ile Asp Arg His His Leu His Ile
115     120     125
Val Thr Val Arg Val Asp Glu Asn Gly Arg Ser Ile Asp Thr Arg Asn
130     135     140
Asn Phe Tyr Arg Ser Lys Gln Ile Thr Arg Glu Leu Glu Arg Lys Tyr
145     150     155     160
Gly Leu His Asp Ala Glu Arg Lys Asn Arg Arg Leu Asp Thr Pro Leu
165     170     175
His Lys Val Asp Ala Ser Ala Gly Asp Val Lys Lys Gln Ala Gly Asn
180     185     190
Ile Val Lys Ala Ile Ser Gly Gln Tyr Arg Phe Gln Thr Met Gly Glu
195     200     205
Tyr Arg Ala Leu Leu Ser Leu Tyr Asn Met Thr Val Glu Glu Ala His
210     215     220
Gly Asn Val Arg Gly Arg Glu Tyr His Gly Leu Val Tyr Ser Val Thr
225     230     235     240
Asp Asp Lys Gly Asn Lys Val Gly Asn Pro Phe Lys Ser Ser Leu Phe
245     250     255
Gly Lys Ser Val Gly Tyr Glu Ala Val Gln Lys Lys Phe Ala Arg Ser
260     265     270
Lys Gln Glu Ile Lys Asp Arg Lys Leu Ala Asp Met Thr Lys Arg Thr
275     280     285
Val Leu Ser Val Leu Glu Gly Thr Tyr Asp Lys Glu Lys Phe Val Ala
290     295     300
Thr Leu Lys Gly Lys Gly Ile Asp Thr Val Leu Arg Tyr Thr Glu Glu
305     310     315     320
Gly Arg Ile Tyr Gly Ala Thr Phe Ile Asp His Arg Thr Gly Cys Val
325     330     335
Leu Asn Gly Ser Arg Met Gly Lys Glu Leu Ser Ala Asn Ala Leu Gln
340     345     350
Glu His Phe Thr Leu Pro Tyr Ala Gly Gln Pro Pro Ile Pro Ile Ser
355     360     365
Val Pro Val Glu Glu Pro Glu Asn Arg Gln Gly Tyr Ser Gly Gly Glu
370     375     380
Tyr Glu Ser His Ser Ser Gly Met Asn Leu Phe Ala Pro Glu Gly Ser
385     390     395     400
Ala Val Asp Ala Glu Glu Glu Ala Phe Ile Arg Ala Met Gln Arg Lys
405     410     415
Lys Lys Lys Lys Lys Arg Lys Gly Leu Gly Thr
420     425

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<210> 6900

<211> 837

<212> PRT

<213> B.fragilis

<400> 6900

Asn Asp Gln Thr Ile Met Glu Thr Leu Lys Glu Lys Phe Glu Ala Leu
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 Ala His Arg Ile Gln Ser Ser Gly Lys Pro Ala Ala Ala Trp Phe Pro
 20 25 30
 Gln Phe Thr Pro Val Thr Leu Leu Asn Ala Glu Asn Trp Trp Glu Ala
 35 40 45
 Leu Ala Val Cys Glu Tyr Ala Leu Asp Thr His Glu Asp Glu Ala Leu
 50 55 60
 Thr Ala Gly Phe Phe Glu Leu Ile Phe Ser Ala Tyr Asp Cys Asn Val
 65 70 75 80
 Glu Val Asp Leu Asn Glu Glu Glu Tyr Ala Tyr Trp Trp Glu Lys Val
 85 90 95
 Ile Ser Val Cys Asp Arg Val Ala Val Phe Asn Gly Ala Gly Trp Ser
 100 105 110
 Gln Lys Gly Ala Gln Tyr Ser Glu Ala Arg Tyr Gly Lys Arg Asp Leu
 115 120 125
 Ser Leu Leu Phe Pro Cys Tyr Glu Lys Ala Ala Glu Met Gly Ser Pro
 130 135 140
 Glu Ala Glu Ala Thr Val Ala Tyr Trp Arg Tyr Met Gly Phe Tyr Cys
 145 150 155 160
 Glu Gln Asp Arg Ala Glu Gly Glu Arg Arg Phe Ala Ala Leu Ser Ser
 165 170 175
 Pro Glu Ala Leu Trp Gly Lys Tyr Tyr Arg Ala Tyr Ala Glu Gln
 180 185 190
 His Thr Gly Ser Lys Glu Lys Ala Leu Leu Met Arg Lys Glu Leu Leu
 195 200 205
 Asp Glu Leu Pro Glu Ser His Arg Leu Arg Ala His Val Tyr Ala Ala
 210 215 220
 Met Gly Asp Ala Leu Asp Ile Glu Glu Gly Ser Val Ala Glu Glu Ala
 225 230 235 240
 Ala Cys Tyr Glu Lys Ser Leu Glu Leu Val Pro Asn Leu Tyr Ser Leu
 245 250 255
 Lys Asn Leu Ala Thr Leu Tyr Phe Arg Tyr Pro Glu Leu Gly Lys Gln
 260 265 270
 Lys Glu Leu Ala Phe Glu Leu Trp Glu Lys Ala Trp His Ala Gly Val
 275 280 285
 Trp Ser Ala Ala Asn Phe Leu Gly Tyr Asn Tyr Gln Glu Glu Glu Trp
 290 295 300
 Leu Asp Met Pro Lys Ala Ile Glu Trp Leu Glu Lys Gly Met Leu Tyr
 305 310 315 320
 Cys Glu Ser Tyr Cys Ala Tyr Glu Leu Ala Leu Ile Tyr Leu Tyr Asn
 325 330 335
 Asp Glu Tyr Lys Asn Val Glu Arg Gly Leu Met Cys Leu Gln Arg Cys
 340 345 350
 Val Asp Asp Asn Tyr Val Glu Ala Ile Glu Thr Leu Ala Asn Val Tyr
 355 360 365
 Phe Asn Gly Glu Leu Val Glu Glu Asn Ile Ser Tyr Ala Cys Gln Leu
 370 375 380
 Leu Glu Arg Ala Ile Glu Leu Gly Ser Gly Ser Ala Ala Tyr Arg Ile
 385 390 395 400
 Gly Trp Met Tyr Glu Arg Gly Leu Leu Ser Glu Glu Pro Asp Tyr Gln
 405 410 415
 Lys Ala Met Glu Tyr Tyr Glu Lys Ala Val Ser Met Asp Asn Ala Asp
 420 425 430
 Gly Tyr Ala Arg Ala Ala Leu Tyr Leu Ala Asn Gly Tyr Ser Gly Val
 435 440 445
 Thr Asp Ala Gly Lys Ser Lys Ala Tyr Tyr Glu Lys Ala Ala Glu Leu

450 455 460
 Gly Ser Cys Phe Ala Met Val Glu Leu Ala Phe Leu Tyr Glu Asn Gly
 465 470 475 480
 Glu Val Val Glu Gln Ser Tyr Glu Lys Ala Phe Asp Leu Leu Gln Lys
 485 490 495
 Ala Ala Gly Gln Glu Tyr Pro Tyr Ala Met Tyr Arg Val Gly Leu Tyr
 500 505 510
 Leu Asp Arg Gly Val Ile Gly Glu Pro Arg Pro Glu Glu Ala Phe Ala
 515 520 525
 Trp Tyr Ala Lys Ala Ala Glu Arg Gly Asp Gly Asp Ala Ile Phe Ala
 530 535 540
 Leu Gly Arg Cys Tyr Lys Asn Gly Ile Gly Thr Glu Glu Asn Pro Asp
 545 550 555 560
 Lys Ala Leu Glu Trp Phe Thr Lys Gly Ala Glu Asn Asn Glu Pro Arg
 565 570 575
 Cys Leu Thr Glu Met Gly Leu Ala Tyr Glu Tyr Gly Ser Gly Ile Glu
 580 585 590
 Glu Asn Pro His Gln Ala Val Glu Tyr Met Thr Lys Ala Ala Glu Gln
 595 600 605
 Asn Tyr Gly Tyr Ala Gln Phe Lys Met Gly Asp Tyr Phe Phe Phe Gly
 610 615 620
 Tyr Gly Ala Cys Pro Glu Asp Asn Lys Gln Ala Val Glu Trp Tyr Glu
 625 630 635 640
 Lys Ala Val Ala Asn Asp Ile Pro Leu Ala Met Leu Arg Met Gly Glu
 645 650 655
 Tyr Tyr Leu Tyr Asp Tyr Asp Lys Leu Asn Glu Ser Glu Lys Ala Phe
 660 665 670
 Ser Tyr Phe Lys Lys Ala Ala Glu Ala Glu Cys Tyr Asn Glu Gly Leu
 675 680 685
 Gly Ile Cys Tyr Glu Met Gly Ile Gly Val Glu Asp Asn Glu Thr Glu
 690 695 700
 Ala Phe Lys Tyr Tyr Thr Leu Ala Ala Gly Ser Gly Asn Val Met Ser
 705 710 715 720
 Met Tyr Arg Thr Gly Leu Cys Tyr Tyr Asn Gly Val Gly Val Lys Gln
 725 730 735
 Asn Tyr Thr Glu Ala Tyr Arg Trp Phe Asn Asp Ala Ala Gly Asn Asp
 740 745 750
 Asn Val Ala Ser Tyr Tyr Tyr Leu Gly Lys Met Leu Met Tyr Gly Glu
 755 760 765
 Gly Cys Val Pro Asp Ala Glu Ala Gly Leu Gln Trp Leu Met Lys Ala
 770 775 780
 Ala Glu His Asn Ser Asp Lys Ala Gln Phe Glu Leu Gly Asn Ala Tyr
 785 790 795 800
 Leu Met Gly Asn Gly Val Glu Glu Asn Asp Glu Ile Ala Met Glu Trp
 805 810 815
 Phe Glu Lys Ala Ala Glu Asn Gly Asn Ala Lys Ala Leu Lys Ile Thr
 820 825 830
 Gly Arg Arg Gln Arg
 835

<210> 6901

<211> 103

<212> PRT

<213> B.fragilis

<400> 6901

His Lys Thr Ala Arg Arg Phe Glu Arg Lys Ser Gly Lys Leu Thr Leu
 1 5 10 15
 Arg Arg Arg Leu Arg Asp Ala Tyr Ala Met Pro Thr His Ser Val His

		20					25				30				
Ser	Arg	Thr	Leu	Arg	Lys	Arg	Leu	Tyr	Gln	Ser	Arg	Arg	Leu	Lys	Val
		35					40					45			
Val	Trp	Ile	Ala	Arg	Tyr	Phe	Phe	Ala	Pro	Cys	Pro	Thr	Lys	Gly	Lys
	50					55					60				
Arg	Leu	Trp	Val	Lys	Phe	Arg	Phe	Leu	Pro	Ser	Ser	Arg	Trp	Thr	Gly
65					70					75					80
Val	Ile	Leu	Gln	Asn	Tyr	Met	Ala	Lys	Arg	Met	Arg	Ile	Tyr	Ala	Leu
				85					90					95	
Thr	Ala	Ala	Ile	Leu	Thr	Lys									
				100											

<210> 6902

<211> 280

<212> PRT

<213> B.fragilis

<400> 6902

Phe	Thr	Asp	Ala	Asp	Met	Tyr	Val	Thr	Ala	Ser	Val	Gln	Glu	Gln	Glu
1			5						10					15	
Asn	Asn	Ser	Ser	Thr	Ile	Lys	Ser	Asn	Arg	Thr	Met	Ser	Asn	Glu	Ile
			20					25					30		
Phe	Val	Ala	Phe	Ala	Thr	Gln	Lys	Gly	Gly	Ile	Gly	Lys	Ser	Thr	Val
	35					40						45			
Thr	Ala	Leu	Ala	Ala	Ser	Tyr	Leu	His	Asn	Val	Gln	Gly	His	Asn	Val
	50					55					60				
Ala	Val	Ile	Asp	Cys	Asp	Ala	Pro	Gln	His	Ser	Ile	His	Gly	Leu	Arg
65				70						75					80
Glu	Arg	Glu	Thr	Lys	Leu	Ile	Asp	Glu	Ser	Leu	Tyr	Phe	Lys	Ala	Leu
				85				90						95	
Ala	Cys	Asp	His	Phe	Arg	Lys	Ile	Lys	Lys	Asn	Ala	Tyr	Pro	Val	Ile
			100					105					110		
Ala	Ser	Asp	Ala	Leu	Asn	Ala	Leu	Asp	Asp	Ala	Glu	Arg	Met	Leu	Ala
		115					120					125			
Glu	Glu	Asp	Ala	Lys	Pro	Asp	Ile	Val	Phe	Phe	Asp	Met	Pro	Gly	Thr
	130					135					140				
Leu	Lys	Ser	Asn	Gly	Val	Val	Lys	Thr	Leu	Ser	Gln	Met	Asp	Tyr	Ile
145					150					155					160
Phe	Ala	Pro	Met	Ser	Ala	Asp	Arg	Phe	Val	Val	Glu	Ser	Thr	Leu	Gln
				165				170						175	
Phe	Ala	Val	Met	Phe	Arg	Asp	Asn	Leu	Met	Thr	Thr	Gly	Gln	Ala	Lys
			180					185					190		
Thr	Lys	Gly	Leu	Tyr	Leu	Phe	Trp	Thr	Met	Val	Asp	Gly	Arg	Glu	Lys
		195					200					205			
Asn	Gly	Leu	Tyr	Asp	Leu	Tyr	Glu	Asp	Val	Ile	Ala	Glu	Met	Gly	Leu
	210					215					220				
Ser	Val	Leu	Ser	Thr	Arg	Leu	Pro	Asp	Ser	Lys	Lys	Phe	Arg	Arg	Asp
225					230					235					240
Leu	Ser	Glu	Glu	Arg	Lys	Ser	Val	Phe	Arg	Ser	Thr	Ile	Phe	Pro	Met
				245				250						255	
Asp	Val	Ser	Leu	Leu	Lys	Gly	Ser	Gly	Ile	Arg	Glu	Phe	Ser	Glu	Glu
			260					265					270		
Ile	Ser	Arg	Ile	Ile	Lys	Pro	Gln								
			275				280								

<210> 6903

<211> 1951

<212> PRT

<213> B.fragilis

450		455		460
Pro Ala Lys Lys Lys Lys	Ala Thr Lys Lys Glu Asn Lys Ala Lys Ser			
465	470	475	480	
Val Pro Ser Lys Pro Lys Pro	Gln Val Thr Ala Ala Pro Pro Ile Glu			
	485	490	495	
Ser Val Lys Pro Ala Thr Glu Ser	Lys Glu Ala Lys Pro Glu Asn Ala			
	500	505	510	
Gly Arg Gln Ser Asp Pro Glu Asp	Ile Tyr Ala Thr Leu Asp Trp Glu			
	515	520	525	
Thr Asn Pro Pro Ile Asn Gly Phe Tyr Glu Thr	Met Met Ser Leu Thr			
	530	535	540	
Pro Glu Arg Arg Lys Ala Leu Arg Leu Glu Ala Glu Arg His Arg Gln				
545	550	555	560	
Glu Gln Leu Lys Lys Ser Gly Val Lys Asp Thr Leu Asn Pro Ala Phe				
	565	570	575	
Val Pro Ser Ser Gly Asn Gln Ala Glu Gln Lys Glu Ala Ala Lys Gln				
	580	585	590	
Pro Lys Ala Gln Pro Glu Ala Thr Pro Val Pro Val Thr Asp Asn Ser				
	595	600	605	
Gln Ser Glu Lys Ala Thr Thr Ser Leu Phe Pro Glu Phe Glu Thr Gly				
	610	615	620	
Lys Pro Lys Glu Glu Val Pro Asp Leu Thr Ser Arg Pro Tyr His Arg				
625	630	635	640	
Thr Pro Glu Met His Leu Arg Glu Gly Ser Leu Val Ala Asn Arg Ala				
	645	650	655	
Arg Asp Ile Gly Tyr Leu Lys Asp Ile Thr Pro Tyr Gly Ala Thr Phe				
	660	665	670	
Gln Pro Leu Gly Leu Thr Gly Tyr Gln Lys Glu Lys Ala Leu Leu Tyr				
	675	680	685	
Val Ser Leu Arg Asp Ala Tyr Glu Arg Leu Tyr Arg Tyr Glu Ser Asn				
	690	695	700	
Arg His Glu Ala Asn Val Pro Trp Arg Glu His Leu Asn Thr Cys Tyr				
705	710	715	720	
Asp Glu Phe Val Met Arg Tyr Gly Asn Leu Asn Ala Lys Gln Asn Val				
	725	730	735	
Lys Leu Val Met Met Asp Ala Gly Gly Arg Asp Ile Leu Ser Leu Glu				
	740	745	750	
Arg Ala Glu Asn Gly Lys Phe Val Lys Ala Asp Ile Phe Glu Arg Pro				
	755	760	765	
Val Ser Phe Ser Val Glu Ser His Ala Asn Val Gly Ser Pro Glu Glu				
	770	775	780	
Ala Leu Ser Ala Ser Leu Asn Lys Phe Gly Thr Val Asp Leu Asp Tyr				
785	790	795	800	
Met Arg Glu Ile Thr Asp Ser Thr Ala Glu Asp Leu Leu Thr Ala Leu				
	805	810	815	
Gln Gly Arg Ile Tyr Tyr Asn Pro Leu Val Thr Gly Tyr Glu Ile Lys				
	820	825	830	
Asp Arg Phe Ile Ala Gly Asn Val Ile Glu Lys Ala Glu Arg Ile Glu				
	835	840	845	
Ala Trp Met Gly Glu Asn Pro Glu Ser Glu Arg Met Pro Glu Val Lys				
	850	855	860	
Gln Ala Leu Glu Ala Leu Lys Asp Ala Glu Pro Pro Arg Ile Ala Phe				
865	870	875	880	
Glu Asp Leu Asp Phe Asn Phe Gly Glu Arg Trp Ile Pro Thr Gly Val				
	885	890	895	
Tyr Ala Ala Tyr Met Ser Arg Leu Phe Asp Thr Glu Val Lys Ile Ala				
	900	905	910	
Tyr Ser Ala Ser Met Asp Glu Phe Ser Val Ala Cys Gly Tyr Arg Thr				
	915	920	925	

1395	1400	1405
Thr Gly Asp Ala Thr Leu Leu Gly Arg Leu Pro Leu Ser Glu Thr Glu		
1410	1415	1420
Glu Lys Ala Lys Met Leu Ile Ala Thr Asp Tyr Ala Arg Lys Met Ala		
1425	1430	1435
Leu Asp Met Arg Met Ile Asp Pro His Tyr Glu Asp His Pro Asp Asn		
1445	1450	1455
Lys Ala Ser His Cys Ala Lys Ile Ile Ala Glu Tyr Tyr Gln Lys Tyr		
1460	1465	1470
Asp Ala Gln Lys Gly Thr Gln Phe Val Phe Ser Asp Leu Gly Thr Tyr		
1475	1480	1485
Gln Pro Gly Asp Gly Trp Asn Val Tyr Ser Glu Ile Lys Arg Lys Leu		
1490	1495	1500
Thr Glu Asp Tyr Gly Ile Pro Pro Ser Glu Val Arg Phe Ile Gln Glu		
1505	1510	1515
Cys Lys Thr Asp Lys Ala Arg Lys Ala Val Ile Asp Ala Met Asn Ala		
1525	1530	1535
Gly Thr Val Arg Val Leu Phe Gly Ser Thr Ser Met Leu Gly Thr Gly		
1540	1545	1550
Val Asn Ala Gln Lys Arg Cys Val Ala Ile His His Leu Asp Thr Pro		
1555	1560	1565
Trp Arg Pro Ser Asp Leu Gln Arg Asp Gly Arg Gly Val Arg Ala		
1570	1575	1580
Gly Asn Glu Ile Ala Lys His Phe Ala Gly Asn Asn Val Asp Val Ile		
1585	1590	1595
Ile Tyr Ala Val Glu Lys Ser Leu Asp Ser Tyr Lys Phe Asn Leu Leu		
1605	1610	1615
His Cys Lys Gln Thr Phe Ile Ser Gln Leu Lys Ser Gly Ala Met Glu		
1620	1625	1630
Ala Arg Thr Ile Asp Glu Gly Ala Met Asp Glu Lys Ser Gly Met Asn		
1635	1640	1645
Phe Ser Glu Tyr Met Ala Leu Leu Ser Gly Asn Thr Asp Leu Leu Asp		
1650	1655	1660
Lys Ala Lys Leu Glu Lys Arg Ile Ala Ser Leu Glu Gly Glu Arg Lys		
1665	1670	1675
Ser Phe Asn Lys Gly Lys Arg Asp Ser Glu Phe Lys Leu Glu Ser Lys		
1685	1690	1695
Thr Arg Glu Leu Gly Asn Asn Thr Ala Phe Ile Asp Ala Met Thr Glu		
1700	1705	1710
Asp Trp Asn Arg Phe Leu Ser Val Val Gln Thr Asp Lys Glu Gly Asn		
1715	1720	1725
His Leu Asn Ile Ile Lys Val Asp Gly Val Asp Ser Ala Asp Glu Lys		
1730	1735	1740
Val Ile Gly Lys Arg Leu Gln Glu Ile Ala Lys Asn Ala Thr Thr Gly		
1745	1750	1755
Gly Leu Tyr Thr Gln Val Gly Glu Phe Tyr Gly Phe Pro Ile Lys Val		
1765	1770	1775
Val Ser Glu Arg Ile Leu Lys Glu Gly Leu Glu Phe Thr Asp Asn Arg		
1780	1785	1790
Phe Val Val Glu Gly Asn Tyr Lys Tyr Thr Tyr Asn Asn Gly His Leu		
1795	1800	1805
Ala Leu Ala Asp Pro Leu Ala Ala Arg Asn Phe Leu Asn Ala Ile		
1810	1815	1820
Glu Arg Ile Pro Ser Ile Ile Asp Gln Tyr Lys Ala Lys Asn Glu Val		
1825	1830	1835
Leu Glu Arg Glu Ile Pro Gln Leu Gln Glu Ile Ala Gly Lys Val Trp		
1845	1850	1855
Lys Lys Glu Glu Leu Lys Gln Leu Lys Ser Glu Leu Ala Ala Leu		
1860	1865	1870

Asp Arg Lys Ile Gln Leu Glu Leu Ala Pro Pro Thr Pro Glu Ile Thr
 1875 1880 1885
 Glu Lys Glu His Glu Gly Gln Gln Val Lys Pro Glu Ala Lys Gly Val
 1890 1895 1900
 Arg Asn Gly Ile Arg Gln Tyr Pro Glu Asp Thr Ser Pro Gln Ile Arg
 1905 1910 1915 1920
 Asn Pro Ser Glu Ser Ile Ile Ala Asn His Thr Ile Thr Gly His Pro
 1925 1930 1935
 Gly Leu Tyr Ala Lys Glu Glu Thr Arg Ser Lys Gly Leu Lys Ile
 1940 1945 1950

<210> 6904

<211> 450

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (399)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6904

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu

290	295	300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg		
305	310	315
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe		320
	325	330
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe		335
	340	345
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn		350
	355	360
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu		365
	370	375
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Xaa Val		380
385	390	395
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr		400
	405	410
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Arg Leu		415
	420	425
Glu Ser Phe Leu Phe Arg Leu Asn Leu Arg Ile Thr Ser Ser Arg Ile		430
	435	440
Val Gly		445
450		

<210> 6905

<211> 478

<212> PRT

<213> B.fragilis

<400> 6905

Tyr Leu Ile Tyr Met Glu Gln Thr Lys Asn Glu Pro Lys Asn Glu Asn	
1	5
Lys Ala Ala Pro Asp Asn Gly Lys Pro Lys Asn Arg Arg Gln Ala Glu	10
	20
Ser His Gln Ala Cys Leu Asn Gly Gln Gly Ala Lys Glu Glu Gly Lys	25
	30
Ala Lys Glu Arg Lys Pro Leu Thr Glu Ala Gln Arg Leu Lys Arg Gln	35
	40
Lys Met Ile Val Leu Pro Ala Met Val Leu Val Phe Ile Gly Ala Met	45
65	50
Trp Leu Ile Phe Ala Pro Ser Ser Asp Lys Glu Gln Gln Pro Gly Thr	55
	60
Gly Gly Tyr Asn Ile Glu Met Pro Asp Ala Asp Lys Ala Asn Arg Gln	65
	70
Ile Ile Gly Asp Lys Ala Lys Ala Tyr Glu Gln Gly Ala Met Glu Glu	75
	80
Arg Gln Glu Asn Arg Ser Arg Ala Met Gln Glu Leu Gly Asp Met Phe	85
	90
Asp Arg Glu Val Ala Glu Thr Asp Gly Gly Arg Asp Phe Asp Leu Ala	95
145	100
Asn Pro Gly Asn Ala Glu Glu Ala Thr Ser Thr Ser Ser Ala Pro Lys	105
	110
Thr Ile Gln Ser Ser Ala Ala Ala Tyr Arg Asp Leu Asn Ala Thr Leu	115
	120
Gly Asn Phe Tyr Glu Gln Pro Lys Asn Asp Asn Thr Glu Met Asp Glu	125
	130
Leu Leu Glu Arg Ile Ala Ser Leu Glu Ser Glu Leu Glu Ser Glu Lys	135
	140
Gly Lys Ala Ser Ala Met Asp Asp Gln Val Ala Leu Met Glu Lys Ser	145
	150
Tyr Glu Leu Ala Ala Lys Tyr Met Gly Gly Gln Asn Asn Gly Lys Pro	155
	160
	165
	170
	175
	180
	185
	190
	195
	200
	205
	210
	215
	220
	225
	230
	235
	240

245 250 255
 Glu Pro Val Gln Ala Ala Glu Pro Tyr Leu Val Gln Lys Thr Gly Lys
 260 265 270
 Asn Thr Ala Ala Pro Val Arg Gln Val Thr His Gln Val Val Ser Ser
 275 280 285
 Leu Ser Gln Pro Met Ser Asn Ala Glu Phe Val Ala Ser Phe Ser Gln
 290 295 300
 Glu Arg Asn Arg Ser Phe Asn Thr Ala Val Gly Gly Thr Thr Val Ser
 305 310 315 320
 Asp Lys Asn Thr Ile Ser Ala Cys Ile Tyr Gly Ala Gln Ser Val Thr
 325 330 335
 Asp Gly Gln Ala Val Lys Leu Arg Leu Leu Glu Pro Met Ala Val Val
 340 345 350
 Asp Arg Ile Ile Pro Arg Asn Ala Val Val Val Gly Thr Ala Lys Ile
 355 360 365
 Gln Gly Glu Arg Leu Asp Ile Gly Ile Thr Ser Leu Glu Tyr Asp Gly
 370 375 380
 Thr Ile Ile Pro Val Glu Leu Ser Val Tyr Asp Thr Asp Gly Gln Pro
 385 390 395 400
 Gly Ile Phe Ile Pro Asn Ser Met Glu Met Asn Ala Val Arg Glu Val
 405 410 415
 Ala Ala Asn Met Gly Gly Ser Leu Gly Ser Ser Ile Asn Ile Ser Thr
 420 425 430
 Asn Ala Gly Ala Gln Leu Ala Ser Asp Leu Gly Lys Gly Leu Ile Gln
 435 440 445
 Gly Thr Ser Gln Tyr Ile Thr Lys Lys Met Arg Thr Val Lys Val His
 450 455 460
 Leu Lys Ala Gly Tyr Lys Val Met Leu Tyr Gln Asp Arg Asp
 465 470 475

<210> 6906

<211> 335

<212> PRT

<213> B.fragilis

<400> 6906

Pro Met Asn Phe Asp Asn Leu His Gln Ile Leu Arg Ser Leu Tyr Glu
 1 5 10 15
 Gln Met Met Pro Leu Cys Gly Asp Met Ala Gly Val Ala Lys Gly Ile
 20 25 30
 Ala Gly Leu Gly Ala Leu Phe Tyr Val Ala Tyr Arg Val Trp Gln Ser
 35 40 45
 Leu Ala Arg Ala Glu Pro Ile Asp Val Phe Pro Met Leu Arg Pro Phe
 50 55 60
 Ala Ile Gly Leu Cys Ile Met Phe Phe Pro Thr Val Val Leu Gly Thr
 65 70 75 80
 Ile Asn Ser Ile Met Ser Pro Val Val Gln Gly Thr Ala Lys Met Leu
 85 90 95
 Glu Thr Glu Thr Leu Asp Met Asn Arg Tyr Arg Glu Gln Lys Asp Lys
 100 105 110
 Leu Glu Tyr Glu Ala Met Met Arg Asn Pro Glu Thr Ala Tyr Leu Val
 115 120 125
 Ser Asn Glu Glu Phe Asp Lys Gln Leu Glu Glu Leu Gly Trp Ser Pro
 130 135 140
 Gly Asp Met Val Thr Met Ala Gly Met Tyr Ile Glu Arg Gly Met Tyr
 145 150 155 160
 Asn Met Lys Lys Gly Ile Arg Asp Phe Phe Arg Glu Ile Leu Glu Leu
 165 170 175
 Met Phe Gln Ala Ala Ala Leu Val Ile Asp Thr Ile Arg Thr Phe Phe

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      180      185      190
Leu Val Val Leu Ala Ile Leu Gly Pro Ile Ala Phe Ala Ile Ser Val
      195      200      205
Trp Asp Gly Phe Gln Ser Thr Leu Thr Gln Trp Ile Cys Arg Tyr Ile
      210      215      220
Gln Val Tyr Leu Trp Leu Pro Val Ser Asp Met Phe Ser Thr Ile Leu
      225      230      235      240
Ala Lys Ile Gln Val Leu Met Leu Gln Ser Asp Ile Glu Arg Met Gln
      245      250      255
Ala Asp Pro Asn Phe Ser Leu Asp Ser Ser Asp Gly Val Tyr Ile Val
      260      265      270
Phe Met Ile Ile Gly Ile Ile Gly Tyr Phe Thr Ile Pro Thr Val Ala
      275      280      285
Gly Trp Ile Ile Gln Ala Gly Gly Met Gly Ser Tyr Gly Arg Asn Val
      290      295      300
Asn Gln Thr Ala Gly Arg Ala Gly Ser Met Ala Gly Ser Val Ala Gly
      305      310      315      320
Ala Thr Ala Gly Asn Val Val Gly Arg Ala Gly Lys Leu Leu Lys
      325      330      335

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<210> 6907

<211> 375

<212> PRT

<213> B.fragilis

<400> 6907

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Ile Glu Leu Tyr Leu Leu Thr Glu Leu Gln Glu Trp Glu Ile Met Asn
1      5      10      15
Tyr Ile Ala Ile Val Cys Trp Met Leu Phe Gly Ser Val Leu Arg Leu
      20      25      30
Cys Ala Gln Thr Cys Gly Ala Thr Tyr Ile Thr Glu Phe Gln Tyr Asp
      35      40      45
Leu Lys Lys Arg Thr Asn Trp Cys Asn Leu Leu Arg Leu Asp Ala Tyr
      50      55      60
Val Pro Ile Gly Thr Lys Gly Ile Leu Glu Phe Ala Ser Ile His Val
      65      70      75      80
Tyr Lys Thr Arg Pro Glu Arg Ile Ile Asn Asp Leu Gln Thr Phe Ser
      85      90      95
Asn Ile Glu Glu Asp Asn Leu Pro Cys Ala Ile Ala Val Leu Gly Tyr
      100      105      110
Thr Arg Leu Ile Gly Asn Ile Thr Leu Phe Ala Gly Ile Arg Asn Leu
      115      120      125
Asn Glu Asp Tyr Phe Thr Thr Pro Cys Met Ser Leu Phe Thr Asn Ser
      130      135      140
Ser Cys Gly Ile Phe Pro Thr Leu Ser Ala Asn Tyr Pro Ile Ala Asn
      145      150      155      160
Tyr Pro Leu Ala Ala Leu Cys Leu Asp Tyr Lys Met Thr Leu Gly Arg
      165      170      175
Phe Gly Ile Glu Ser Ser Leu Tyr Asn Gly Lys Gly Tyr Asn Gly Trp
      180      185      190
Ser Lys Gly Lys His Pro Phe Thr Phe Asn Pro Arg Lys Asp Gly Val
      195      200      205
Phe Ser Ile Thr Glu Ile Asn Tyr Gln Thr Glu Tyr Gly Lys Cys Phe
      210      215      220
Gly Gly Phe Ser Leu His Thr Asn Gly Asp Met Pro Asp Val Ala Gly
      225      230      235      240
Glu Trp Lys Thr Arg Glu Arg Glu Lys Lys Val Ser Pro Lys Met Met
      245      250      255
Phe Ala Trp Trp Gly Tyr Ala Glu Arg Lys Leu Trp Ser Arg Val Arg

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260 265 270
 Gln Glu Val Asn Leu Leu Val Gln Tyr Thr Arg Thr Ser Ser Val Phe
 275 280 285
 Ser Glu Cys Arg Asn Tyr Met Gly Ala Gly Val Thr Trp Ile Tyr Val
 290 295 300
 Pro Gly Gly Gln Lys Arg His Glu Ala Gly Leu Phe Leu Ser Ala Ala
 305 310 315 320
 Gln Phe Lys Ser Cys Asn Glu Val Ala Gly Glu Val Thr Tyr Arg Tyr
 325 330 335
 Ser Phe Asn Arg Asp Thr Tyr Ile Gln Pro Ala Ile His Leu Ile Lys
 340 345 350
 Asn Gly Gly Gly Leu His Glu Val Phe Leu Ile Arg Met Gly Tyr Ile
 355 360 365
 Leu Asn Gly Gly Arg Val Arg
 370 375

<210> 6908

<211> 427

<212> PRT

<213> B.fragilis

<400> 6908

Arg Arg Ile Leu His Arg Leu Ile Leu Asn Leu Lys Lys Leu Arg Thr
 1 5 10 15
 Met Lys Ser Thr Phe Ser Val Ile Tyr Tyr Leu Lys Arg Gln Val Val
 20 25 30
 Lys Lys Asp Gly Thr Val Pro Val Met Gly Arg Ile Thr Val Asp Gly
 35 40 45
 Ser Gln Thr Gln Phe Ser Cys Lys Leu Thr Val Asp Pro Lys Leu Trp
 50 55 60
 Asp Thr Lys Gly Gly Arg Val Thr Gly Arg Ser Thr Ala Ala Leu Glu
 65 70 75 80
 Thr Asn Arg Met Leu Asp Lys Met Arg Val Arg Ile Asn Lys His Tyr
 85 90 95
 Gln Glu Ile Met Glu Arg Asp Asn Phe Val Thr Ala Glu Lys Val Lys
 100 105 110
 Asn Ala Phe Leu Gly Leu Glu His Arg Tyr His Thr Leu Leu Gln Val
 115 120 125
 Phe Arg Gln His Asn Glu Asp Tyr Ala Lys Gln Val Glu Ala Gly Met
 130 135 140
 Lys Ala Lys Gly Thr Phe Asp Lys Tyr Lys Ile Val Tyr Lys His Leu
 145 150 155 160
 Gln Glu Phe Leu Thr Ile Arg Tyr His Val Lys Asp Ile Ala Leu Lys
 165 170 175
 Glu Leu Thr Pro Ala Phe Ile Ser Asp Phe Glu Met Phe Leu Arg Thr
 180 185 190
 Asp Lys His Cys Cys Thr Asn Thr Val Trp Leu Tyr Val Cys Pro Leu
 195 200 205
 Arg Thr Met Val Phe Ile Ala Ile Asn Asn Glu Trp Leu Thr Arg Asp
 210 215 220
 Pro Phe Arg Glu Tyr Glu Ile Lys Lys Glu Glu Thr Thr Arg Ser Phe
 225 230 235 240
 Leu Thr Lys Asp Glu Ile Arg Leu Leu Met Glu Gly Lys Leu Lys Asn
 245 250 255
 Ala Lys Gln Glu Leu Tyr Arg Asp Leu Tyr Leu Phe Cys Ala Phe Thr
 260 265 270
 Gly Leu Ser Phe Ala Asp Met Arg Asn Leu Thr Glu Glu Asn Ile Arg
 275 280 285
 Thr Tyr Phe Asp Glu His Glu Trp Ile Asn Ile Asn Arg Gln Lys Thr

290		295		300
Gly Val Val Ser Asn Ile Arg Met Leu Asp Ile Ala Lys Arg Ile Ile				
305		310		320
Asp Lys Tyr Arg Gly Leu Cys Glu Asn Gly Arg Ile Phe Pro Val Pro				
	325		330	335
His Tyr Asn Thr Cys Leu Ala Gly Ile Arg Ala Val Ala Lys Arg Cys				
	340		345	350
Gly Ile Thr Lys His Ile Thr Trp His Gln Ser Arg His Thr Ala Ala				
	355		360	365
Thr Thr Val Phe Leu Ser Asn Gly Val Pro Ile Glu Thr Val Ser Ser				
	370		375	380
Met Leu Gly His Lys Ser Ile Lys Thr Thr Gln Ile Tyr Ala Lys Ile				
385		390		400
Thr Lys Glu Lys Leu Asn Gln Asp Met Glu His Leu Ala Ala Arg Leu				
	405		410	415
Asn Gln Ile Glu Glu Phe Ala Gly Cys Thr Ile				
	420		425	

<210> 6909

<211> 61

<212> PRT

<213> B.fragilis

<400> 6909

Thr Ser Gly Tyr Arg Ser Glu Ile Gly Ile Val Thr Arg Pro Glu Asn		
1	5	10
Asp Ser Phe Gly Arg Ser Ala Asp Asn Ser Gly Thr His Val Ala Asp		
	20	25
Ile Val Lys Leu Asp Asp Ala Ser Val Thr Val Ser Pro Thr Val Tyr		
	35	40
Phe Arg Lys Phe Leu Tyr Trp Ile Gly Leu Thr Gly Lys		
	50	60

<210> 6910

<211> 84

<212> PRT

<213> B.fragilis

<400> 6910

Gly Cys Ser Leu Lys Tyr Glu Asn Thr Ala Asn Thr Lys Met Ala Lys		
1	5	10
Gln Pro Ile Ala Phe Lys Asn Phe Phe Ile Tyr Ser Val Val Leu Val		
	20	25
Thr His Asn Lys Tyr Arg Arg Phe Phe Leu Ser Ile Lys Lys Thr Phe		
	35	40
Leu Thr Lys Thr Tyr Lys Leu Lys Ile Asn Lys Met Pro Pro Tyr Lys		
	50	60
Asn Leu His Gln Lys Ser Ser Leu Cys Glu Lys Ser Ser Leu Ser Leu		
65	70	75
Gly Ser Thr Asn		80

<210> 6911

<211> 114

<212> PRT

<213> B.fragilis

<400> 6911

Asn Pro Pro Leu His His Phe Ile Asp Gly Ile Leu Gly Cys Leu Pro

1 5 10 15
 Cys Leu Val Ser Gly Leu Asp Glu Glu Ala Tyr His Leu Val Leu
 20 25 30
 Leu Ala Gly Arg Asp Asn Gly Glu Val Phe Val Leu Ala Glu Asn Ala
 35 40 45
 Leu Ser Gly Ala Gln Arg Phe Gln Leu His Thr Ala Met Gly Ala Gly
 50 55 60
 Thr Ser Ala Asn Gly Val Arg Lys Val Val Val Ala Leu Pro Arg Met
 65 70 75 80
 Ser Ala Leu Gly Thr Asp Ile Arg Ala Val Arg Pro Leu Asp Cys Val
 85 90 95
 Met Leu Glu Ala Met Thr Glu Ser Val Cys Leu Leu Arg Gly Gly Gln
 100 105 110
 Ser Arg

<210> 6912

<211> 66

<212> PRT

<213> B.fragilis

<400> 6912

Leu Arg Asp Leu Thr Gly Lys Gln Gly Gln Ala Ser Cys Phe Arg Glu
 1 5 10 15
 Lys Ser Pro Ala Leu Arg Val Val Phe Phe Pro Lys Asn Leu Ala Phe
 20 25 30
 Pro Asn Pro Tyr Leu Phe Lys His Pro Lys Arg Lys Arg Pro Met Arg
 35 40 45
 Gln Lys Asp Ala Leu Lys Lys Met Ser Asp Lys Arg Glu Ala Asp Lys
 50 55 60
 Ile Val
 65

<210> 6913

<211> 532

<212> PRT

<213> B.fragilis

<400> 6913

Asn Ile Phe Gln Met Ala Lys Lys Lys Ser Glu Lys Asp Val Leu Ile
 1 5 10 15
 Val Arg Asp Glu Lys Thr Gly Glu Ile Ser Val Val Ala Gly Leu Asp
 20 25 30
 Ala Asp Gly Ser Pro Lys Arg Thr Pro Ala Lys Ala Glu Asn Ala Gln
 35 40 45
 Ser Phe Leu Gln Phe Asp Arg His Gly Asp Val Leu Asp Asn Phe Phe
 50 55 60
 Lys Asn Phe Phe Arg Gln Cys Lys Glu Pro Ser Arg Phe Gly Phe Tyr
 65 70 75 80
 Arg Val Ala Ala Asp Gln Ala Asp Lys Leu Met Glu Val Met Lys Asp
 85 90 95
 Leu Leu Lys Asp Pro Glu Ala Asn Lys Glu Leu Leu Ala Pro His Lys
 100 105 110
 Val Asp Thr Ser Gly Tyr Glu Lys Gln Val Lys Glu Glu Gln Thr Ala
 115 120 125
 Gly Lys Thr Glu Gln Thr Glu Gln Lys Gln Glu Glu Gln Pro Lys Glu
 130 135 140
 Asn Gln Lys Gln Glu Glu Met Glu Lys Lys Gln Glu Ser Pro Gln Gln
 145 150 155 160

Thr Gln Gly Arg Gln Gly Tyr Gln Pro Ile Asp Glu Ser Lys Ile Asn
 165 170 175
 Trp Gln Glu Leu Glu Glu Lys Trp Gly Val Lys His Asp Asp Leu Glu
 180 185 190
 Lys Ser Gly Asp Leu Gln Lys Met Leu Asn Tyr Gly Lys Ser Asp Leu
 195 200 205
 Val Lys Val Ser Pro Lys Phe Gly Gly Glu Ala Phe Glu Leu Asp Ala
 210 215 220
 Arg Leu Ser Phe Lys Lys Asp Gly Glu Gly Asn Val Ser Leu Val Pro
 225 230 235 240
 His Phe Ile Arg Lys Glu Gln Lys Leu Asp Glu Tyr Lys Glu His Lys
 245 250 255
 Phe Ser Asp Glu Asp Arg Lys Asn Leu Arg Glu Thr Gly Asn Leu Gly
 260 265 270
 Arg Val Val Asp Ile Val Asp Arg Glu Thr Gly Glu Ile Ile Pro Ser
 275 280 285
 Phe Ile Ser Ile Asp Arg Lys Thr Asn Glu Ile Thr Asp Ile Pro Ala
 290 295 300
 Asn Lys Val Arg Ile Pro Asp Arg Ile Gly Lys Thr Glu Ile Thr Lys
 305 310 315 320
 Gln Glu Gln Asp Met Leu Arg Ala Gly Leu Pro Val Arg Asp Lys Leu
 325 330 335
 Ile Glu Arg Asn Asp Gly Arg Lys Phe Val Thr Thr Leu Gln Val Asn
 340 345 350
 Val Glu Gln Arg Gly Val Glu Phe Val Pro Gly Thr Gly Arg Ser Pro
 355 360 365
 Arg Thr Ala Gln Thr Gln Glu Ala Lys Asn Asn Pro Thr Gln Gly Gln
 370 375 380
 Ala Gln Gly Met Glu Asn Ser Ala Ala Pro Gln Lys Glu Gln Arg Arg
 385 390 395 400
 Asn Thr Trp Thr Asn Ala Asp Gly Ser Ile Arg Pro Ile Ser Lys Trp
 405 410 415
 Ser Gly Val Asn Phe Thr Asp Gln Gln Lys Ala Asp Tyr Ala Ala Gly
 420 425 430
 Lys Ala Ile Lys Leu Glu Asn Val Thr Asp Lys Gln Gly Phe His Ala
 435 440 445
 Thr Met Tyr Ile Lys Phe Asn Pro Glu Lys Gly Arg Pro Tyr Arg Tyr
 450 455 460
 Asp Thr Asn Pro Asp Asn Ala Gln Lys Val Ala Pro Ser Asn Glu Ser
 465 470 475 480
 Arg Thr Gln Val Ala Val Asn Ser Glu Gly Lys Thr Asn Glu Ala Thr
 485 490 495
 Lys Asn Leu Lys Glu Pro Leu Gln Lys Gly Gln Thr Ala Pro Lys Asp
 500 505 510
 Asp Lys Gln Gln Lys Leu Gln Glu Lys Pro Gln Lys Lys Ile Ile Lys
 515 520 525
 Gly Met Lys Met
 530

<210> 6914

<211> 785

<212> PRT

<213> B.fragilis

<400> 6914

Thr Phe Ile His Val Pro Lys Ile Asn Val Ile Lys Ile Met Glu Arg
 1 5 10 15
 Ser Gly Asn Phe Tyr Lys Ala Ile Gln Leu Gly Tyr Ile Leu Ile Ser
 20 25 30

Ile Leu Ile Gly Cys Met Ala Tyr Asn Ser Leu Tyr Glu Trp Gln Glu
 35 40 45
 Ile Glu Ala Leu Glu Leu Gly Asn Lys Lys Ile Asp Glu Leu Arg Lys
 50 55 60
 Glu Ile Asn Asn Ile Asn Ile Gln Met Ile Lys Phe Ser Leu Leu Gly
 65 70 75 80
 Glu Thr Ile Leu Glu Trp Asn Asp Lys Asp Ile Glu His Tyr His Ala
 85 90 95
 Arg Arg Met Ala Met Asp Ser Met Leu Cys Arg Phe Lys Ala Thr Tyr
 100 105 110
 Pro Ala Glu Arg Ile Asp Ser Val Arg Ser Leu Leu Glu Asp Lys Glu
 115 120 125
 Arg Gln Met Phe Gln Ile Val Arg Leu Met Asp Glu Gln Gln Ser Ile
 130 135 140
 Asn Lys Lys Ile Ala Asn Gln Ile Pro Val Ile Val Gln Lys Ser Val
 145 150 155 160
 Gln Glu Gln Ser Lys Lys Pro Lys Arg Lys Gly Phe Leu Gly Ile Phe
 165 170 175
 Gly Lys Lys Glu Gly Thr Lys Pro Thr Thr Thr Thr Thr Thr Leu Arg
 180 185 190
 Ser Ser Asn Arg Asn Met Val Asn Glu Gln Lys Ala Gln Ser Arg Arg
 195 200 205
 Leu Ser Glu Gln Ala Asp Ser Leu Ala Ala Arg Asn Ala Glu Leu Asn
 210 215 220
 Arg Gln Leu Gln Gly Leu Ile Cys Gln Ile Glu Lys Lys Val Gln Ser
 225 230 235 240
 Asp Leu Gln Asn Arg Glu Ser Glu Ile Thr Ala Met Arg Lys Lys Ser
 245 250 255
 Phe Met Gln Ile Gly Gly Leu Met Gly Phe Val Leu Leu Leu Leu Val
 260 265 270
 Ile Ser Tyr Ile Ile Ile His Arg Asp Ala Lys Asn Ile Lys Arg Tyr
 275 280 285
 Lys Arg Lys Thr Thr Asp Leu Ile Glu Gln Leu Glu Gln Ser Val Gln
 290 295 300
 Gln Asn Glu Val Leu Ile Thr Ser Arg Lys Lys Ala Val His Thr Ile
 305 310 315 320
 Thr His Glu Leu Arg Thr Pro Leu Thr Ala Ile Thr Gly Tyr Thr Glu
 325 330 335
 Leu Leu Arg Lys Glu Cys Asn Ser Gly Asn Asn Gly Gln Tyr Ile Arg
 340 345 350
 Asn Ile Leu Gln Ser Ser Asp Arg Met Arg Asp Met Leu Asn Thr Leu
 355 360 365
 Leu Asp Phe Phe Arg Leu Asp Asn Gly Lys Glu Gln Pro Arg Leu Ser
 370 375 380
 Pro Cys Arg Ile Ser Ala Ile Thr His Thr Leu Glu Thr Glu Phe Ile
 385 390 395 400
 Pro Val Ala Val Asn Lys Gly Leu Ser Leu Ser Val Lys Thr Gly His
 405 410 415
 Asp Ala Ile Val Leu Thr Asp Lys Glu Arg Ile Ile Gln Ile Gly Asn
 420 425 430
 Asn Leu Leu Ser Asn Ala Val Lys Phe Thr Glu Glu Gly Gly Val Ser
 435 440 445
 Leu Ile Thr Glu Tyr Asp Asn Gly Val Leu Thr Leu Val Val Glu Asp
 450 455 460
 Thr Gly Thr Gly Met Thr Glu Glu Glu Gln Lys Gln Ala Phe Gly Ala
 465 470 475 480
 Phe Glu Arg Leu Ser Asn Ala Ala Ala Lys Glu Gly Phe Gly Leu Gly
 485 490 495
 Leu Ala Ile Met Arg Asn Ile Val Ser Met Leu Gly Gly Thr Ile Arg

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<210> 6915
<211> 138
<212> PRT
<213> B.fragilis
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<400> 6915																
Lys	Gln	Ile	His	Gln	Leu	Lys	Lys	Lys	Met	Arg	Met	Ser	Ile	Ser	Arg	
1				5					10					15		
Thr	Lys	Met	Leu	Gln	Val	Ser	Lys	Cys	Leu	Ile	Gly	Leu	Ala	Val	Met	
			20					25					30			
Met	Leu	Gln	Ser	Cys	Asp	Val	Ala	Asp	Asn	Arg	Arg	Asp	Leu	Leu	Cys	
			35				40					45				
Gly	Asn	Trp	Glu	Ser	Val	Glu	Gly	Lys	Pro	Asp	Val	Leu	Ile	Tyr	Lys	
	50					55					60					
Glu	Gly	Glu	Ala	Tyr	Lys	Val	Thr	Val	Phe	Lys	Arg	Ser	Gly	Leu	Arg	
65					70					75				80		
Arg	Lys	Leu	Lys	Pro	Glu	Thr	Tyr	Leu	Leu	Gln	Glu	Glu	Asn	Gly	Asn	
				85					90					95		
Leu	Phe	Met	Asn	Thr	Gly	Phe	Arg	Ile	Asp	Val	Ser	Tyr	Asn	Glu	Ala	
			100					105					110			
Thr	Asp	Ile	Leu	Thr	Phe	Ser	Pro	Asn	Gly	Asp	Tyr	Val	Arg	Val	Asn	

115 120 125
 Pro Lys Pro Asp His Pro Ile Gly Glu Gln
 130 135

<210> 6916
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6916
 Phe Glu Thr Gln Leu Pro Gln Leu Leu Asn Pro His Lys Lys Ile Lys
 1 5 10 15
 Ile Lys Asn Arg Thr Asp Met Gly Thr Thr Met Ala Thr Lys Phe Val
 20 25 30
 Ala Trp Glu Val Pro Thr Leu Glu Ala Leu Lys Gly Ser Lys Val Tyr
 35 40 45
 Ile Leu Arg Glu Lys Leu Asn Asn Gly Gly Gln Met Asn Arg Glu Glu
 50 55 60
 Lys Asp Trp Leu Thr Arg Asn Val Asn Ser Asn Thr Tyr Phe Lys Ser
 65 70 75 80
 Ala Val Pro Leu Gln Gly Trp Arg Phe Asp Phe Ser Asp Val Leu Arg
 85 90 95
 Thr Phe Ile Val Cys Gln Tyr Gly His Trp Thr Glu Tyr Lys Ala Thr
 100 105 110
 Asp Lys Thr Gly Leu Arg Arg Tyr Leu Tyr Gly Arg Ile Asp Asn Ile
 115 120 125
 Val Glu Leu Glu Lys
 130

<210> 6917
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 6917
 Leu Lys Asn Gln Met Thr Met Asn Ile Leu Asn Asn Lys Asn Lys Arg
 1 5 10 15
 Ile Ser Ile Phe Lys Ala Leu Ala Leu Cys Leu Phe Ala Ala Val Ser
 20 25 30
 Leu Thr Leu Val Ser Cys Asp Asp Asp Met Asp Ile Gln Gln Ser Tyr
 35 40 45
 Pro Phe Thr Val Glu Ile Met Pro Val Pro Asn Lys Val Thr Lys Gly
 50 55 60
 Gln Thr Val Glu Ile Arg Cys Glu Leu Lys Lys Thr Gly Asp Tyr Ala
 65 70 75 80
 Asn Thr Leu Tyr Thr Ile Arg Tyr Phe Gln Phe Glu Gly Glu Gly Thr
 85 90 95
 Leu Lys Met Asp Asn Gly Ile Thr Phe Leu Pro Asn Asp Arg Tyr Leu
 100 105 110
 Leu Glu Asn Glu Lys Phe Arg Leu Tyr Tyr Thr Ala Ala Gly Glu Glu
 115 120 125
 Ala His Asn Phe Ile Val Val Val Glu Asp Asn Phe Asp Asn Ser Tyr
 130 135 140
 Glu Leu Glu Phe Asp Phe Asn Asn Arg Asn Val Lys Asp Asp Gly Ala
 145 150 155 160
 Ile Ser Val Val Pro Ile Gly Asn Phe Lys Pro Leu Thr Arg
 165 170

<210> 6918

<211> 150
 <212> PRT
 <213> B.fragilis

<400> 6918

Gly	Leu	Lys	His	Leu	Ser	Ile	Tyr	Gly	Ser	Gly	Asn	Thr	Thr	Phe	Thr
1			5					10						15	
Asn	Gly	Ile	Lys	Ser	His	Asp	Glu	Leu	Gln	Met	Ser	Ile	Tyr	Gly	Ser
		20					25					30			
Gly	Asn	Ile	Ser	Gly	Asn	Ser	Phe	Ser	Cys	Thr	Lys	Leu	Ala	Ala	Arg
	35					40					45				
Ile	Tyr	Gly	Ser	Gly	Asn	Val	Asn	Leu	Lys	Arg	Ile	Ser	Thr	Ser	Asp
	50				55					60					
Thr	Gln	Val	Asn	Ile	Ser	Gly	Ser	Gly	Asn	Val	Leu	Leu	Asp	Gly	Lys
65			70						75					80	
Ser	Thr	Glu	Ala	Glu	Tyr	His	Ile	Ala	Gly	Ser	Gly	Asp	Ile	Asn	Ala
		85						90					95		
Thr	Glu	Leu	Lys	Val	Glu	Asn	Val	Asn	Ala	Arg	Ile	Ser	Gly	Ser	Gly
	100					105						110			
Ser	Ile	Arg	Cys	Tyr	Ala	Thr	Glu	Asn	Leu	Thr	Gly	Gly	Val	Ser	Gly
	115					120					125				
Ser	Gly	Asn	Val	Ala	Tyr	Lys	Gly	Asn	Pro	Gln	Ile	Asn	Phe	Ser	Lys
	130				135					140					
Arg	Gly	Leu	Gln	Lys	Leu										
145				150											

<210> 6919
 <211> 433
 <212> PRT
 <213> B.fragilis

<400> 6919

Phe	Leu	Met	Gln	Gln	Asn	Asn	Ser	Glu	Lys	Trp	Asn	Phe	Leu	Ser	Asn
1			5					10						15	
Lys	Lys	Leu	Phe	Trp	Gly	Thr	Ile	Ile	Val	Ile	Leu	Phe	Leu	Phe	Leu
		20					25					30			
Leu	Ser	Ala	Trp	Leu	Phe	Phe	Trp	Asn	Arg	Glu	Arg	His	Phe	Phe	Asn
	35					40					45				
Asp	Asn	Tyr	Val	Leu	Asp	Asn	Ala	Leu	Trp	Gly	Thr	Leu	Gly	Asp	Phe
	50				55					60					
Val	Gly	Gly	Phe	Ile	Gly	Ser	Ile	Leu	Ala	Phe	Ile	Gly	Val	Ile	Val
65			70						75					80	
Thr	Cys	Gln	Ile	Phe	Ile	Glu	Gln	Arg	Gln	Gln	Thr	Ile	Asp	Leu	Asn
		85					90						95		
Glu	Glu	Gln	Lys	Arg	Ile	Thr	Ser	Asn	Ser	Gln	Lys	Ser	Gln	Ile	Asn
	100					105						110			
Gln	Ser	Glu	Ile	Gln	Arg	Phe	Asn	Ser	Leu	Phe	Phe	Glu	Leu	Ile	Asp
	115					120					125				
Leu	His	Arg	Thr	Gln	Val	Asp	Tyr	Leu	Met	Lys	Met	Pro	Leu	Val	Gly
	130				135					140					
Phe	Glu	Ala	Glu	Asn	Ser	Lys	Glu	Thr	Asn	Phe	Phe	Asp	Arg	Phe	Met
145				150					155					160	
Glu	Glu	Leu	His	Ser	Asn	Ser	Asn	Val	Asn	Ser	Ser	Tyr	Ala	Arg	Ala
		165						170						175	
Phe	Ile	Val	Ala	Lys	Arg	Lys	Tyr	Leu	Gln	Leu	Tyr	Leu	Ser	Asn	Ser
	180						185					190			
Thr	Ile	Leu	Ala	Pro	Tyr	Phe	Arg	Val	Leu	Tyr	Arg	Leu	Phe	Glu	Leu
	195					200					205				
Ile	Asp	Lys	Ala	Asn	Ile	Glu	Glu	Lys	Glu	Lys	Val	Arg	Tyr	Ala	Lys

210	215	220
Ile Ala Arg Ala Gln Leu Ser Glu Ser Glu Leu Phe Ile Leu Arg Tyr		
225	230	235
Asn Ser Ala Asn Leu Tyr Gly Asp Asn Phe Ile Glu Tyr Ile Asn Lys		240
	245	250
Phe Arg Leu Leu Lys His Leu Pro Leu Ser Leu Leu Glu Phe Lys		255
	260	265
Asn Ile Arg Asn Val Ile Ala Glu Gly Asp Ser Leu Tyr Gln Tyr Ser		270
	275	280
Ile Asn Met Leu Phe Phe Ser Val Trp Lys Arg Ile Tyr Asn Ile Thr		285
	290	295
Val Gly His Glu Asp Arg Thr Asn Asp Phe Val Gln Leu Tyr Asp Glu		300
305	310	315
Arg Lys Arg Tyr Lys Phe Glu Leu Lys Met Pro Lys Lys His Arg Thr		320
	325	330
Ala Leu Tyr Leu Thr Ile Asp Thr Ser Arg Pro Asn Arg Asp Pro Leu		335
	340	345
Leu Lys Cys Phe Arg Asn Phe Asn Glu Ser Asp Phe Gly Lys Leu Leu		350
	355	360
Thr Asn Phe Leu Leu Glu Ile Tyr Lys Tyr Ser Asn Phe Ser Arg Tyr		365
	370	375
Asn Lys Asp Glu Asn Ile Glu Tyr His Lys Lys Val Phe His Asp Gly		380
385	390	395
Ser Val Thr Lys Ile Val Cys Trp Ile Leu Asn Thr Glu Asn Lys Leu		400
	405	410
Leu Arg Val Ser His Pro Ser Arg Asp Lys Phe Tyr Gly Ile Ser Glu		415
	420	425
Asp		430

<210> 6920
 <211> 386
 <212> PRT
 <213> B.fragilis

<400> 6920
Pro Asn Met Gln Glu Thr Asn Ser Lys Ile Asn Lys Tyr Asp Tyr Leu
1 5 10 15
Ile Val Gly Ala Gly Leu Phe Gly Ser Val Phe Ala His Glu Ala His
20 25 30
Lys Arg Asn Lys Arg Cys Leu Val Leu Glu Lys Arg Pro Trp Thr Gly
35 40 45
Gly Asn Ile Tyr Cys Glu Asn Ile Asn Glu Ile His Val His Lys Tyr
50 55 60
Gly Ala His Ile Phe His Thr Asp Lys Lys Lys Ile Trp Asp Tyr Val
65 70 75 80
Asn Ser Leu Val Glu Phe Asn Gln Phe Ile Asn Ser Pro Leu Ala Ser
85 90 95
Ser Gly Gly Lys Leu Tyr Asn Leu Pro Phe Asn Met Asn Thr Phe Tyr
100 105 110
Gln Leu Trp Gly Val Gln Thr Pro Met Glu Ala Glu Ile Lys Leu Glu
115 120 125
Glu Gln Arg His Pro Tyr Arg Ile Ile Thr Asn Pro Gln Asn Leu Glu
130 135 140
Glu Gln Ala Leu Lys Ile Cys Gly Ser Asp Ile Tyr Tyr Arg Leu Ile
145 150 155 160
Lys Gly Tyr Thr Glu Lys Gln Trp Gly Arg Ala Ala Thr Lys Leu Pro
165 170 175
Ala Phe Ile Val Lys Arg Ile Pro Phe Arg Phe Thr Phe Asp Asn Asn

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<210> 6921
<211> 246
<212> PRT
<213> B.fragilis
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<400> 6921																
Lys	Arg	Thr	His	Met	Asn	Gly	Thr	Ile	Ser	Met	Thr	Asp	Ile	Leu	Leu	
1				5					10					15		
Ala	Val	Ser	Val	Gly	Cys	Asn	Leu	Trp	Phe	Leu	Phe	Leu	Leu	Leu	Tyr	
			20					25					30			
Asp	Arg	Ile	Met	Glu	Thr	Arg	Phe	Val	Arg	Phe	Leu	Lys	Gly	Ile	Ala	
		35				40						45				
Gly	Leu	Trp	Arg	Ser	Leu	Asp	Gly	Met	Ala	Ala	Lys	Gln	Glu	Thr	Val	
	50					55					60					
Arg	Glu	Ala	Ser	Pro	Ala	Glu	Thr	Ser	Asp	Ile	Ile	Gly	Lys	Ser	Arg	
65					70					75					80	
Phe	Arg	Met	Ala	Ser	Thr	Arg	Thr	Thr	Ala	Ala	Ile	Pro	Thr	Gln	Glu	
				85					90					95		
Ala	Ala	Thr	Ser	Glu	Lys	Gly	Ile	Glu	Leu	Ser	Glu	Glu	Glu	Ala	Thr	
			100					105					110			
Phe	Asp	Asp	Gly	Asn	Thr	Glu	Thr	Val	Ser	His	Pro	Ala	Gln	Val	Pro	
		115					120					125				
Glu	Glu	Lys	Leu	Asp	Glu	Thr	Phe	Thr	Ser	Ile	Pro	Pro	Ser	Glu	Leu	
	130					135					140					
Glu	Phe	Gly	Glu	Asp	Glu	Pro	Glu	Asp	Gly	Thr	Pro	Asp	Thr	Pro	Arg	
145					150					155					160	
Ala	Thr	Gly	Ser	Ser	Phe	Asp	Glu	Ile	Asp	Asp	Ala	Val	Arg	Ala	Ala	
				165					170					175		
Lys	Asn	Pro	Glu	Ala	Thr	Thr	Ala	Glu	Arg	Glu	Arg	Ala	Ala	Lys	Val	
			180					185					190			
Phe	Ser	Asp	Met	Glu	Gly	Thr	Glu	Leu	Tyr	Glu	Lys	Leu	Met	Ser	Gly	

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<210> 6922
<211> 83
<212> PRT
<213> B.fragilis
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<210> 6923
<211> 452
<212> PRT
<213> B.fragilis
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<400> 6923																
Ser 1	Gly	Trp	Gln	Lys 5	Arg	Lys	Gly	Glu	Asn 10	Thr	Lys	Met	Asp	Lys 15	Thr	
Thr	Ile	Ile	Val 20	Val	Glu	Asp	Asn 25	Ile	Val	Tyr	Cys	Glu	Phe 30	Val	Cys	
Asn	Met	Leu 35	Ala	Arg	Glu	Gly	Tyr 40	Arg	Thr	Val	Lys	Ala 45	Tyr	His	Leu	
Ser	Thr 50	Ala	Lys	Lys	His	Leu 55	Gln	Gln	Ala	Thr	Asp 60	Asn	Asp	Ile	Val	
Val 65	Ala	Asp	Leu	Arg	Leu 70	Pro	Asp	Gly	Asn 75	Gly	Ile	Asp	Leu	Leu	Arg	80
Trp	Met	Arg	Lys 85	Glu	Gly	Lys	Met	Gln 90	Pro	Phe	Ile	Ile	Met	Thr 95	Asp	
Tyr	Ala	Glu	Val 100	Asn	Thr	Ala	Val	Glu 105	Ser	Met	Lys	Leu	Gly 110	Ser	Ile	
Asp	Tyr	Ile 115	Pro	Lys	Gln	Leu	Val	Glu 120	Asp	Lys	Leu	Val	Pro 125	Leu	Ile	
Arg	Ser 130	Ile	Leu	Lys	Glu	Arg 135	Gln	Ala	Gly	Gln	Arg 140	Arg	Met	Pro	Val	
Phe 145	Ala	Arg	Asp	Gly	Ser	Ala 150	Phe	Gln	Lys	Ile	Met 155	His	Arg	Ile	Arg	160
Leu	Val	Ala	Ala 165	Thr	Asp	Met	Ser	Val	Met 170	Ile	Phe	Gly	Glu	Asn 175	Gly	
Thr	Gly	Lys	Glu 180	His	Ile	Ala	His	His 185	Leu	His	Asp	Lys	Ser 190	Lys	Arg	
Ala	Val	Lys 195	Pro	Phe	Val	Ala	Val	Asp 200	Cys	Gly	Ser	Leu	Thr	Lys	Glu	
												205				

Leu Ala Pro Ser Ala Phe Phe Gly His Val Lys Gly Ala Phe Thr Gly
 210 215 220
 Ala Asp Cys Ala Lys Lys Gly Tyr Phe His Glu Ala Glu Gly Gly Thr
 225 230 235 240
 Leu Phe Leu Asp Glu Val Gly Asn Leu Ala Leu Glu Thr Gln Gln Met
 245 250 255
 Leu Leu Arg Ala Ile Gln Glu Arg Arg Tyr Arg Pro Val Gly Asp Lys
 260 265 270
 Ala Asp Arg Ser Phe Asn Val Arg Ile Ile Ala Ala Thr Asn Glu Asp
 275 280 285
 Leu Glu Ala Ala Val Ser Glu Lys Arg Phe Arg Gln Asp Leu Leu Tyr
 290 295 300
 Arg Leu His Asp Phe Gly Ile Thr Val Pro Pro Leu Arg Asp Cys Gln
 305 310 315 320
 Glu Asp Ile Met Pro Leu Ala Glu Phe Phe Arg Glu Ala Ala Asn Lys
 325 330 335
 Glu Leu Glu Cys Asp Val Ile Gly Phe Asp Gly Glu Ala Arg Lys Thr
 340 345 350
 Leu Leu Thr His Val Trp Pro Gly Asn Val Arg Glu Leu Arg Gln Lys
 355 360 365
 Ile Met Gly Ala Val Leu Gln Ala Gln Thr Gly Leu Val Thr Lys Glu
 370 375 380
 His Leu Glu Leu Ala Val Thr Lys Pro Thr Ser Pro Val Ser Phe Ala
 385 390 395 400
 Leu Arg Asn Asp Ala Glu Asp Lys Glu Arg Ile Leu Arg Ala Leu Lys
 405 410 415
 Gln Ala Asn Gly Asn Arg Lys Val Ala Ala Glu Leu Leu Gly Ile Gly
 420 425 430
 Arg Thr Thr Leu Tyr Ser Lys Leu Glu Glu Tyr Gly Leu Lys Tyr Lys
 435 440 445
 Phe Arg Gln Ser
 450

<210> 6924
 <211> 433
 <212> PRT
 <213> B.fragilis

<400> 6924
 Phe Leu Phe Asn Ile Cys Tyr Met Arg Ser Leu Phe Leu Ile Phe Phe
 1 5 10 15
 Phe Cys Tyr Val Thr Gly Lys Ala Gln Asp Arg Ala Cys Val Val Ser
 20 25 30
 Glu Lys Asp Ser Ile Pro Leu Ser Asn Val Tyr Ile Cys Leu Lys Asp
 35 40 45
 Arg Arg Val Ile Ala Ile Ser Asp Glu Lys Gly Val Phe Ser Leu Glu
 50 55 60
 Lys Tyr Asp Ser Leu Ser Leu Asn Asp Thr Leu Tyr Phe Ser His Ile
 65 70 75 80
 Asn Tyr Leu His Lys Lys Leu Ser Tyr Gly Asp Leu Ile Lys Asn Arg
 85 90 95
 Cys Thr Val Phe Leu Ile Glu Asn Asn Arg Val Leu Glu Glu Val Ser
 100 105 110
 Ile Phe Ser Asn Arg His Leu Asn Arg Phe Leu His Tyr Glu Ile Leu
 115 120 125
 Ser Pro Leu Lys Arg Gly Val Tyr Ser Phe Ala Ser Val Leu Val Asp
 130 135 140
 Gly Gln Ile Tyr Ile Val Gly Gly Ser Thr Ser Cys Gly Pro Phe Gln
 145 150 155 160

Ser Asn Ile Arg Ser Thr Leu Phe Trp Glu Lys Tyr Ser Asn Met Met
 165 170 175
 Tyr Arg Tyr Asp Ile Lys Gln Asp Lys Trp Glu Thr Ile Arg His Lys
 180 185 190
 Phe Arg Glu Arg Ala Tyr His Thr Ala Gly Tyr Tyr Asp Gly Lys Ile
 195 200 205
 Phe Ile Leu Gly Gly Lys Arg Leu Ser Glu Thr Arg Ile Val Asp Tyr
 210 215 220
 Leu Asp Asn Ala Ile Glu Ile Tyr Asp Ile Lys Arg Asp Thr Val Trp
 225 230 235 240
 Thr Asp Tyr Thr Asn Pro His Gln Ala Thr Leu Leu Gly Ser Val Val
 245 250 255
 Tyr Lys Asp Asn Met Ile Val Leu Gly Gly Val Lys Lys Val Leu Gln
 260 265 270
 Asn Asn Glu Gly Val Tyr Ser Asp Glu Met His Leu Trp Asn Leu Lys
 275 280 285
 Ser Gly Tyr Trp Tyr Glu Leu Gly Lys Met Pro Ile Arg Gln Ala Pro
 290 295 300
 Glu Thr Ile Leu Val Asp His Cys Ile Tyr Leu Ile Gly Asn Arg Asn
 305 310 315 320
 Gly Gly Gly Trp Ser Ile Glu Cys Tyr Asn Leu Leu Thr Gly Ala Trp
 325 330 335
 Thr Asn Ala Gly His Leu Leu Tyr Arg Leu Gly Trp Pro Ser Leu Ala
 340 345 350
 Tyr His Asn Asp Ile Ile Tyr Ile Phe Glu Gln Gly Val Val Gln Thr
 355 360 365
 Phe Asn Ile Lys Ser Arg Gln Val Arg Ser Tyr Met Ile Asp Leu Lys
 370 375 380
 Leu Lys Ser Pro Ala Leu Tyr Tyr Phe Asp Gly Lys Leu Tyr Ile Leu
 385 390 395 400
 Gly Gly Phe Tyr Met Gly Asp Pro Ser Arg Asn Val Tyr Ser Val Asp
 405 410 415
 Leu Lys Glu Phe Asp Lys Thr Glu Val Asp Tyr Tyr Tyr Asn Asn Val
 420 425 430
 Arg

<210> 6925

<211> 85

<212> PRT

<213> B.fragilis

<400> 6925

His Arg Val Lys Thr Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
 1 5 10 15
 Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Ala Asn Leu Gln Lys
 20 25 30
 Thr Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly
 35 40 45
 Ser Asp Asp Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser Ala
 50 55 60
 Asp Val Cys Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
 65 70 75 80
 Leu Lys Ile Lys Lys
 85

<210> 6926

<211> 77

<212> PRT

<400> 6926

<210> 6927

<211> 941

<212> PRT

<400> 6927

Ile	Pro	Asp	Lys	Gln	Gly	Tyr	Arg	Pro	Ser	Gly	Arg	Val	Gln	Gly	Ser
1				5					10					15	
Glu	Gly	Ser	Val	Pro	Leu	His	Leu	Leu	Arg	Arg	Ser	Ala	Gly	Ser	Leu
			20					25					30		
Arg	Pro	Val	Arg	His	Pro	Leu	His	Gly	Arg	His	Arg	Pro	Val	Asp	Met
		35				40					45				
Tyr	Arg	Leu	Arg	Arg	Gly	Ile	Val	Phe	Arg	Pro	Arg	Met	Ala	Asp	Leu
	50				55					60					
Arg	Ala	Glu	Arg	Pro	Val	Arg	Arg	Ile	Arg	Ala	Asp	Glu	Ile	Gly	Ser
65				70					75						80
Gly	Lys	Glu	Pro	Ser	Pro	Ile	Pro	Tyr	Gln	Pro	Ala	Ala	Asp	His	Pro
			85					90					95		
Ile	Ile	Gln	Thr	Ala	Thr	Lys	Gly	Arg	Asn	Asp	Met	Arg	Asn	Thr	Ser
			100					105					110		
Lys	Met	Thr	Thr	Leu	Glu	Asn	Lys	Phe	Pro	Leu	Leu	Ala	Val	Glu	His
		115				120						125			
Gly	Cys	Ile	Ile	Ser	Lys	Asp	Ala	Asp	Ile	Thr	Val	Ala	Phe	Glu	Val
	130				135						140				
Glu	Leu	Pro	Glu	Leu	Tyr	Thr	Val	Thr	Asp	Ala	Glu	Tyr	Glu	Ala	Ile
145				150					155						160
His	Gly	Cys	Trp	Cys	Lys	Ala	Ile	Lys	Val	Leu	Pro	Asp	Phe	Cys	Val
			165					170					175		
Val	His	Lys	Gln	Asp	Trp	Phe	Ile	Lys	Glu	Lys	Tyr	Lys	Pro	Glu	Leu
			180					185					190		
Gln	Lys	Asp	Asp	Met	Ser	Phe	Leu	Ser	Arg	Ser	Phe	Glu	Arg	His	Phe
		195					200					205			
Asn	Glu	Arg	Pro	Tyr	Leu	Lys	His	Thr	Cys	Tyr	Leu	Tyr	Leu	Thr	Lys
	210				215						220				
Thr	Thr	Lys	Glu	Arg	Asn	Arg	Met	Gln	Ser	Asn	Phe	Ser	Thr	Leu	Cys
225				230					235						240
Arg	Gly	His	Ile	Ile	Pro	Lys	Glu	Leu	Asp	Lys	Glu	Thr	Ala	Gly	Lys
			245						250					255	
Phe	Met	Glu	Ala	Ala	Glu	Gln	Phe	Glu	Arg	Ile	Met	Asn	Asp	Ser	Gly
		260						265				270			
Phe	Val	Arg	Leu	Arg	Arg	Leu	Ser	Thr	Asp	Glu	Ile	Val	Gly	Thr	Glu
	275						280					285			
Lys	Ser	Thr	Gly	Leu	Ile	Glu	Arg	Tyr	Phe	Ser	Leu	Met	Pro	Glu	Gly
	290				295						300				
Asp	Thr	Thr	Leu	Gln	Asp	Ile	Asp	Leu	Ser	Ala	Lys	Glu	Met	Arg	Ile

305		310		315		320
Gly Asp Asn Arg Leu Cys Leu His Thr Leu Ser Asp Ala Glu Asp Met						
	325		330		335	
Pro Gly Lys Val Ala Thr Asp Ile Arg Tyr Glu Lys Leu Ser Thr Asp						
	340		345		350	
Arg Ser Asp Cys Arg Leu Ser Phe Ala Ser Pro Val Gly Leu Leu Leu						
	355		360		365	
Ser Cys Asn His Ile Tyr Asn Gln Tyr Val Ile Ile Asp Asn Ser Glu						
	370		375		380	
Glu Asn Leu Gln Lys Phe Glu Lys Ser Ala Arg Asn Met Gln Ser Leu						
385		390		395		400
Ser Arg Tyr Ser Arg Ser Asn Ser Ile Asn Arg Glu Trp Ile Asp Gln						
	405		410		415	
Tyr Leu Asn Glu Ala His Ser Tyr Gly Leu Thr Ser Val Arg Ala His						
	420		425		430	
Phe Asn Val Met Ala Trp Ser Asp Asp Ala Glu Glu Leu Lys His Ile						
	435		440		445	
Lys Asn Asp Val Gly Ser Gln Leu Ala Ser Met Glu Cys Val Pro Arg						
	450		455		460	
His Asn Thr Ile Asp Cys Pro Thr Leu Tyr Trp Ala Ala Met Pro Gly						
465		470		475		480
Asn Ala Ala Asp Phe Pro Ala Glu Glu Ser Phe His Thr Phe Ile Glu						
	485		490		495	
Gln Ala Val Cys Leu Phe Thr Glu Glu Thr Asn Tyr Arg Ser Ser Leu						
	500		505		510	
Ser Pro Phe Gly Ile Lys Met Val Asp Arg Leu Thr Gly Lys Pro Leu						
	515		520		525	
His Leu Asp Ile Ser Asp Leu Pro Met Lys Arg Gly Ile Thr Thr Asn						
	530		535		540	
Arg Asn Lys Phe Val Leu Gly Pro Ser Gly Ser Gly Lys Ser Phe Phe						
545		550		555		560
Met Asn His Leu Val Arg Gln Tyr Tyr Glu Gln Gly Thr His Val Val						
	565		570		575	
Leu Val Asp Thr Gly Asn Ser Tyr Gln Gly Leu Cys Glu Met Ile Arg						
	580		585		590	
Arg Lys Thr Asn Gly Ala Asp Gly Val Tyr Phe Thr Tyr Thr Glu Glu						
	595		600		605	
Lys Pro Ile Ser Phe Asn Pro Phe Tyr Thr Asp Asp Tyr Val Phe Asp						
	610		615		620	
Val Glu Lys Lys Asp Ser Ile Lys Thr Leu Leu Leu Thr Leu Trp Lys						
625		630		635		640
Ser Glu Asp Asp Lys Val Thr Lys Thr Glu Ser Gly Glu Leu Gly Ser						
	645		650		655	
Ala Val Asn Ala Tyr Ile Glu Arg Ile Arg Ala Asp Arg Ser Ile Val						
	660		665		670	
Pro Ser Phe Asn Thr Phe Tyr Glu Tyr Met Arg Asp Asp Tyr Arg Cys						
	675		680		685	
Glu Leu Ala Glu Arg Glu Ile Lys Val Glu Lys Ser Asp Phe Asn Ile						
	690		695		700	
Asp Asn Met Leu Thr Thr Met Arg Gln Tyr Tyr Arg Gly Gly Arg Tyr						
705		710		715		720
Asp Phe Leu Leu Asn Ser Thr Glu Asn Ile Asp Leu Leu Gly Lys Arg						
	725		730		735	
Phe Ile Val Phe Glu Ile Asp Ser Ile Lys Glu Asn Arg Glu Leu Phe						
	740		745		750	
Pro Val Val Thr Ile Ile Ile Met Glu Ala Phe Ile Asn Lys Met Arg						
	755		760		765	
Arg Leu Lys Gly Val Arg Lys Gln Leu Ile Val Glu Glu Ala Trp Lys						
	770		775		780	

Ala Leu Ser Ser Ala Asn Met Ala Glu Tyr Leu Arg Tyr Met Tyr Lys
 785 790 795 800
 Thr Val Arg Lys Tyr Tyr Gly Glu Ala Ile Val Val Thr Gln Glu Val
 805 810 815
 Asp Asp Ile Ile Ser Ser Pro Val Val Lys Glu Ser Ile Ile Asn Asn
 820 825 830
 Ser Asp Cys Lys Ile Leu Leu Asp Gln Arg Lys Tyr Met Asn Lys Phe
 835 840 845
 Asp Ala Ile Gln Ser Leu Leu Gly Leu Thr Glu Lys Glu Lys Ser Gln
 850 855 860
 Ile Leu Ser Ile Asn Met Ala Asn Asn Pro Ser Arg Leu Tyr Lys Glu
 865 870 875 880
 Val Trp Ile Gly Leu Gly Gly Thr Gln Ser Ala Val Tyr Ala Thr Glu
 885 890 895
 Val Ser Ala Glu Glu Tyr Leu Ala Tyr Thr Thr Glu Glu Thr Glu Lys
 900 905 910
 Val Glu Val Tyr Arg Leu Ala Glu Gln Leu Gly Gly Asp Ile Glu Ala
 915 920 925
 Ala Ile Arg Gln Leu Ala Glu Arg Arg Arg Lys Lys Glu
 930 935 940

<210> 6928

<211> 146

<212> PRT

<213> B.fragilis

<400> 6928

Ile Gln Ser Asn Met Ser Glu Lys Arg Arg Asn Lys Gly Gly Arg Asn
 1 5 10 15
 Pro Lys Leu Asp Pro Ala Val Phe Arg Tyr Thr Val Arg Phe Ser Glu
 20 25 30
 Glu Glu His Asn Arg Phe Leu Ser Met Phe Glu Lys Ser Gly Val Tyr
 35 40 45
 Ala Lys Ser Val Phe Leu Lys Ala His Phe Phe Gly Gln Pro Phe Lys
 50 55 60
 Val Leu Lys Val Asp Lys Thr Leu Val Asp Tyr Tyr Thr Lys Leu Ser
 65 70 75 80
 Asp Phe His Ala Gln Phe Arg Ala Ile Gly Thr Asn Tyr Asn Gln Val
 85 90 95
 Val Lys Glu Leu Arg Leu His Phe Ser Glu Lys Lys Ala Met Ala Leu
 100 105 110
 Leu Tyr Lys Leu Glu Gln Gln Thr Val Glu Leu Val Lys Leu Ser Arg
 115 120 125
 Lys Ile Val Glu Leu Ser Arg Glu Met Gln Glu Lys Trp Ser Gln Lys
 130 135 140
 Ser Val
 145

<210> 6929

<211> 94

<212> PRT

<213> B.fragilis

<400> 6929

Lys Cys Ile Lys Ile Met Gly Lys Lys Ile Phe Ala Thr Leu Ile Val
 1 5 10 15
 Ala Val Val Ala Thr Phe Ala Gly Tyr Asn Ile Tyr Gln Ser Gln Arg
 20 25 30
 Ala Lys Asn Thr Met Ser Glu Leu Ala Met Ala Asn Val Glu Ala Leu

35	40	45
Ala Asp Ile Asn Glu Thr	Asp Ser Ser Gly Gln Thr	Leu Tyr Cys Cys
50	55	60
Gly Asn Glu Asp Thr Cys	Ala Lys Gly Glu Asp Glu Asp Thr Gly Glu	
65	70	75
Glu Phe Ile Ile His	Gly Val Leu Ser Ser Lys Lys Cys Lys	80
85	90	

<210> 6930
 <211> 313
 <212> PRT
 <213> B.fragilis

<400> 6930
Arg Leu Ile Lys Leu Tyr Ser Pro Met Ile His Ile Ala Cys Asn Ile
1 5 10 15
Asp Ser Asn Phe Thr Val His Cys Ala Val Thr Leu Val Ser Leu Phe
20 25 30
Glu Asn Asn Arg Glu Ser Glu Phe Cys Ile His Ile Val Ala Ser Thr
35 40 45
Leu Pro Ser Glu Asp Lys Glu Val Leu Lys Thr Ile Ala Gly Arg Tyr
50 55 60
Gly Asn Glu Val Arg Phe Tyr Phe Pro Pro Glu Asp Leu Leu His Asn
65 70 75 80
Phe Ser Ile Lys Lys Phe Gly Lys Arg Ile Ser Met Ala Thr Tyr Tyr
85 90 95
Arg Cys Met Phe Ser Ala Ile Leu Pro Glu Glu Val Asp Lys Val Leu
100 105 110
Tyr Leu Asp Cys Asp Ile Val Ile Leu Gly Asp Ile Ser Glu Tyr Trp
115 120 125
Asn Thr Asp Met Ser Asn Tyr Ser Val Ala Cys Val Glu Asp Ile Gly
130 135 140
Ser Asn Glu Asp Glu Arg Tyr Asp Ile Leu Lys Tyr Asp Lys Ser Phe
145 150 155 160
Ser Tyr Phe Asn Ala Gly Val Leu Leu Ile Asn Leu Arg Tyr Trp Arg
165 170 175
Glu His Lys Ile Asp Glu Gln Cys Glu Gln Tyr Phe Leu Arg Tyr Pro
180 185 190
Glu Arg Ile Arg Phe Asn Asp Gln Asp Leu Leu Asn Ala Val Leu His
195 200 205
Glu Ser Lys Leu Phe Val Pro Leu Lys Trp Asn Met Gln Asp Gly Phe
210 215 220
Tyr Arg Tyr Gly Ala Asp Lys Gly Val Lys Asp Lys Lys Gln Leu His
225 230 235 240
Gln Gln Leu Leu His Pro Val Ile Leu His Tyr Thr Asn Lys Lys Pro
245 250 255
Trp Asn Tyr Asp Ser Met His Pro Leu Lys Gly Glu Tyr Phe Lys Tyr
260 265 270
Leu Asp Met Thr Pro Trp Lys Gly Lys Arg Pro Leu Ser Thr Phe Lys
275 280 285
Ala Arg Leu Ser Trp Trp Leu Lys Ser Leu Pro Tyr Ala Leu Arg Leu
290 295 300
Arg Lys Pro Lys Tyr Val Asn Leu Ile
305 310

<210> 6931
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 6931

Trp Leu Ala Asn Glu Arg Leu Leu Pro Tyr Val Val Ser Val Thr Lys
 1 5 10 15
 Asn Ser Val Thr Met Asn Arg Leu Ile Leu Leu Val Glu Ser Arg Ile
 20 25 30
 Arg Gly Asp Val Tyr Val Arg Phe Gly Gly Glu Leu Pro Lys Thr His
 35 40 45
 Arg Ser Asn Thr Ala Gly Arg Trp Met Leu Ser Leu Pro Leu Lys Ser
 50 55 60
 Val Asn Asn Leu Val Lys Asp Ala Arg Lys Val Gln Gln Thr Ile Leu
 65 70 75 80
 Met Val Gly Asp Ile Thr Asp Thr Tyr Val Thr Ser Phe Gln Arg Met
 85 90 95
 Met Arg Asp Asp Asn Phe Thr Val Glu Glu Leu Gly Ala Ile Ala Phe
 100 105 110
 Gly Tyr Thr Lys Leu Leu Glu Glu Ser Asn Asp Val Leu Thr Glu Leu
 115 120 125
 Lys Asn Val Val Asn Ile Thr Thr Leu Ser Met Thr Asp Lys Glu Arg
 130 135 140
 Met Asp Val Val Glu Arg Cys Tyr Ser Lys Met Lys Arg Tyr Arg Asn
 145 150 155 160
 Leu Val Ser Tyr Tyr Thr Asn Lys Asn Ile Ser Val Ser Tyr Leu Arg
 165 170 175
 Ala Lys Lys Lys Asn Asp Leu Asp Arg Ile Met Gly Leu Tyr Gly Asn
 180 185 190
 Met Asn Glu Arg Tyr Trp
 195

<210> 6932

<211> 269

<212> PRT

<213> B.fragilis

<400> 6932

Lys His Lys Asn Met Lys Thr Arg Ala Leu Arg Ser Tyr Leu Cys Phe
 1 5 10 15
 Thr Leu Leu Ala Thr Ala Phe Leu Leu Gly Leu Ala Gly Cys Asp Lys
 20 25 30
 Glu Glu Ser Glu Pro Leu Arg Ile Gly Asp Asp Ser Phe Asn Asn Ile
 35 40 45
 Glu Asn Gly Val Trp Thr Ala Tyr Tyr Pro Asn Thr Asn Gln Thr Ser
 50 55 60
 Ile Thr Ile Tyr Gly Gly Val Lys Pro Tyr Thr Val Ser Ser Asn Ser
 65 70 75 80
 Asp Ile Leu Lys Val Asn Met Asp Lys Leu Ser Asp Ala Phe Asn Tyr
 85 90 95
 Glu Thr Leu Gly Val Gly Asp Ala Glu Val Thr Ile Thr Asp Ala Lys
 100 105 110
 Gly Glu Ser Val Gly Leu Lys Val Lys Ile Asp Tyr Arg Ser Asp Lys
 115 120 125
 Met Lys Ile Val Lys Leu Asp Ala Tyr Val Lys Gly Asp Lys Met Thr
 130 135 140
 Val Ala Ala Gln Lys Glu Leu Lys Glu Lys Ala Leu Ala Ser Ile Pro
 145 150 155 160
 Val Lys Ala Gly Gly Gly Tyr Gln Phe Ile Tyr Thr Lys Asp Gln Gly
 165 170 175
 Gly Ile Val Tyr Val Tyr Pro Asp Lys Tyr Gly Glu Lys Tyr Lys Glu
 180 185 190

Gly Thr Phe Thr Arg Ser Ser Leu Ala Val Gly Asn Ser Ser Tyr Arg
 195 200 205
 Lys Tyr Glu Ile Lys Leu Asp Gly Met Glu Arg Thr Tyr Ile Val Gln
 210 215 220
 Arg Tyr Tyr Pro Ser Lys Thr Arg Ser Val Ala Met Val Pro Tyr Gly
 225 230 235 240
 Phe Tyr Glu Asp Leu Leu Asp Gln Phe Thr Asp Asp Tyr Pro Glu Val
 245 250 255
 Glu Ser Val Tyr Thr Met Gln Val Val Ser Ala Val Phe
 260 265

<210> 6933
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 6933
 Tyr Met Lys Lys Tyr Ile Tyr Ala Phe Phe Phe Ala Ser Leu Ile Ile
 1 5 10 15
 Val Ala Leu Gly Leu Lys Ala Lys Ile Lys Ser Asp Thr Glu Phe Ser
 20 25 30
 Glu Leu Thr Leu Ser Asn Ile Glu Ala Leu Gly Met Glu Glu Thr Asp
 35 40 45
 Gly Ala Lys Asp Tyr Trp Cys Cys Gly Asn Glu Asp Val Cys Ala Glu
 50 55 60
 Gly Pro His Tyr Lys Ile Lys Gly Lys Leu Lys Glu Asn Pro Cys Lys
 65 70 75 80

<210> 6934
 <211> 299
 <212> PRT
 <213> B.fragilis

<400> 6934
 Ser Ser Arg Asn Thr Leu Asn Lys Val Val Leu Arg Asn Lys Ile Asp
 1 5 10 15
 Lys Ile Arg Leu Leu Phe Cys Lys Asp Arg Glu Ser Tyr Ser Cys Phe
 20 25 30
 Tyr Arg Ile Leu Gly Phe Tyr Pro Arg Asn Ile Arg Leu Tyr Glu Gln
 35 40 45
 Ala Leu Leu His Lys Ser Thr Ala Val Arg Ser Glu Lys Gly Arg Pro
 50 55 60
 Leu Asn Asn Glu Arg Leu Glu Phe Leu Gly Asp Ala Ile Leu Asp Ala
 65 70 75 80
 Ile Val Gly Asp Ile Val Tyr Gln His Phe Glu Gly Lys Arg Glu Gly
 85 90 95
 Phe Leu Thr Asn Thr Arg Ser Lys Ile Val Gln Arg Glu Thr Leu Asn
 100 105 110
 Lys Leu Ala Val Glu Ile Gly Leu Asp Lys Leu Ile Lys Tyr Ser Thr
 115 120 125
 Arg Ser Ser Ser His Asn Ser Tyr Met Tyr Gly Asn Ala Phe Glu Ala
 130 135 140
 Phe Ile Gly Ala Ile Tyr Leu Asp Arg Gly Tyr Glu Cys Cys Lys Gln
 145 150 155 160
 Phe Met Glu Arg Arg Ile Ile Glu Pro Tyr Ile Asp Leu Asp Lys Leu
 165 170 175
 Ser Arg Lys Glu Val Asn Phe Lys Ser Lys Leu Ile Glu Trp Ser Gln
 180 185 190
 Lys Asn Lys Met Glu Val Ser Phe Glu Leu Ile Glu Gln Ser Leu Asp

195 200 205
 Lys Glu Asn Asn Pro Val Phe Gln Thr Glu Val Arg Ile Glu Gly Ile
 210 215 220
 Leu Gly Gly Ser Gly Thr Gly Tyr Ser Lys Lys Glu Ser Gln Gln Asn
 225 230 235 240
 Ala Ala Gln Met Thr Leu Lys Lys Ile Lys Gly Asp Pro Glu Phe Met
 245 250 255
 Ala Ser Val Gln Glu Ala Lys Thr Gln Asn Asn Val Pro Ala Glu Asp
 260 265 270
 Thr Thr Pro Glu Ser Glu Met Ser Leu Thr Ala Glu Asn Gln Gln Ile
 275 280 285
 Asp Glu Ile Ile Ser Thr Glu Glu Ile Ser Val
 290 295

<210> 6935

<211> 101

<212> PRT

<213> B.fragilis

<400> 6935

Asn Val Leu Asn Met Glu Ile Val Ser Ile Glu Lys Lys Thr Phe Glu
 1 5 10 15
 Met Met Val Ala Ser Phe Asn Ala Leu Ser Glu Lys Val Ala Ala Leu
 20 25 30
 Arg Arg Lys Ser Asp Gly Gly Arg Leu Glu Arg Trp Leu Thr Gly Glu
 35 40 45
 Glu Val Cys Gly Gln Leu Arg Ile Ser Pro Arg Thr Leu Gln Thr Leu
 50 55 60
 Arg Asp Lys Arg Leu Ile Gly Tyr Ser Gln Ile Asn Arg Arg Phe Tyr
 65 70 75 80
 Tyr Lys Pro Glu Glu Val Arg Arg Leu Ile Pro Leu Ile Gly Thr Leu
 85 90 95
 Tyr Pro Gly Gly Arg
 100

<210> 6936

<211> 637

<212> PRT

<213> B.fragilis

<400> 6936

Lys Gln Leu Asn Asn Arg Lys Met Arg Lys Trp Arg Ile Glu Asp Ser
 1 5 10 15
 Glu Glu Leu Tyr Asn Ile Thr Gly Trp Gly Thr Ser Tyr Phe Gly Ile
 20 25 30
 Asn Asp Lys Gly His Val Val Val Thr Pro Arg Lys Asp Gly Val Ala
 35 40 45
 Val Asp Leu Lys Glu Leu Val Asp Glu Leu Gln Leu Arg Asp Val Ala
 50 55 60
 Ala Pro Met Leu Val Arg Phe Pro Asp Ile Leu Asp Asn Arg Ile Glu
 65 70 75 80
 Lys Thr Ala Tyr Cys Phe Lys Gln Ala Ser Glu Glu Tyr Gly Tyr Lys
 85 90 95
 Ala Gln Asn Phe Ile Ile Tyr Pro Ile Lys Val Asn Gln Met Arg Pro
 100 105 110
 Val Val Glu Glu Ile Ile Ser His Gly Lys Lys Phe Asn Leu Gly Leu
 115 120 125
 Glu Ala Gly Ser Lys Pro Glu Leu His Ala Val Ile Ala Val Asn Thr
 130 135 140

610 615 620
 Asn Tyr Arg Ser Gly Leu Tyr Gly Tyr Thr Tyr Leu Glu
 625 630 635

<210> 6937

<211> 488

<212> PRT

<213> B.fragilis

<400> 6937

Leu Ile Met Lys Lys Leu Phe Tyr Trp Ile Leu Ser Ser Ile Val Leu
 1 5 10 15
 Phe Ser Cys Ser Glu Thr Glu Leu Leu Asp Asn Ser Ile Asp Asp Gln
 20 25 30
 Leu Ile Thr Thr Arg Ala Ser Gly Asp Gly Leu Tyr Asp Val Leu Gly
 35 40 45
 Tyr Gly Tyr Asp Ile Thr Lys Glu Tyr Leu His Pro Met Ser Val Cys
 50 55 60
 Asn Pro Val Leu Asp Ile Glu Lys Tyr Lys Gln Asp Tyr Gly Glu Arg
 65 70 75 80
 Leu Val Thr Gly Thr Pro Ser Phe Gly Gly Asp Gln Met Tyr Tyr Gly
 85 90 95
 Tyr Ser Ala Phe Asp Tyr Leu Lys Asp Met Thr Lys Glu Thr Lys Ala
 100 105 110
 Ser Leu Gln Val Ser Asp Thr Ala Lys Gln Ala Ala Tyr Ser Gly Ser
 115 120 125
 Ile Ala Gly Gly Thr Tyr Phe Lys Ser Ala Tyr Ser Tyr Ser Ser Lys
 130 135 140
 Tyr Ser Phe Ala Ser Ile Asp Ala Val Arg Lys Leu Lys Tyr Ile Arg
 145 150 155 160
 Ile Asn Asp Glu Lys Ser Arg Leu Met Asn Tyr Leu Ser Ser Ser Phe
 165 170 175
 Lys Glu Asp Leu Asn Arg Leu Pro Ala Glu Lys Leu Val Lys Arg Tyr
 180 185 190
 Gly Thr His Val Leu Thr Asn Phe Thr Ile Gly Gly Arg Tyr Lys Leu
 195 200 205
 Leu Phe Arg Ser Val Ile Thr Asn Thr Thr Glu Asn Ser Val Lys Arg
 210 215 220
 Lys Thr Ile Ala Ser Gly Leu Lys Ala Leu Val Gly Asp Ile Gly Ile
 225 230 235 240
 Gly Val Asn Phe Asp Arg Asn Val Glu Thr Ser Glu Thr Leu Thr Arg
 245 250 255
 Glu Asn Lys His Arg Met Leu Tyr Val Leu Phe Tyr Gly Gly Thr Gly
 260 265 270
 Thr Ser Leu Val Tyr Asp Leu Glu Lys Gly Leu Pro Thr Arg Ile Asp
 275 280 285
 Ile Gln His Trp Glu Ser Thr Val Asn Leu Thr Asn Ala Asn Leu Thr
 290 295 300
 Asp Ile Asn Trp Glu Glu Thr Tyr Pro Ile Tyr Glu Phe Ile Gln Asp
 305 310 315 320
 Pro Gln Lys Arg Ala Glu Val Lys Asn Ala Val Asp Gln Tyr Ile Ala
 325 330 335
 Gly Gln Gln Ile Lys Val Leu Glu Leu Arg Pro Met Tyr Arg Met His
 340 345 350
 Ser Lys Arg Gln Lys Asn Thr Phe Tyr Val Phe Thr Lys Ser Asp Ala
 355 360 365
 Asp Tyr Ile Ser Lys Lys Trp Gly Asp Glu Ser Asn Gly Ile Asp Gly
 370 375 380
 Tyr Ile Cys Val Asn Pro Glu Pro Asn Thr Lys Pro Met Tyr Ser Leu

385		390		395		400
Phe Ser Lys Arg Ser	Glu Asn Thr Phe Tyr Val Tyr Asp Lys Ala Glu					
	405		410		415	
Val Asp Tyr Ile Val	His Lys Trp Gly Asp Thr Phe Tyr Gly Leu Asp					
	420		425		430	
Gly Tyr Met Leu Thr	Lys Pro Glu Asp Asn Thr Lys Pro Val Tyr Cys					
	435		440		445	
Leu His Ser Asn Arg	Ala Lys Asn Thr Phe Phe Val Phe Asp Lys Gly					
	450		455		460	
Glu Ala Asp Arg Ile	Val Arg Glu Phe Gly Asp Thr Tyr Lys Gly Leu					
465	470		475		480	
Val Gly Tyr Phe Tyr	Asp Ala Asp					
	485					

<210> 6938
 <211> 350
 <212> PRT
 <213> B.fragilis

<400> 6938

Pro Ile Met Lys Val	Ile Val Asp Asn Lys Ile Pro Tyr Ile Arg Glu
1	5 10 15
Ala Ile Glu Gln Ile	Ala Asp Glu Val Ile Tyr Ala Pro Gly Lys Asp
	20 25 30
Phe Thr Pro Glu Leu	Val Gln Asp Ala Asp Ala Leu Ile Ile Arg Thr
	35 40 45
Arg Thr Arg Cys Asp	Arg Ser Leu Leu Ala Gly Ser Lys Val Lys Phe
	50 55 60
Ile Ala Thr Ala Thr	Ile Gly Phe Asp His Ile Asp Thr Ala Tyr Cys
65	70 75 80
Arg Glu Ala Gly Ile	Thr Trp Thr Asn Ala Pro Gly Cys Asn Ser Ala
	85 90 95
Ser Val Ala Gln Tyr	Ile Gln Ser Ala Leu Phe Ile Leu Gln Gln Thr
	100 105 110
Arg Gly Met Lys Leu	Asn Gln Met Thr Ile Gly Ile Val Gly Val Gly
	115 120 125
Asn Val Gly Ser Lys	Val Ala Asp Val Ala Arg Lys Leu Gly Ile Gln
	130 135 140
Val Met Leu Asn Asp	Leu Pro Arg Glu Glu Arg Glu Glu Ser Thr Met
145	150 155 160
Phe Ala Ser Leu Lys	Ser Ile Ala Glu Lys Cys Asp Ile Ile Thr Phe
	165 170 175
His Val Pro Leu Tyr	Lys Glu Gly Lys Tyr Lys Thr Tyr His Leu Ala
	180 185 190
Asp Lys His Phe Phe	His Ser Leu Lys Lys Gly Ala Val Ile Met Asn
	195 200 205
Thr Ser Arg Gly Glu	Val Ile Glu Thr Glu Ala Leu Leu Glu Ala Leu
	210 215 220
Arg Ser Gly Ile Leu	Ser Asp Ala Val Ile Asp Val Trp Glu His Glu
225	230 235 240
Pro Asp Ile Asp Leu	Glu Leu Glu Lys Val Ile Ile Gly Thr Pro
	245 250 255
His Ile Ala Gly Tyr	Ser Ala Asp Gly Lys Ala Asn Ala Thr Arg Met
	260 265 270
Ser Leu Glu Ala Leu	Cys Arg Phe Phe Leu Ile Glu Thr Asp Tyr Arg
	275 280 285
Ile Thr Pro Pro Glu	Pro Lys Asn Lys Leu Ile Ser Thr Ala Thr Tyr
	290 295 300
Glu Glu Ala Ser Leu	Met Ile Tyr Asp Pro Arg Arg Asp Ser Asp Ala

305 310 315 320
 Leu Lys Ser His Pro Gly Leu Phe Glu Gln Leu Arg Gly Asp Tyr Pro
 325 330 335
 Leu Arg Arg Glu Glu Gly Ala Tyr Arg Ile Val Ile Thr Lys
 340 345 350

<210> 6939
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 6939
 Gln Asp Met Asn Tyr Phe Leu Leu Ala Glu Thr Asp Phe Phe Arg Arg
 1 5 10 15
 Ile Asn Glu Ala Gly Asp Cys Asn Met Glu Lys Ala Tyr Thr Val Phe
 20 25 30
 Ala Thr Gln Val Ile Glu Leu Cys Ile Gly Ser Pro Asp Thr Asn Arg
 35 40 45
 Thr Ile Ile Ala Leu Ala Tyr Ile Glu Ile Glu Leu Gln His His Pro
 50 55 60
 Val His Asn Leu Pro Glu Lys Lys Glu Ile Ala Asn Tyr Val Ser
 65 70 75 80
 Lys Ala Leu Ser Phe Val Arg Lys Met Gln Lys Phe Leu Ala Ala Pro
 85 90 95
 Gln Val Pro Pro Leu Ile Pro Ile Gln Thr Ser Thr Asp Asn Thr Asn
 100 105 110
 Asp Asn Thr Ala Ser Pro Leu Gln Trp Thr Gly Asn Ala Ile Asp Leu
 115 120 125
 Val Glu Leu Ile Tyr Gly Ile Asn Glu Met Gly Cys Ile Asn Asn Gly
 130 135 140
 Asn Met Pro Leu Lys Gln Leu Ala Pro Leu Leu Tyr Lys Ile Phe Gly
 145 150 155 160
 Val Glu Ser Lys Asp Cys Tyr Arg Phe Tyr Ile Asp Ile Lys Arg Arg
 165 170 175
 Lys Asn Glu Ser Arg Thr Tyr Phe Leu Asp Lys Met Gln Glu Lys Leu
 180 185 190
 Asn Glu Lys Met Leu Arg Asp Glu Glu Met Glu Arg Met Arg Arg
 195 200 205

<210> 6940
 <211> 263
 <212> PRT
 <213> B.fragilis

<400> 6940
 Phe Val Met Lys Glu Lys Met Lys Glu Lys Leu Thr Val Ile Lys Val
 1 5 10 15
 Gly Gly Lys Ile Val Glu Glu Glu Ala Thr Leu Asn Gln Leu Leu Asn
 20 25 30
 Asp Phe Ala Ala Ile Glu Gly His Lys Val Leu Val His Gly Gly Gly
 35 40 45
 Arg Ser Ala Thr Lys Ile Ala Ala Gln Leu Gly Ile Asp Ser Lys Met
 50 55 60
 Val Asn Gly Arg Arg Ile Thr Asp Ala Glu Thr Leu Lys Val Val Thr
 65 70 75 80
 Met Val Tyr Gly Gly Leu Val Asn Lys Asn Ile Val Ala Gly Leu Gln
 85 90 95
 Ala Arg Gly Val Asn Ala Leu Gly Leu Thr Gly Ala Asp Met Asn Val
 100 105 110

Ile Arg Ser Met Lys Arg Pro Val Lys Glu Val Asp Tyr Gly Phe Val
 115 120 125
 Gly Asp Val Glu Arg Val Asp Ser Thr Leu Leu Ser Asp Leu Ile His
 130 135 140
 Lys Gly Val Val Pro Val Met Ala Pro Leu Thr His Asp Gly Gln Gly
 145 150 155 160
 Asn Met Leu Asn Thr Asn Ala Asp Thr Ile Ala Gly Glu Thr Ala Lys
 165 170 175
 Ala Leu Ser Ala Ile Phe Asp Val Thr Leu Val Tyr Cys Phe Glu Lys
 180 185 190
 Lys Gly Val Leu Arg Asp Glu Asn Asp Asp Glu Ser Val Ile Pro Gln
 195 200 205
 Ile Asn His Ala Glu Phe Gln Arg Tyr Ile Ala Glu Gly Val Ile Gln
 210 215 220
 Gly Gly Met Ile Pro Lys Leu Glu Asn Ser Phe Glu Ala Ile Asn Ala
 225 230 235 240
 Gly Val Ser Glu Val Val Ile Thr Leu Ala Ser Ala Ile His Thr Asp
 245 250 255
 Gly Gly Thr Arg Ile Lys Lys
 260

<210> 6941
 <211> 505
 <212> PRT
 <213> B.fragilis

<400> 6941
 Arg Ala Met Asn Ile Thr Lys Ile Ile Ser Lys Val Phe Asp Ser Arg
 1 5 10 15
 Leu Lys Ala Ile Asp Leu Tyr Asp Thr Gln Ala Gly Glu Ile Gln His
 20 25 30
 Arg Val Leu Thr Arg Leu Val Lys Gln Ala Glu Asn Thr Glu Trp Gly
 35 40 45
 Lys Lys Tyr Asp Tyr Lys Ser Ile Arg Asn Tyr Glu Asp Phe Lys Asn
 50 55 60
 Arg Leu Pro Ile Gln Thr Tyr Glu Glu Val Lys Pro Tyr Val Glu Arg
 65 70 75 80
 Leu Arg Ala Gly Glu Gln Asn Leu Leu Trp Pro Ser Glu Ile Arg Trp
 85 90 95
 Phe Ala Lys Ser Ser Gly Thr Thr Asn Asp Lys Ser Lys Phe Leu Pro
 100 105 110
 Val Ser Lys Glu Ala Leu Glu Asp Ile His Tyr Arg Gly Gly Lys Asp
 115 120 125
 Ala Ala Ala Ile Tyr Phe Arg Met Asn Pro Glu Ser Arg Phe Phe Ser
 130 135 140
 Gly Lys Gly Leu Ile Leu Gly Gly Ser His Ser Pro Asn Leu Asn Ser
 145 150 155 160
 Asn His Ser Leu Val Gly Asp Leu Ser Ala Ile Leu Ile Gln Asn Val
 165 170 175
 Ser Pro Leu Ile Asn Leu Ile Arg Val Pro Ser Lys Gln Ile Ala Leu
 180 185 190
 Met Asp Glu Trp Glu Ala Lys Ile Glu Ala Ile Ala Asn Ser Thr Ile
 195 200 205
 Pro Val Asp Val Thr Asn Leu Ser Gly Val Pro Ser Trp Met Leu Val
 210 215 220
 Leu Ile Lys Arg Ile Leu Glu Lys Thr Gly Lys Gln Thr Leu Glu Glu
 225 230 235 240
 Val Trp Pro Asn Leu Glu Val Phe Phe His Gly Gly Val Ala Phe Thr
 245 250 255

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Pro Tyr Arg Glu Gln Tyr Arg Gln Val Ile His Ser Ser Lys Met His
      260                      265                      270
Tyr Val Glu Thr Tyr Asn Ala Ser Glu Gly Tyr Phe Gly Thr Gln Asn
      275                      280                      285
Asp Leu Ser Asp Pro Ser Met Leu Leu Met Ile Asp Tyr Gly Val Phe
      290                      295                      300
Tyr Glu Phe Ile Pro Leu Glu Asp Val Glu Lys Glu Asn Pro Arg Thr
      305                      310                      315                      320
Tyr Cys Leu Glu Glu Val Glu Leu Asn Lys Asn Tyr Ala Met Val Ile
      325                      330                      335
Ser Thr Ser Cys Gly Leu Trp Arg Tyr Met Ile Gly Asp Thr Val Lys
      340                      345                      350
Phe Thr Arg Lys Asn Pro Tyr Lys Phe Val Ile Thr Gly Arg Thr Lys
      355                      360                      365
His Phe Ile Asn Ala Phe Gly Glu Glu Leu Ile Val Asp Asn Ala Glu
      370                      375                      380
Lys Gly Leu Ala Lys Ala Cys Ala Glu Thr Gly Ala Gln Val Ser Glu
      385                      390                      395                      400
Tyr Ser Ala Ala Pro Val Phe Met Asp Ala Asn Ala Lys Cys Arg His
      405                      410                      415
Gln Trp Leu Ile Glu Phe Ala Lys Met Pro Asp Ser Ile Glu Lys Phe
      420                      425                      430
Ala Met Ile Leu Asp Ala Thr Leu Lys Glu Val Asn Ser Asp Tyr Glu
      435                      440                      445
Ala Lys Arg Trp Lys Asp Ile Ala Leu Gln Pro Leu Glu Val Ile Val
      450                      455                      460
Ala Arg Lys Gly Leu Phe His Asp Trp Leu Ala Lys Lys Gly Lys Leu
      465                      470                      475                      480
Gly Gly Gln His Lys Val Pro Arg Leu Ser Asn Thr Arg Asp Tyr Ile
      485                      490                      495
Glu Glu Met Ile Ala Leu Asn Glu Arg
      500                      505

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<210> 6942
<211> 173
<212> PRT
<213> B.fragilis

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<400> 6942
Arg Leu Met Asn Met Asp Tyr Lys Tyr Ile Glu Gln Leu Leu Glu Arg
1      5      10      15
Tyr Trp Gln Cys Glu Thr Ser Leu Glu Glu Glu Ser Glu Leu Arg Ser
      20      25      30
Phe Phe Ser Glu Glu Glu Val Pro Ala His Leu Leu Arg Tyr Lys Glu
      35      40      45
Leu Phe Val Tyr Gln Thr Val Gln Gln Glu Ala Gly Leu Gly Lys Asp
      50      55      60
Phe Asp Ala Arg Ile Leu Ala Gln Val Glu Ala Pro Val Val Lys Ala
      65      70      75      80
Lys His Leu Thr Met Val Gly Arg Phe Met Pro Leu Phe Lys Ala Ala
      85      90      95
Ala Val Val Ala Leu Ile Leu Ser Leu Gly Asn Val Ala Gln His Thr
      100     105     110
Phe Phe Ala Glu Glu Ala Leu Asp Tyr Asn Tyr Asp Ala Tyr Lys Asp
      115     120     125
Thr Tyr Asp Asp Pro Glu Val Ala Tyr Lys Gln Val Ser Ser Ala Leu
      130     135     140
Met Met Leu Ser Glu Gly Ile Asn Lys Ser Gln Asp Gln Val Val Arg
      145     150     155     160

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<210> 6943
<211> 136
<212> PRT
<213> B.fragilis
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<210> 6944
<211> 599
<212> PRT
<213> B.fragilis
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<400> 6944																
His	Pro	Gln	Asn	Lys	Ser	Met	Asp	Ile	Gln	Leu	Ser	Ala	Gln	Gln	Gln	
1				5					10					15		
Ala	Val	Val	Asp	Cys	Asn	Glu	Pro	Arg	Ile	Val	Val	Lys	Ala	Cys	Pro	
			20					25					30			
Gly	Ser	Gly	Lys	Thr	Phe	Ser	Val	Ala	Ala	Arg	Met	Ala	Lys	Leu	Leu	
		35					40					45				
Gln	Glu	Asn	Asn	Leu	Ser	Arg	His	Gln	Gly	Ile	Ala	Ala	Ile	Ser	Phe	
	50					55					60					
Thr	Asn	Thr	Ala	Cys	Glu	Val	Ile	Gln	Lys	Glu	Leu	Lys	Glu	Thr	Phe	
65					70					75					80	
Gly	Cys	Arg	Asn	Ile	Asp	Tyr	Pro	Ser	Phe	Ile	Gly	Thr	Ile	Asp	Ser	
			85						90					95		
Phe	Ile	Asn	Thr	Tyr	Ile	Phe	Leu	Pro	Tyr	Ala	His	Leu	Val	Met	Gly	
		100						105					110			
Cys	Asn	Tyr	Arg	Pro	Glu	Ile	Val	Gly	Thr	Thr	Phe	Asn	Lys	Trp	Phe	
		115					120					125				
Asp	Tyr	Asp	Pro	Thr	Gln	Thr	Arg	Tyr	Ile	Arg	Gly	Lys	Leu	Gly	Glu	
	130					135					140					
Arg	Ile	Ile	Thr	Ser	Arg	Asp	Ala	Asn	Tyr	Tyr	Phe	Asp	Leu	Ile	Ser	
145				150						155					160	
Phe	Gly	Leu	Asn	Asp	Gln	Leu	Leu	Arg	Leu	Ala	Pro	Tyr	Gln	Ala	Tyr	
			165						170					175		
His	Phe	Gly	Lys	Ala	Asp	Trp	Asp	Asn	Pro	Asn	Lys	Lys	Asp	Gly	Ser	
		180						185					190			
Pro	Lys	Lys	Val	Ile	Ser	Glu	Leu	Lys	Glu	Met	Lys	Trp	Lys	His	Phe	

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      195              200              205
Asn Ala Gly Lys Val Asn Gln Ala Asp Ala Ile Tyr Phe Thr Phe Arg
  210              215              220
Ile Leu Asp Lys Tyr Pro Ser Ile Ala Gln Asn Ile Val Arg Arg Phe
  225              230              235              240
Pro Ile Leu Ile Ile Asp Glu Ala Gln Asp Thr Thr Glu Leu Gln Met
      245              250              255
Ala Ile Ile Asp Lys Leu Ser Gln Cys Gly Ala Glu Ser Ile Met Leu
      260              265              270
Ile Gly Asp Pro Asp Gln Ala Ile Phe Glu Trp Asn Thr Ala Asn Pro
      275              280              285
His Leu Phe Met Glu Lys Tyr Asn Ser Pro Asp Trp His Ser Leu Asp
      290              295              300
Leu Ser Glu Asn Arg Arg Ser Ser Glu Lys Ile Cys Gln Leu Ala Asn
  305              310              315              320
His Phe Ser Gly Asn Glu Met Cys Ser Ile Ala Ser Asp Lys Asp Tyr
      325              330              335
Thr Asp Glu Pro Cys Ile Lys Gly His Leu Asp Thr Pro Glu Ser Val
      340              345              350
Asn Gln Ile Thr Asn His Phe Ile Glu Lys Cys Asn Glu Met Gly Leu
      355              360              365
Asp Glu Ser Glu Tyr Ala Val Phe Arg Gly Gln Lys Phe Gly Glu
  370              375              380
Thr Asn Phe Gly Leu Val Asn Asn Asp Asn Ser Ser Lys Gln Asn Ser
  385              390              395              400
Pro Trp Ile Asn Gly His Tyr Gly Val Arg Asp Ile Val Tyr Gly Lys
      405              410              415
Tyr Leu Ile Asp His Gly Lys Tyr Thr Asp Gly Leu Ser Leu Ile Glu
      420              425              430
Lys Gly Cys Tyr Lys Ile Thr Lys Arg Val Arg Tyr Val Ser Ser Ser
      435              440              445
Thr Met Arg Arg Glu Ile Ala Glu Val Gly Phe Arg Arg His Arg Ala
      450              455              460
Glu Met Phe Asp Phe Ile Gln Lys Leu Pro Ser Thr Asn Asp Thr Leu
  465              470              475              480
Ser Asn Trp Ile Thr Lys Leu Gln Gln Met Gly Ile Asn Leu Thr Val
      485              490              495
Asp Leu Gly Lys Ala Asn Val Arg Ile Glu Ser Leu Phe Arg Thr Val
      500              505              510
Asn His Gln Phe Arg Gln Glu Arg Pro Tyr Leu Lys Thr Ile His Ser
      515              520              525
Val Lys Gly Met Thr Leu Glu Ala Ile Leu Val Phe Leu Ser Lys Lys
      530              535              540
Ala Val His Thr Asn Tyr Thr Thr Ile Leu Asn Asn Pro Ala Lys Tyr
  545              550              555              560
Ser Val Asp Asn Asn Glu Glu Leu Arg Ile Val Tyr Val Ala Cys Thr
      565              570              575
Arg Pro Lys Lys Leu Leu Trp Ile Ala Val Pro Ser Asp Asp Ile Asp
      580              585              590
Cys Trp Arg Asn Lys Leu Phe
      595

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<210> 6945
 <211> 489
 <212> PRT
 <213> B.fragilis

<400> 6945
 Ile Lys Phe Asp Gly Met Thr Lys Pro Leu Val Ser Val Val Ile Pro

1	5	10	15
Val Tyr Asn Met Glu Glu Phe Leu Glu Glu Thr Leu Asp Ser Val Leu			
	20	25	30
Ser Ser Asp Tyr Pro Asn Phe Glu Val Ile Val Met Asp Asp Gly Ser			
	35	40	45
Lys Asp Arg Ser Leu Glu Ile Ala Glu Ser Tyr Lys Ser Arg Tyr Glu			
	50	55	60
Asn Val Arg Val Tyr Thr Gln Val Asn Ser Gly Val Ala Thr Ala Arg			
65	70	75	80
Asn His Ala Ile Ser Lys Ala Gly Gly Val Tyr Ile Leu Pro Val Asp			
	85	90	95
Ala Asp Asn Arg Ile Ser Lys Glu Leu Ile His Ser Ala Val Asp Ile			
	100	105	110
Leu Glu Ser Glu Pro Glu Val Lys Val Val Cys Pro Arg Ala Glu Phe			
	115	120	125
Phe Gly Asp Arg Ser Gly Glu Trp Val Leu Pro Pro Phe Ser Leu Ser			
	130	135	140
Leu Leu Ala Arg Lys Asn Met Met Asp Thr Cys Ala Val Tyr Arg Lys			
145	150	155	160
Ser Glu Trp Glu Arg Ile Gly Gly Tyr Cys Ala Glu Ile Val Ala Arg			
	165	170	175
Glu Asp Trp Glu Phe Trp Ile Ser Met Leu Lys Asp Gly Gly Lys Val			
	180	185	190
Val Lys Leu Pro Glu Ile Gly Leu Phe Tyr Arg Val Arg Glu Gln Ser			
	195	200	205
Lys Arg Val Thr Asp Arg Leu Leu Lys Lys His Val Ile Asp Val Leu			
	210	215	220
Asn Arg Arg His Pro Asp Phe Phe Glu Arg Glu Leu Gly Gly Pro Leu			
225	230	235	240
Arg Tyr Gln Arg Ser Trp Ser Arg Leu Ile Asn Arg Ile Ser Arg Ile			
	245	250	255
Ile His Pro Arg Arg Val Phe Val Gly Asp Asp Phe Gln Asp Leu Ser			
	260	265	270
Ser Phe Val Arg Val Leu Pro Val His Phe Glu Asn Gly Gly Thr Leu			
	275	280	285
Ile Tyr Glu Gly Arg Asn Lys Leu Lys Glu Phe Glu Ile His Gly Arg			
	290	295	300
Lys Leu Ile Val Lys Ser Tyr Gln Leu Pro His Leu Ile Asn Arg Val			
305	310	315	320
Val Tyr Asn Ser Phe Arg Ala Ser Lys Ala Arg Arg Ser Tyr Gln Tyr			
	325	330	335
Ala Gln Met Leu Arg Lys Ala Gly Ile Gly Ser Pro Ala Pro Val Gly			
	340	345	350
Phe Tyr Ser Thr Gly Thr Trp Leu Leu Phe Gly Arg Ser Tyr Phe Val			
	355	360	365
Ser Leu Lys Ser Glu Cys Pro Tyr Thr Tyr Arg Asn Leu Leu Glu Glu			
	370	375	380
Thr Phe Thr Gly Asp Lys Glu Lys Val Leu Arg Ala Ile Ala Arg Thr			
385	390	395	400
Thr Ala Ala Leu His Glu Asn Gly Phe Leu His Lys Asp Tyr Ser Gly			
	405	410	415
Gly Asn Ile Leu Phe Arg Glu Thr Asp Lys Gly Ile Glu Val Glu Ile			
	420	425	430
Ile Asp Leu Asn Arg Met Arg Phe Gly Lys Val Asp Ile Glu Thr Gly			
	435	440	445
Cys Lys Asn Phe Glu Arg Leu Pro Gly Thr His Glu Met Phe Val Ile			
	450	455	460
Leu Ala Asp Glu Tyr Ala Lys Val Arg Gly Phe Asp Ala Asp Arg Cys			
465	470	475	480

Leu Glu Leu Ile Glu Lys Ser His Leu
485

<210> 6946
<211> 343
<212> PRT
<213> B.fragilis

<400> 6946

Leu Phe Asn Asp Met Asn Asp Ser Leu Leu Tyr Lys Leu Ser Ser Gly
1 5 10 15
Lys Pro Pro Lys Phe Ile Tyr Phe Ile Ser Asn Thr Leu Asn Met Leu
20 25 30
Ile Pro Asn Ala Phe Tyr Arg Tyr Lys Leu Lys Ser Thr Leu Ala Gln
35 40 45
Leu Gln Tyr Arg Ser Asp Lys Asp Tyr Ile Glu Glu Arg Val Asn Tyr
50 55 60
Tyr Asn Lys Leu Ser Ser Pro Ser Ser Leu Pro Glu Lys Ser Phe Ile
65 70 75 80
Lys Asn Glu Phe Arg Tyr Leu Ile Phe Leu Gly Thr Leu Ala Asp Asn
85 90 95
Lys Lys Ser Leu Phe His Thr Ala Tyr Phe Phe Asp Thr Arg Glu Tyr
100 105 110
Thr Arg Trp Phe Lys Gln Ser Leu Arg Trp Gly Tyr Cys Pro Gly Asp
115 120 125
Val Tyr Phe Thr Pro Glu Phe Pro Ser Ile Val Lys Ser Arg Leu Leu
130 135 140
Thr Asp Ser Asn Asp Asn Ser Val Val Met Lys Leu Asp Lys Phe Arg
145 150 155 160
His Phe Met Phe Val Asn Asp Thr Met Pro Phe Ser Ser Lys Lys Asp
165 170 175
Met Val Ile Phe Arg Gly Lys Ile Arg Arg Ser Arg Thr Arg Lys Leu
180 185 190
Phe Leu Glu Met Tyr Met Asp His Pro Met Cys Asp Cys Gly Val Val
195 200 205
Gly Lys Asp Glu Gly Val Pro Asp Ala Trp Met Thr Pro Lys Lys Thr
210 215 220
Ile Arg Gln His Leu Asp Tyr Lys Phe Ile Met Ala Leu Glu Gly Asn
225 230 235 240
Asp Val Ala Ser Asn Leu Lys Trp Val Met Ser Ser Asn Ser Ile Ala
245 250 255
Val Met Pro Arg Pro Thr Cys Glu Thr Trp Phe Met Glu Gly Lys Leu
260 265 270
Ile Pro Asn Tyr His Tyr Ile Glu Ile Lys Pro Asp Phe Thr Asp Leu
275 280 285
Glu Glu Arg Leu Lys His Tyr Ile Glu His Pro Glu Glu Ala Gln Gln
290 295 300
Ile Ile Glu His Ala His Glu Tyr Val Ala Gln Phe Arg Asn Pro Arg
305 310 315 320
Arg Glu Lys Leu Ile Ser Leu Leu Val Leu Asp Lys Tyr Phe Arg Met
325 330 335
Thr Gly Gln Asn Ile Glu Asp
340

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<211> 658
<212> PRT
<213> B.fragilis

<400> 6947

Lys	Val	Arg	Phe	Asp	Asn	Ala	Ser	Ile	Val	Val	Tyr	Tyr	Cys	Leu	Ile
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Gln	Met	Asn	Ile	Ile	Asn	Leu	Gly	Ile	Leu	Ala	His	Ile	Asp	Ala	Gly
		20					25						30		
Lys	Thr	Ser	Val	Thr	Glu	Asn	Leu	Phe	Ala	Ser	Gly	Ala	Thr	Glu	
		35				40					45				
Lys	Cys	Gly	Arg	Val	Asp	Asn	Gly	Asp	Thr	Ile	Thr	Asp	Ser	Met	Asp
	50					55					60				
Ile	Glu	Lys	Arg	Arg	Gly	Ile	Thr	Val	Arg	Ala	Ser	Thr	Thr	Ser	Ile
65					70					75					80
Ile	Trp	Asn	Gly	Val	Lys	Cys	Asn	Ile	Ile	Asp	Thr	Pro	Gly	His	Met
			85						90					95	
Asp	Phe	Ile	Ala	Glu	Val	Glu	Arg	Thr	Phe	Lys	Met	Leu	Asp	Gly	Ala
			100					105					110		
Val	Leu	Ile	Leu	Ser	Ala	Lys	Glu	Gly	Ile	Gln	Ala	Gln	Thr	Lys	Leu
		115					120					125			
Leu	Phe	Asn	Thr	Leu	Gln	Lys	Leu	Gln	Ile	Pro	Thr	Ile	Ile	Phe	Ile
	130					135					140				
Asn	Lys	Ile	Asp	Arg	Asp	Gly	Val	Asn	Leu	Glu	Arg	Leu	Tyr	Leu	Asp
145					150					155					160
Ile	Lys	Thr	Asn	Leu	Ser	Gln	Asp	Val	Leu	Phe	Met	Gln	Thr	Val	Val
				165					170					175	
Asp	Gly	Leu	Val	Tyr	Pro	Ile	Cys	Ser	Gln	Thr	Tyr	Ile	Lys	Glu	Glu
			180					185					190		
Tyr	Lys	Glu	Phe	Val	Cys	Asn	His	Asp	Asp	Asn	Ile	Leu	Glu	Arg	Tyr
		195					200					205			
Leu	Ala	Asp	Ser	Glu	Ile	Ser	Pro	Ala	Asp	Tyr	Trp	Asn	Thr	Ile	Ile
	210						215					220			
Asp	Leu	Val	Ala	Lys	Ala	Lys	Val	Tyr	Pro	Val	Leu	His	Gly	Ser	Ala
225					230					235					240
Met	Phe	Asn	Ile	Gly	Ile	Asn	Glu	Leu	Leu	Asp	Ala	Ile	Ser	Ser	Phe
				245					250					255	
Ile	Leu	Pro	Pro	Glu	Ser	Val	Ser	Asn	Arg	Leu	Ser	Ala	Tyr	Leu	Tyr
		260						265					270		
Lys	Ile	Glu	His	Asp	Pro	Lys	Gly	His	Lys	Arg	Ser	Phe	Leu	Lys	Ile
		275					280					285			
Ile	Asp	Gly	Ser	Leu	Arg	Leu	Arg	Asp	Ile	Val	Arg	Ile	Asn	Asp	Ser
	290					295					300				
Glu	Lys	Phe	Ile	Lys	Ile	Lys	Asn	Leu	Lys	Thr	Ile	Tyr	Gln	Gly	Arg
305					310					315					320
Glu	Ile	Asn	Val	Asp	Glu	Val	Gly	Ala	Asn	Asp	Ile	Ala	Ile	Val	Glu
				325					330					335	
Asp	Met	Glu	Asp	Phe	Arg	Ile	Gly	Asp	Tyr	Leu	Gly	Thr	Lys	Pro	Cys
			340					345					350		
Leu	Ile	Gln	Gly	Leu	Ser	His	Gln	His	Pro	Ala	Leu	Lys	Ser	Ser	Val
		355					360					365			
Arg	Pro	Asp	Arg	Ser	Glu	Glu	Arg	Ser	Lys	Val	Ile	Ser	Ala	Leu	Asn
370						375					380				
Thr	Leu	Trp	Ile	Glu	Asp	Pro	Ser	Leu	Ser	Phe	Ser	Ile	Asn	Ser	Tyr
385					390					395					400
Ser	Asp	Glu	Leu	Glu	Ile	Ser	Leu	Tyr	Gly	Leu	Thr	Gln	Lys	Glu	Ile
			405						410					415	
Ile	Gln	Thr	Leu	Leu	Glu	Glu	Arg	Phe	Ser	Val	Lys	Val	His	Phe	Asp
		420						425					430		
Glu	Ile	Lys	Thr	Ile	Tyr	Lys	Glu	Arg	Pro	Val	Lys	Lys	Val	Asn	Lys
		435					440					445			
Ile	Ile	Gln	Ile	Glu	Val	Pro	Pro	Asn	Pro	Tyr	Trp	Ala	Thr	Ile	Gly
450						455						460			

Leu Thr Leu Glu Pro Leu Pro Leu Gly Thr Gly Leu Gln Ile Glu Ser
 465 470 475 480
 Asp Ile Ser Tyr Gly Tyr Leu Asn His Ser Phe Gln Asn Ala Val Phe
 485 490 495
 Glu Gly Ile Arg Met Ser Cys Gln Ser Gly Leu His Gly Trp Glu Val
 500 505 510
 Thr Asp Leu Lys Val Thr Phe Thr Gln Ala Glu Tyr Tyr Ser Pro Val
 515 520 525
 Ser Thr Pro Ala Asp Phe Arg Gln Leu Thr Pro Tyr Val Phe Arg Leu
 530 535 540
 Ala Leu Gln Gln Ser Gly Val Asp Ile Leu Glu Pro Met Leu Tyr Phe
 545 550 555 560
 Glu Leu Gln Ile Pro Gln Ala Ala Ser Ser Lys Ala Ile Thr Asp Leu
 565 570 575
 Gln Lys Met Met Ser Glu Ile Glu Asp Ile Ser Cys Asn Asn Glu Trp
 580 585 590
 Cys His Ile Lys Gly Lys Val Pro Leu Asn Thr Ser Lys Asp Tyr Ala
 595 600 605
 Ser Glu Val Ser Ser Tyr Thr Lys Gly Leu Gly Val Phe Met Val Lys
 610 615 620
 Pro Cys Gly Tyr Gln Ile Thr Lys Gly Asp Tyr Ser Asp Asn Ile Arg
 625 630 635 640
 Met Asn Glu Lys Asp Lys Leu Leu Phe Met Phe Gln Lys Ser Met Ser
 645 650 655
 Ser Lys

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 <211> 703
 <212> PRT
 <213> B.fragilis

<400> 6948
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 Gln Cys Met Ser Gln Gln Glu Asp Asp Leu Arg Ala Leu Ala Lys Ile
 35 40 45
 Met Asp Phe Leu Arg Ala Val Ser Ile Ile Leu Val Val Met Asn Val
 50 55 60
 Tyr Trp Phe Cys Tyr Glu Ala Ile Arg Leu Trp Gly Val Asp Ile Gly
 65 70 75 80
 Val Val Asp Arg Ile Leu Met Asn Phe Asn Arg Thr Ala Gly Leu Phe
 85 90 95
 Arg Ser Ile Leu Tyr Thr Lys Leu Phe Ala Val Leu Leu Leu Ala Leu
 100 105 110
 Ser Cys Leu Gly Thr Lys Gly Val Lys Gly Glu Lys Ile Thr Trp Gly
 115 120 125
 Arg Ile Trp Thr Ala Leu Ala Val Gly Phe Val Leu Phe Phe Leu Asn
 130 135 140
 Trp Trp Ile Leu Ala Leu Pro Leu Pro Ile Glu Ala Val Thr Gly Leu
 145 150 155 160
 Tyr Ile Leu Thr Val Gly Ala Gly Tyr Val Cys Leu Leu Met Gly Gly
 165 170 175
 Leu Trp Met Ser Arg Leu Leu Lys His Asn Leu Met Asp Asp Val Phe
 180 185 190
 Asn Asn Glu Asn Glu Ser Phe Met Gln Glu Thr Arg Leu Ile Glu Ser
 195 200 205

Glu Tyr Ser Val Asn Leu Pro Thr Arg Phe Tyr Tyr Lys Lys Arg Trp
 210 215 220
 Asn Asn Gly Trp Ile Asn Val Val Asn Pro Phe Arg Ala Ser Ile Val
 225 230 235 240
 Leu Gly Thr Pro Gly Ser Gly Lys Ser Tyr Ala Val Val Asn Asn Phe
 245 250 255
 Ile Lys Gln Gln Ile Glu Lys Gly Phe Ser Met Tyr Val Tyr Asp Phe
 260 265 270
 Lys Phe Ser Asp Leu Ser Thr Ile Ala Tyr Asn His Leu Leu Asn His
 275 280 285
 Pro Glu Gly Tyr Lys Val Lys Pro Lys Phe Tyr Val Ile Asn Phe Asp
 290 295 300
 Asp Pro Arg Arg Ser His Arg Cys Asn Pro Ile His Pro Asp Phe Met
 305 310 315 320
 Glu Asp Ile Thr Asp Ala Tyr Glu Ser Ala Tyr Thr Ile Met Leu Asn
 325 330 335
 Leu Asn Lys Ser Trp Val Gln Lys Gln Gly Asp Phe Phe Val Glu Ser
 340 345 350
 Pro Ile Ile Leu Phe Ala Ala Ile Ile Trp Tyr Leu Lys Ile Phe Arg
 355 360 365
 Asn Gly Lys Tyr Cys Thr Phe Pro His Ala Ile Glu Phe Leu Asn Arg
 370 375 380
 Arg Tyr Glu Asp Ile Phe Pro Ile Leu Thr Ser Tyr Pro Glu Leu Glu
 385 390 395 400
 Asn Tyr Leu Ser Pro Phe Met Asp Ala Trp Leu Gly Gly Ala Ala Glu
 405 410 415
 Gln Leu Met Gly Gln Ile Ala Ser Ala Lys Ile Pro Leu Ser Arg Met
 420 425 430
 Ile Ser Pro Gln Leu Tyr Trp Val Met Ser Asp Ser Glu Phe Thr Leu
 435 440 445
 Asp Ile Asn Asn Pro Glu Glu Pro Lys Ile Leu Cys Val Gly Asn Asn
 450 455 460
 Pro Asp Arg Gln Asn Ile Tyr Gly Ala Ala Leu Gly Leu Tyr Asn Ser
 465 470 475 480
 Arg Ile Val Lys Leu Ile Asn Lys Lys Gly Met Leu Lys Ser Ser Val
 485 490 495
 Ile Ile Asp Glu Leu Pro Thr Ile Tyr Phe Lys Gly Leu Asp Asn Leu
 500 505 510
 Ile Ala Thr Ala Arg Ser Asn Lys Val Ala Val Cys Leu Gly Phe Gln
 515 520 525
 Asp Phe Ser Gln Leu Val Arg Asp Tyr Gly Asp Lys Glu Ala Lys Val
 530 535 540
 Val Met Asn Thr Val Gly Asn Ile Phe Ser Gly Gln Val Val Gly Glu
 545 550 555 560
 Thr Ala Lys Thr Leu Ser Glu Arg Phe Gly Lys Val Leu Gln Lys Arg
 565 570 575
 Gln Ser Ile Ser Ile Asn Arg Gln Asp Val Ser Thr Ser Ile Asn Thr
 580 585 590
 Gln Met Asp Ala Leu Ile Pro Pro Ser Lys Ile Ser Gly Leu Thr Gln
 595 600 605
 Gly Met Phe Val Gly Ser Val Ser Asp Asn Phe Asn Glu Arg Ile Glu
 610 615 620
 Gln Lys Ile Phe His Cys Glu Ile Val Val Asp Ala Glu Lys Val Lys
 625 630 635 640
 Arg Glu Glu Lys Ala Tyr Lys Lys Ile Pro Val Ile Thr Asp Phe Thr
 645 650 655
 Asp Glu Asn Gly Asn Asp Arg Met Lys Glu Thr Val Gln Glu Asn Tyr
 660 665 670
 Arg Arg Ile Lys Glu Glu Val Lys Gln Ile Val Gln Glu Glu Leu Glu

	675		680		685
Arg	Ile Ala Asn Asp Glu Asn Leu Lys His Leu Leu Gln Gln Lys				
	690		695		700

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 <211> 249
 <212> PRT
 <213> B.fragilis

<400> 6949
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 20 25 30
 Glu Tyr Ala Lys Ala Lys Glu Cys Ile Asp Lys Met Leu Ala Glu Lys
 35 40 45
 Met Asp Asp Leu Thr Cys Glu Ala Cys Glu Leu Asn Phe Met Leu Asp
 50 55 60
 Tyr Tyr Leu Glu Thr Gly Gln Phe Glu Glu Ala Tyr Asn Arg Ala Gln
 65 70 75 80
 Pro Leu Ile Thr Arg Gln Val Ser Cys Tyr Glu Ala Asn Leu Arg Ala
 85 90 95
 Tyr Met Lys Leu Ala Tyr Tyr Ala Cys Lys Ala Gly Lys Pro Glu Ile
 100 105 110
 Ala Ala Asp Met Cys Ala Arg Ala Glu Glu Ala Leu Val Gly Arg Glu
 115 120 125
 Lys Asp Glu Tyr Leu Leu Leu Tyr Leu Gly Leu Phe Ile Ala Tyr Tyr
 130 135 140
 Phe Met Thr His Pro Asp Arg Gly Trp Glu Tyr Ala Glu Arg Cys Ile
 145 150 155 160
 Pro Trp Ser Leu Asn Thr Asn Met Gln Lys Lys Tyr Arg Phe Ser Cys
 165 170 175
 Asp Met Val Glu Ala Leu Ser Tyr Glu Ser His Glu Glu Val Ser Leu
 180 185 190
 Ser Leu Pro Glu Glu Phe Pro Leu Tyr Arg Ala Asp Gly Ile Tyr Ser
 195 200 205
 Val Ala Ala Leu Arg Asp Tyr Phe Tyr Lys Gln Ala Thr Gln Leu Ala
 210 215 220
 Ser Leu Tyr Asp Thr Arg Asn Gly Asn Asn Gly Tyr Gln Glu Arg Leu
 225 230 235 240
 Phe Asn Val Asn Leu Ile Gly Asn Leu
 245

<210> 6950
 <211> 233
 <212> PRT
 <213> B.fragilis

<400> 6950
 Phe Leu Leu Asp Ile Leu Ser Met Arg Ile Leu Tyr Val Leu Phe Phe
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 Leu Leu Thr Leu Asn Ser Cys Gln Lys Val Lys Glu Lys Glu Val Val
 20 25 30
 Arg Leu Met Lys Glu Trp Asn Arg Lys Glu Val Leu Phe Pro Asp Asp
 35 40 45
 Leu Leu Phe Thr Val Leu Glu Lys Asp Thr Leu Lys Glu Ile Pro Lys
 50 55 60
 Ser Asp Tyr Thr Ile Ile Thr Tyr Val Asp Ser Ile Gly Cys Thr Ser
 65 70 75 80

Cys Lys Leu Lys Leu Gln Asn Trp Leu Leu Leu Glu Arg Lys Leu Arg
 85 90 95
 Ser Ile Thr Asn Lys Arg Val Ser Cys Leu Phe Val Ile His Pro Lys
 100 105 110
 Ser Lys Lys Glu Val Asn Tyr Ile Leu Gln Glu Asn His Phe Asp Cys
 115 120 125
 Pro Val Cys Ile Asp Asp Ser Asp Ile Phe Asn Lys Leu Asn Lys Phe
 130 135 140
 Pro Ala Asn Ile Met Tyr Gln Thr Phe Leu Leu Asp Ala Gly Asn Lys
 145 150 155 160
 Val Val Ala Ile Gly Asn Pro Ile His Asn Asp Arg Ile Lys Lys Leu
 165 170 175
 Tyr Leu Asp Ile Ile Ser Gly Asn Lys Met Thr Ser Lys Lys Gly Ser
 180 185 190
 Met Gln Thr Glu Ile Thr Val Ser Glu Thr Leu Phe Asp Phe Gly Lys
 195 200 205
 Ile Ser Phe Lys Glu Ser Gln Lys Cys Ile Phe Met Leu Gln Ser Tyr
 210 215 220
 Tyr Lys Lys Val Glu Cys Gly Arg Met
 225 230

<210> 6951

<211> 599

<212> PRT

<213> B.fragilis

<400> 6951

Lys Leu Leu Glu Glu Asp Asn Asp Lys Asn Arg Met Glu Lys Glu Gly
 1 5 10 15
 Asn Asn Leu Phe Gln Val Asn Leu Lys Gly Met Ile Ala Leu Leu Ser
 20 25 30
 Glu His Ile Tyr Ser Asn Pro Asn Thr Phe Val Arg Glu Leu Leu Gln
 35 40 45
 Asn Ser Val Asp Ala Ile Thr Ala Leu His Asn Ile Asp Glu Asn Tyr
 50 55 60
 Ser Gly Arg Ile Asp Val Phe Leu Asn Gly Asp Gly Ser Met Val Phe
 65 70 75 80
 Gln Asp Asn Gly Ile Gly Leu Lys Glu Glu Glu Val Tyr Arg Phe Leu
 85 90 95
 Thr Val Ile Gly Glu Ser Ser Lys Arg Asp Thr Pro Asp Ala Asp Asp
 100 105 110
 Phe Ile Gly Arg Phe Gly Ile Gly Leu Leu Ser Cys Phe Val Val Thr
 115 120 125
 Asn Glu Ile Arg Val Glu Ser Arg Ser Ala Met Gly Gly Asn Pro Val
 130 135 140
 Cys Trp Cys Gly Lys Val Asp Gly Thr Tyr Gln Thr Thr Phe Pro Asp
 145 150 155 160
 Glu Glu Trp Glu Ile Gly Ser Arg Val Val Leu Arg Pro Lys Asn Glu
 165 170 175
 Trp Ala His Leu Phe Glu Tyr Glu Val Phe Lys Lys Ile Leu Val Asn
 180 185 190
 Tyr Gly Glu Val Leu Pro Tyr Pro Val Tyr Leu His Arg Gly Glu Glu
 195 200 205
 Glu Glu Leu Val Asn Thr Pro Ser Pro Val Trp Leu Asp Pro Lys Ala
 210 215 220
 Thr Arg Lys Glu Leu Leu Asp Tyr Gly Thr Lys Val Phe Gln Ser Ser
 225 230 235 240
 Ala Leu Asp Ala Phe Pro Ile Arg Thr Glu His Gly Arg Ile Glu Gly
 245 250 255

3455 3456 3457 3458 3459 3460 3461 3462 3463 3464 3465 3466 3467 3468 3469 3470 3471 3472 3473 3474 3475 3476 3477 3478 3479 3480 3481 3482 3483 3484 3485 3486 3487 3488 3489 3490 3491 3492 3493 3494 3495 3496 3497 3498 3499 3500 3501 3502 3503 3504 3505 3506 3507 3508 3509 3510 3511 3512 3513 3514 3515 3516 3517 3518 3519 3520 3521 3522 3523 3524 3525 3526 3527 3528 3529 3530 3531 3532 3533 3534 3535 3536 3537 3538 3539 3540 3541 3542 3543 3544 3545 3546 3547 3548 3549 3550 3551 3552 3553 3554 3555 3556 3557 3558 3559 3560 3561 3562 3563 3564 3565 3566 3567 3568 3569 3570 3571 3572 3573 3574 3575 3576 3577 3578 3579 3580 3581 3582 3583 3584 3585 3586 3587 3588 3589 3590 3591 3592 3593 3594 3595 3596 3597 3598 3599 3600 3601 3602 3603 3604 3605 3606 3607 3608 3609 3610 3611 3612 3613 3614 3615 3616 3617 3618 3619 3620 3621 3622 3623 3624 3625 3626 3627 3628 3629 3630 3631 3632 3633 3634 3635 3636 3637 3638 3639 3640 3641 3642 3643 3644 3645 3646 3647 3648 3649 3650 3651 3652 3653 3654 3655 3656 3657 3658 3659 3660 3661 3662 3663 3664 3665 3666 3667 3668 3669 3670 3671 3672 3673 3674 3675 3676 3677 3678 3679 3680 3681 3682 3683 3684 3685 3686 3687 3688 3689 3690 3691 3692 3693 3694 3695 3696 3697 3698 3699 3700 3701 3702 3703 3704 3705 3706 3707 3708 3709 3710 3711 3712 3713 3714 3715 3716 3717 3718 3719 3720 3721 3722 3723 3724 3725 3726 3727 3728 3729 3730 3731 3732 3733 3734 3735 3736 3737 3738 3739 3740 3741 3742 3743 3744 3745 3746 3747 3748 3749 3750 3751 3752 3753 3754 3755 3756 3757 3758 3759 3760 3761 3762 3763 3764 3765 3766 3767 3768 3769 3770 3771 3772 3773 3774 3775 3776 3777 3778 3779 3780 3781 3782 3783 3784 3785 3786 3787 3788 3789 3790 3791 3792 3793 3794 3795 3796 3797 3798 3799 3800 3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814 3815 3816 3817 3818 3819 3820 3821 3822 3823 3824 3825 3826 3827 3828 3829 3830 3831 3832 3833 3834 3835 3836 3837 3838 3839 3840 3841 3842 3843 3844 3845 3846 3847 3848 3849 3850 3851 3852 3853 3854 3855 3856 3857 3858 3859 3860 3861 3862 3863 3864 3865 3866 3867 3868 3869 3870 3871 3872 3873 3874 3875 3876 3877 3878 3879 3880 3881 3882 3883 3884 3885 3886 3887 3888 3889 3890 3891 3892 3893 3894 3895 3896 3897 3898 3899 3900 3901 3902 3903 3904 3905 3906 3907 3908 3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 3997 3998 3999 4000

Val Leu Tyr Val Leu Pro Phe Arg Thr Gln Phe Ser Val Arg Asn Ser
 260 265 270
 His Lys Val Tyr Leu Lys Arg Met Leu Leu Ser Glu Asp Asp Cys Asn
 275 280 285
 Leu Leu Pro Ser Trp Ala Phe Phe Ile Arg Cys Leu Val Asn Ala Asp
 290 295 300
 Gly Leu Leu Ser Thr Ala Ser Arg Glu Ser Phe Val Ser Asn Asp Ser
 305 310 315 320
 Leu Lys Asp Ala Arg Lys Glu Ile Gly Val Ala Ile Lys Glu Tyr Leu
 325 330 335
 Arg Ala Leu Val Gln Asn Asn Arg Ser Val Phe Asn Lys Ile Leu Asp
 340 345 350
 Val His His Phe His Ile Lys Ala Ile Ala Ser Glu Asp Asn Glu Leu
 355 360 365
 Leu Arg Leu Phe Met Asp Tyr Leu Pro Phe Glu Thr Asn Lys Gly Ile
 370 375 380
 Arg Ser Phe Gly Ser Ile Arg Ser Ser Asn Asn Thr Ile Tyr Tyr Thr
 385 390 395 400
 Arg Asn Leu Glu Asp Phe Arg Gln Val Arg Arg Ile Ala Gly Ala Gln
 405 410 415
 Gly Arg Leu Val Val Asn Ala Ala Tyr Thr Phe Asp Glu Thr Leu Leu
 420 425 430
 Lys Lys Tyr Ile Arg Leu Asn Gln Glu Leu Ser Leu Glu Glu Ile Ser
 435 440 445
 Pro Ala Arg Leu Leu Glu Glu Phe Ala Glu Val Glu Gly Asn Lys Glu
 450 455 460
 His Arg Ser Phe Glu Thr Lys Ala Ser Glu Leu Leu Lys Arg Phe Gly
 465 470 475 480
 Cys Ile Cys Arg Leu Lys His Phe Thr Pro Val Asp Thr Pro Val Ile
 485 490 495
 Phe Val Ala Glu Glu Lys Glu Glu Asn Ser Lys Val Ala Asn Asn Pro
 500 505 510
 Leu Ala Ala Val Leu Gly Ser Val Asn Ala Lys Lys Arg Leu Pro Pro
 515 520 525
 Thr Leu Thr Phe Asn Ala Asp Asn Glu Met Val Gln Thr Leu Leu Arg
 530 535 540
 Ile Gln Gly Asp Asn Lys Leu Phe Gln His Val Val His Ile Leu Tyr
 545 550 555 560
 Val Gln Ser Leu Leu Gln Gly Lys Tyr Pro Val Asn Ser Glu Glu Met
 565 570 575
 Glu Leu Phe Asn His Ser Leu Ser Glu Leu Met Thr Ala Lys Met Asn
 580 585 590
 Asp Phe Ile Asn Phe Leu Asn
 595

<210> 6952
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 <213> B.fragilis

<400> 6952
 Ile Thr Met Glu Phe Lys Ser Leu Lys Asn Ile Glu Ser Ser Phe Arg
 1 5 10 15
 Gln Ile Arg Leu Phe Gly Ile Val Phe Leu Ser Leu Cys Ala Val Ile
 20 25 30
 Thr Val Trp Ser Val Trp Ser Ser Tyr Arg Phe Ala Glu Arg Gln Arg
 35 40 45
 Glu Lys Ile Tyr Val Leu Asp Asn Gly Lys Ser Leu Met Leu Ala Leu
 50 55 60

Ser Gln Asp Leu Ser Gln Asn Arg Pro Ala Glu Ala Arg Glu His Val
65 70 75 80
Arg Arg Phe His Glu Leu Phe Phe Thr Leu Ser Pro Glu Lys Ser Ala
85 90 95
Ile Glu His Asn Val Lys Arg Ala Leu Leu Ala Asp Lys Ser Val
100 105 110
Tyr Asn Tyr Tyr Ser Asp Phe Ala Glu Lys Gly Tyr Tyr Asn Arg Ile
115 120 125
Ile Ala Gly Asn Ile Asn Gln Val Leu Lys Val Asp Ser Val Val Cys
130 135 140
Asp Phe Asn Gly Tyr Pro Tyr Arg Ala Val Thr Tyr Ala Thr Gln Lys
145 150 155 160
Ile Ile Arg Gln Ser Asn Val Thr Glu Arg Ser Leu Val Thr Thr Cys
165 170 175
Arg Leu Leu Asn Ser Ser Arg Ser Asp Asp Asn Pro Asn Gly Phe Thr
180 185 190
Ile Glu Gly Phe Thr Ile Ile Glu Asn Lys Asp Leu Gln Thr Ile Lys
195 200 205
Arg

<210> 6953
<211> 612
<212> PRT
<213> B.fragilis

<400> 6953
Val Met Lys Glu Phe Phe Gln Leu Met Lys Arg Phe Val Pro Pro Tyr
1 5 10 15
Lys Lys Tyr Val Ile Trp Ala Leu Val Leu Asn Leu Leu Ser Ala Ile
20 25 30
Leu Asn Ile Phe Ser Phe Ser Leu Ile Ala Pro Ile Leu Gln Ile Leu
35 40 45
Phe Lys Val Asp Lys Asp Val Tyr Glu Phe Ile Pro Trp Asp Thr Val
50 55 60
Thr Ile Ser Thr Lys Asp Leu Leu Ile Asn Asn Phe Tyr Tyr Tyr Val
65 70 75 80
Ser Ala Met Ile Gln Ala Asn Gly Ala Ser Phe Thr Leu Met Ile Leu
85 90 95
Gly Leu Phe Leu Val Val Met Thr Phe Phe Lys Thr Phe Cys Tyr Phe
100 105 110
Ala Ser Ser Ala Val Met Ile Pro Leu Arg Thr Gly Val Val Arg Asp
115 120 125
Ile Arg Val Met Val Tyr Asp Lys Val Leu Arg Leu Pro Leu Gly Phe
130 135 140
Phe Ser Glu Glu Arg Lys Gly Asp Ile Ile Ala Arg Met Ser Gly Asp
145 150 155 160
Val Gly Glu Ile Glu Asn Ser Val Thr Ser Ser Leu Asp Met Leu Val
165 170 175
Lys Asn Pro Ile Leu Ile Ile Ala Tyr Phe Thr Thr Leu Leu Val Ile
180 185 190
Ser Trp Gln Leu Thr Leu Phe Thr Leu Leu Val Val Pro Leu Met Gly
195 200 205
Trp Val Met Gly Thr Val Gly Lys Lys Leu Lys Arg Gln Ser Leu Glu
210 215 220
Ala Gln Ala Lys Trp Ser Asp Thr Met Ser Gln Leu Glu Glu Thr Leu
225 230 235 240
Gly Gly Leu Arg Ile Ile Lys Ala Phe Ile Ala Glu Asn Lys Met Ile
245 250 255

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Asn Arg Phe Leu Lys Cys Ser Asn Glu Phe Arg Asp Ala Thr Asn Lys
      260      265      270
Val Ala Thr Arg Gln Ala Leu Ala His Pro Met Ser Glu Phe Leu Gly
      275      280      285
Thr Thr Met Ile Val Ile Val Leu Trp Phe Gly Gly Ser Leu Ile Leu
      290      295      300
Ser Ser His Ser Ser Ile Asp Ala Ser Thr Phe Met Val Tyr Leu Thr
      305      310      315      320
Ile Leu Tyr Ser Val Ile Asn Pro Leu Lys Glu Phe Ser Lys Ala Gly
      325      330      335
Tyr Asn Ile Pro Lys Gly Leu Ala Ser Met Glu Arg Val Asp Lys Ile
      340      345      350
Leu Lys Ala Glu Asn Lys Ile Val Glu Ile Pro Asn Pro Lys Pro Leu
      355      360      365
Asn Gly Leu Glu Glu Gln Val Glu Phe Lys Asp Ile Ser Phe Ser Tyr
      370      375      380
Asp Gly Lys Lys Glu Val Leu Gln His Ile Asn Leu Thr Val Pro Lys
      385      390      395      400
Gly Lys Thr Ile Ala Leu Val Gly Gln Ser Gly Ser Gly Lys Ser Thr
      405      410      415
Leu Val Asp Leu Leu Pro Arg Tyr His Asp Val Gln Glu Gly Thr Ile
      420      425      430
Thr Ile Asp Gly Val Asn Ile Lys Asp Val Arg Ile Ser Asp Leu Arg
      435      440      445
Ser Leu Ile Gly Asn Val Asn Gln Glu Ala Ile Leu Phe Asn Asp Thr
      450      455      460
Phe Phe Asn Asn Ile Ala Phe Gly Val Glu Asn Ala Thr Met Glu Gln
      465      470      475      480
Val Ile Glu Ala Ala Lys Ile Ala Asn Ala His Asp Phe Ile Met Glu
      485      490      495
Lys Glu Asp Gly Tyr His Thr Asn Ile Gly Asp Arg Gly Ser Lys Leu
      500      505      510
Ser Gly Gly Gln Arg Gln Arg Ile Ser Ile Ala Arg Ala Ile Leu Lys
      515      520      525
Asn Pro Pro Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Thr
      530      535      540
Glu Ser Glu Arg Leu Val Gln Glu Ala Leu Glu Arg Leu Met Lys Thr
      545      550      555      560
Arg Thr Thr Ile Ala Ile Ala His Arg Leu Ser Thr Ile Lys Asn Ala
      565      570      575
Asp Glu Ile Cys Val Leu Tyr Glu Gly Glu Ile Val Glu Arg Gly Lys
      580      585      590
His Glu Glu Leu Leu Ala Lys Asn Gly Tyr Tyr Lys Arg Leu Asn Asp
      595      600      605
Met Gln Ser Leu
      610

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<210> 6954

<211> 135

<212> PRT

<213> B.fragilis

<400> 6954

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Ile Leu Arg Asp Phe Arg Arg Leu Asn Arg Phe Met Asn Leu Phe His
1      5      10      15
Ser Arg Ile Ser Thr Lys Ser Ile Gln Ser Tyr Leu Asn Phe Arg Asn
      20      25      30
Tyr Leu Gly Phe Cys Gly Asp Ser Ile Tyr Val Gln Met Ile Ala Phe
      35      40      45

```

Leu Arg Tyr Leu Gly Tyr Ile Gln Gln Arg Lys Leu Arg Leu Ser Pro
 50 55 60
 Phe Glu Gln His Gly Met Ala Phe Thr Leu Val Val Ala Glu Ser Asp
 65 70 75 80
 Ile Leu Pro Ile Asn Val Pro Val Thr Arg Leu Gln Phe Pro Asp Gln
 85 90 95
 Arg Ala Phe Gly Tyr Phe Pro Val Pro Gln Gln Thr Val Trp Thr Asp
 100 105 110
 Ile Val Gly Glu Arg Gly Lys Glu Gln Thr Ile Phe Pro Glu Leu Pro
 115 120 125
 Glu His Cys Ala Glu Leu Ser
 130 135

<210> 6955
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 6955
 Phe Tyr Lys Leu Ser Gln Leu Asn Glu Ser Met Lys Tyr Thr Leu Glu
 1 5 10 15
 Ile Gln Lys Leu Leu Gln Ala Gln Asn Asp Asn Leu His Pro Arg
 20 25 30
 Glu Lys Ala Asn Leu Leu Arg Glu Ala Ile Arg Ile Ala Asp Glu Asn
 35 40 45
 Glu Asp Val Gln Trp Ala Val Glu Met Arg Leu Asp Leu Ile Tyr Glu
 50 55 60
 Leu Asn Leu Leu Ser Ala Asp Ala Glu Glu Ile Ala Val Phe Ser Lys
 65 70 75 80
 Ile Leu Asp Ser Tyr Glu Asn His Lys Asp Gln Ile Asn Glu Asp Asp
 85 90 95
 Ile Leu Trp Lys Tyr Lys Trp Ile Trp Ser Cys Thr Phe Asp Leu Pro
 100 105 110
 Ser Ile Pro Met Glu Gln Val
 115

<210> 6956
 <211> 474
 <212> PRT
 <213> B.fragilis

<400> 6956
 Arg Val Val Cys His Val Asp Gly Glu Tyr Leu Arg Leu Leu Phe Leu
 1 5 10 15
 Arg Lys Pro Gln Gln Gly Leu Tyr Gly Ile Lys Leu Val His Val Leu
 20 25 30
 Pro Leu Val Lys Glu Tyr Leu Ala Val Gly Val Ile Asp Asp Ala Leu
 35 40 45
 Leu Asp His Gly Arg Gly Asn Asp Val Val His Leu Arg His His
 50 55 60
 Asp Cys Leu Pro Val Ile Leu Ala His Gly Phe Val His Ile Ala Gln
 65 70 75 80
 Val Leu Ser His Val Arg Arg Arg Glu Ser Leu Pro Ser Leu Phe His
 85 90 95
 Tyr Gln Leu Phe Pro Tyr Ala Phe Gln Ser Ala His Leu Val Asp Glu
 100 105 110
 Gly Phe His Asp Asn Asp Gly His Asp Arg Glu Lys Leu Ala Ile Phe
 115 120 125
 Leu Tyr Arg Ile Asn Leu Glu Asp Asp Glu Pro Leu Ala Glu Gln Val

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130          135          140
Asp Val Leu Arg Gly Val Glu Gln Glu Val Val Ala Ser Ala Pro Val
145          150          155          160
Ile Leu Pro His Gly Gly Glu His Ile Val Asp Val Glu Ile Gly Leu
165          170          175
Leu His Leu Tyr Leu Thr Phe Arg Gln Phe Ala Ala Val Val Val Ala
180          185          190
His Ile Leu Ile Glu Gly Val Glu Arg Gly Asp Asp Ala Pro Val Ser
195          200          205
Pro Asp Thr Leu Asp Val Cys Val His Arg Thr Ala Gln Phe Ala Ala
210          215          220
Leu Arg Phe Arg Asn Phe Val Val Leu Arg Leu Pro Glu Cys Gln Gln
225          230          235          240
Gln Arg Leu Asp Ala Val Leu Phe Leu His Val Glu His Val Ile Ile
245          250          255
Gly Val Lys Arg Ile Glu Arg Asn Arg Phe Leu Leu Arg Val Gly Glu
260          265          270
Val His Ala Val Arg Pro Val Cys Leu Ala Pro Asp His Leu Ala Gln
275          280          285
Ala Leu Ile Gly Val Ser Arg Ile His Gln Tyr His Val Arg Thr Leu
290          295          300
Leu Val Val Leu Pro His Glu Val Val His Lys Glu Gly Phe Ala Ala
305          310          315          320
Ala Arg Arg Thr Gln His Glu Leu Val Ala Val Gly Arg Asp Ala Pro
325          330          335
Leu His Arg Gln Val Ala Asp Val Glu Val Gln Arg Phe Ser Arg Lys
340          345          350
Pro Val His His Leu Asp Thr Glu Gly Arg Glu Arg Thr Ala Val Val
355          360          365
Gly Phe Leu Arg Glu Lys Ala His Arg Leu Leu Asp Glu Gly Met Glu
370          375          380
Thr Leu Phe Arg Arg Glu Val Arg Arg Val Ala Gly His Arg Arg Pro
385          390          395          400
Val Glu Arg Arg Ala Val Asp Gly Val Val Ala Arg His Ala Leu His
405          410          415
Ala Cys Gln Leu Ala Ala Tyr Ile Val Leu Tyr Met Leu Gln Phe Leu
420          425          430
Arg Val Ile Ala Pro Arg His Asp Val Glu Val Arg Pro Tyr Arg Gly
435          440          445
Gln Pro Val Gly Met Gly Phe Val Gln Val Leu Val Tyr Pro Phe Ala
450          455          460
Val Asp Ala Val Ala Pro Ala Val Ser Gly
465          470

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<210> 6957

<211> 117

<212> PRT

<213> B.fragilis

<400> 6957

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Arg Met Glu Leu Leu Thr Arg Asn Asn Phe Glu Ser Trp Met Gln Lys
1          5          10          15
Leu Met Glu Arg Leu Asp Arg Gln Asp Glu Leu Leu Leu Ser Leu Gln
20          25          30
Pro Ser Gly Lys Ala Pro Asn Pro Ile Glu Arg Ile Arg Met Phe Asp
35          40          45
Asn Gln Asp Leu Cys Met Leu Leu Gln Ile Ser Lys Arg Thr Leu Gln
50          55          60
Arg Tyr Arg Ser Ile Gly Ala Leu Pro Tyr Lys Thr Leu Gly Lys Lys

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65		70		75		80									
Thr	Tyr	Tyr	Ser	Glu	Glu	Asp	Val	Leu	Thr	Phe	Leu	Ser	Gly	His	Val
			85						90					95	
Lys	Asp	Phe	Lys	Lys	Glu	Asp	Ile	Ala	Phe	Tyr	Lys	Ala	Arg	Ile	His
			100					105					110		
Asn	Phe	Phe	Gln	Lys											
			115												

<210> 6958

<211> 409

<212> PRT

<213> B.fragilis

<400> 6958

Asp	Trp	Ser	Cys	Lys	Asn	Arg	His	Phe	Ile	Val	Cys	Phe	Leu	Tyr	Lys
1				5					10					15	
Ile	Arg	Gln	Leu	Lys	Lys	Tyr	Asp	Tyr	Leu	Cys	Thr	Ile	Ile	Tyr	Gln
		20						25					30		
Gly	Met	Glu	Thr	Val	Asn	Arg	Ile	Leu	Gln	Glu	Lys	Ile	Thr	Ala	Arg
		35					40					45			
Ile	Ala	Pro	Asn	Lys	Ala	Val	Leu	Ile	Phe	Gly	Ala	Arg	Arg	Val	Gly
	50					55					60				
Lys	Thr	Val	Met	Met	Arg	Lys	Ile	Val	Asp	Asn	Tyr	Ser	Gly	Arg	Thr
65					70					75				80	
Met	Met	Leu	Asn	Gly	Glu	Asp	Tyr	Asp	Thr	Leu	Ala	Leu	Leu	Glu	Asn
				85					90					95	
Arg	Ser	Ile	Ala	Asn	Tyr	Arg	His	Leu	Leu	Asp	Gly	Ile	Asp	Leu	Leu
			100					105					110		
Ala	Ile	Asp	Glu	Ala	Gln	Asn	Ile	Pro	Gln	Ile	Gly	Ser	Ile	Leu	Lys
		115					120					125			
Leu	Ile	Val	Asp	Glu	Ile	Pro	Gly	Ile	Ser	Val	Leu	Ala	Ser	Gly	Ser
	130						135				140				
Ser	Ser	Phe	Asp	Leu	Leu	Asn	Lys	Thr	Gly	Glu	Pro	Leu	Val	Gly	Arg
145					150					155				160	
Ser	Thr	Gln	Phe	Leu	Leu	Thr	Pro	Phe	Ser	Gln	Arg	Glu	Ile	Ala	Gln
			165					170					175		
Ile	Glu	Thr	Pro	Phe	Glu	Thr	Arg	Gln	Asn	Leu	Glu	Ala	Arg	Leu	Ile
		180						185					190		
Tyr	Gly	Ser	Tyr	Pro	Glu	Val	Val	Met	Met	Glu	Asn	Tyr	Glu	Arg	Lys
	195						200					205			
Thr	Asp	Tyr	Leu	Arg	Asp	Ile	Val	Gly	Ala	Tyr	Leu	Leu	Lys	Asp	Ile
	210					215				220					
Leu	Ala	Ile	Asp	Gly	Leu	Lys	Asn	Ser	Ser	Lys	Met	Arg	Asp	Leu	Leu
225					230					235				240	
Arg	Leu	Ile	Ala	Phe	Gln	Leu	Gly	Ser	Glu	Val	Ser	Tyr	Asp	Glu	Leu
			245						250					255	
Gly	Lys	Gln	Leu	Gly	Met	Ser	Lys	Thr	Thr	Val	Glu	Lys	Tyr	Leu	Asp
		260						265					270		
Leu	Leu	Glu	Lys	Val	Phe	Val	Ile	Tyr	Arg	Leu	Gly	Ala	Tyr	Ser	Arg
		275					280					285			
Asn	Leu	Arg	Lys	Glu	Val	Thr	Lys	Ala	Gly	Lys	Trp	Tyr	Phe	Tyr	Asp
	290					295				300					
Asn	Gly	Ile	Arg	Asn	Ala	Ile	Ile	Gly	Ala	Phe	Ser	Pro	Leu	Ala	Ile
305					310					315				320	
Arg	Gln	Asp	Val	Gly	Ala	Leu	Trp	Glu	Asn	Tyr	Ile	Ile	Gly	Glu	Arg
			325						330					335	
Arg	Lys	Ala	Asn	Phe	Asn	Glu	Gly	Leu	His	Lys	Glu	Phe	Tyr	Phe	Trp
		340						345					350		
Arg	Thr	Tyr	Asp	Lys	Gln	Glu	Ile	Asp	Leu	Ile	Glu	Glu	Cys	Ala	Asp

355 360 365
 Ser Leu Thr Ala Leu Glu Phe Lys Trp Gly Asn Lys Met Pro Asn Ala
 370 375 380
 Pro Lys Val Phe Gln Glu Ala Tyr Pro His Ala Glu Phe His Val Val
 385 390 395 400
 Asn Arg Glu Asn Tyr Leu Glu Phe Val
 405

<210> 6959
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 6959
 Leu Thr His Cys Met Glu Arg Thr Glu Ile Asp Ala Met Arg Gln Ile
 1 5 10 15
 Pro Leu Ala Asp Phe Leu Ala Arg Leu Gly His Glu Pro Val Arg Arg
 20 25 30
 Ser Gly Asn Glu Leu Trp Tyr Arg Ala Pro Tyr Arg Asn Glu Arg Thr
 35 40 45
 Pro Ser Phe Arg Val Asn Val Ala Lys Gln Leu Trp Tyr Asp Phe Gly
 50 55 60
 Thr Gly Lys Gly Gly Asp Ile Phe Thr Leu Ala Gly Glu Phe Ile Gly
 65 70 75 80
 Ser Asn Asp Phe Met Glu Gln Val Lys Phe Ile Ala Glu Thr Ala Asn
 85 90 95
 Met Pro Met Pro Val Pro Glu Val Ser Lys Pro Thr Phe Leu Pro Lys
 100 105 110
 Pro Ser Glu Pro Ala Phe Glu Gly Val Glu Ala Val Pro Leu Leu Arg
 115 120 125
 Ser Pro Leu Thr Asp Tyr Leu Ala Glu Arg Gly Ile Ser Tyr Asp Ile
 130 135 140
 Ala Ser Arg Tyr Cys Cys Arg Leu Asn Tyr Gly Val Arg Gly Lys Arg
 145 150 155 160
 Tyr Phe Ala Val Gly Phe Pro Asn Val Thr Gly Gly Tyr Glu Ile Arg
 165 170 175
 Ser Arg Phe Phe Lys Gly Cys Val Pro Pro Lys Asp Val Ser Leu Val
 180 185 190
 Lys Ala Glu Gly Ser Pro Ala Asp Val Cys Ser Val Phe Glu Gly Phe
 195 200 205
 Met Asp Phe Leu Ser Ala Ala Thr Leu Gly Leu Glu Lys Gly Asp Cys
 210 215 220
 Leu Val Leu Asn Ser Val Ala Asn Val Glu Lys Ala Met Lys His Leu
 225 230 235 240
 Asp Gly Tyr Gly Cys Ile Asp Cys Tyr Leu Asp His Asp Glu Ala Gly
 245 250 255
 Arg Arg Thr Leu Lys Thr Leu Lys Gly His Tyr Gly Glu Arg Ile Tyr
 260 265 270
 Asp Arg Ser Ala Leu Tyr Asp Gly Cys Lys Asp Leu Asn Glu Tyr Leu
 275 280 285
 Gln Leu Thr Thr Gln Lys Glu Gln
 290 295

<210> 6960
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 6960

Arg Cys Pro Arg Glu His Ile Ser Phe Pro Ala Glu Arg Leu Tyr Val
 1 5 10 15
 Ala Pro Ser Val Arg Val Thr Glu Pro Phe Pro Ile Lys Ile Leu Arg
 20 25 30
 Glu Thr Arg Ser Glu Leu Leu Arg Pro Leu Leu Phe Ile Ala Glu Phe
 35 40 45
 Cys Arg Arg Asn Gln Lys Lys Gly Leu Asn Met Lys Val Ile Thr Met
 50 55 60
 Glu Ser Ser Ala Phe Thr Val Leu Thr Glu Gln Ile Ala Glu Ile Ala
 65 70 75 80
 Ala His Val Arg Ala Val Ser Gly Glu Arg Lys Glu Lys Phe Ala Asp
 85 90 95
 Arg Leu Leu Asn Thr Arg Glu Ala Ala His Leu Leu Asn Val Ser Thr
 100 105 110
 Arg Thr Leu Gln Arg Met Arg Ser Glu His Arg Ile Gly Tyr Val Val
 115 120 125
 Leu Arg Gly Lys Cys Arg Tyr Arg Gln Ser Glu Ile Asp Arg Leu Leu
 130 135 140
 Ala Asp Cys Thr Ile Val Glu Asp Ala Ala Thr Pro Thr Glu Leu Lys
 145 150 155 160
 Arg Asn His Thr Leu Arg Thr Gly Gly Ser Lys Pro Lys Gly Arg Arg
 165 170 175
 Thr

<210> 6961
 <211> 266
 <212> PRT
 <213> B.fragilis

<400> 6961
 Arg Cys His Arg Pro Cys Pro Phe Arg Ser Arg Thr Lys Ala Val Leu
 1 5 10 15
 Pro Arg Ser His Gly Lys Arg Ala Cys Ala His Cys Gly Met Ala His
 20 25 30
 Asp Thr Thr Thr Arg Cys Arg Phe Phe Gly Gln Ala His Val Leu Thr
 35 40 45
 Val Arg Gly Ser Pro Gln Gly Val Ser Ala Ser Trp Arg Arg Phe Pro
 50 55 60
 Ser Val Pro Cys Ser Ala Leu Val Asn Asp Lys Leu Asp Ala His Ala
 65 70 75 80
 Pro Leu Arg Met Lys Leu Pro Arg Val Ala Thr Pro Gln Ala Thr Leu
 85 90 95
 Pro Glu Ile Gly Lys Gln Gly Asp Thr Val Ser His Val Lys Leu His
 100 105 110
 Ile Glu Arg Gln Arg Thr Ala Val Asp Glu Gly Ile Pro Val Met Glu
 115 120 125
 His Gly Ala Val Met Gln Tyr Leu Phe Ala Pro Val His Arg Phe Ile
 130 135 140
 Ser Gly Lys Ser Arg Ser Thr Cys Ile Asp Glu Tyr Asp Phe Thr Gly
 145 150 155 160
 Ile Gly Glu Tyr Leu Glu Val Val Ser Ala Leu Arg Arg Glu Leu Arg
 165 170 175
 His Gly Tyr Leu Pro Val Leu Val Arg Val Val Leu Gln Gln Val Phe
 180 185 190
 Ala Ala Lys His Pro Phe Val Pro Leu Phe Arg Val Gly Gly Lys Ser
 195 200 205
 Arg Pro Glu Thr Val Pro Ala Val Val Ala Ala Gly Ile Glu Ala Val
 210 215 220

Arg His Val Arg Pro Asp Leu Asp Ala Leu His Leu Arg Gln Ala Ser
 225 230 235 240
 Leu Gly Val Arg Leu Pro Arg Thr Gln Gly Lys Arg Arg Asp Asp Tyr
 245 250 255
 Cys Asp Val Leu Ser His Gly Gln Arg Thr
 260 265

<210> 6962
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 6962
 Arg Pro Cys Arg Ile Phe Cys Phe Leu Val Ala Ile Phe Ala Asn Thr
 1 5 10 15
 Ile His Val Arg Ile Pro Lys Thr Glu Cys Lys Ile Ser Lys Leu Thr
 20 25 30
 Gly His Glu Leu Phe Phe Ile Gly Gly Asn Arg Phe Leu Pro Pro Asp
 35 40 45
 Lys Arg Ser Arg Gly Leu Gln Tyr Gly Lys Ser Ile His Gly Phe Arg
 50 55 60
 His Pro Ser Asp
 65

<210> 6963
 <211> 807
 <212> PRT
 <213> B.fragilis

<400> 6963
 Phe Arg Arg Arg Leu Phe Leu Phe Pro Phe Leu Arg Arg Arg Glu Phe
 1 5 10 15
 His His Phe Ala Val Ala Thr Val Ser Gly Asn Met Glu Leu Pro Glu
 20 25 30
 Arg Phe His Arg Glu Ala Ala Val Leu Pro Ile Ala Tyr Ala His His
 35 40 45
 Arg Gln Arg Gly Arg Leu His Pro Ser Asp Gly Ile Cys Ala Val Ser
 50 55 60
 Gly Ser Asp Gly Glu Cys Leu Arg Ala Val Asp Ala His Lys Pro Val
 65 70 75 80
 Gly Phe Ala Pro Cys Phe Gly Ser Lys Ile Glu Val Val Ile Leu Ala
 85 90 95
 Ser Arg Phe Lys Val Ala Gln Ser Leu Ala Asp Ser Leu Val Gly Glu
 100 105 110
 Arg Ala Tyr Pro Gln Ala Tyr Glu Arg Arg Ser Thr Ser Asp Ile Met
 115 120 125
 Val Glu Val Ser Glu Asp Lys Leu Thr Phe Ala Ser Cys Ile Gly Arg
 130 135 140
 His Asp Asp Leu Leu Ala Phe Leu Glu Lys Thr Gly Asp Asp Phe Tyr
 145 150 155 160
 Leu Arg His His Ala Val Gly Phe Val Thr Leu Leu Arg Phe Phe
 165 170 175
 Leu Thr Gly Asn Glu Arg Glu Gly Phe Gly Asp Asp Gly Gln Val Val
 180 185 190
 Thr Asp Glu Ala Ala Tyr Ala Val Ala Val Gly His Ser Lys Leu Asp
 195 200 205
 Lys Val Ser Glu Cys Pro Cys His Gly Thr Val Ala Ser Leu Glu Ile
 210 215 220
 Ser Phe Leu Ser Leu Cys Arg Ala His Asp Ala Gly Asp Leu Thr Cys

225					230					235					240
His	Gly	Trp	Leu	Phe	Cys	Asn	Asp	Cys	Leu	His	Ala	Asp	Tyr	Phe	Phe
				245					250					255	
Met	Asn	Cys	Tyr	Phe	Gly	Phe	Ser	Gly	Gly	His	Gly	Met	Leu	His	Leu
			260					265					270		
His	Ala	Leu	Asp	Asp	Phe	Leu	Leu	Arg	Leu	Leu	Leu	Gln	Leu	Leu	Leu
			275				280					285			
Phe	Val	Val	Phe	Arg	Ser	Gly	Leu	Pro	Phe	Leu	Gln	Arg	Leu	Phe	Gln
			290			295					300				
Val	Leu	Gly	Arg	Leu	Val	Gly	Leu	Ser	Phe	Ala	Val	His	Arg	His	Leu
305					310					315					320
Cys	Ala	Ala	Leu	Val	Gly	Arg	Gly	Asp	Leu	Leu	Arg	Val	Val	Gly	Val
				325					330					335	
Gly	Val	Val	Ala	Val	Arg	Thr	Ser	Leu	Leu	Arg	Val	Glu	Leu	Asp	Val
			340					345				350			
His	Arg	Gly	Val	Glu	Thr	Leu	Leu	Val	Gly	His	Val	Leu	Gln	Phe	Asp
		355				360					365				
Ser	Phe	Ala	Cys	Arg	Val	Ile	Gly	Phe	Leu	Leu	Val	Gly	Glu	Val	His
		370				375					380				
Ala	Ala	Pro	Phe	Thr	Asp	Gly	Ala	Asp	Ala	Ala	Val	Gly	Val	Arg	Pro
385					390					395					400
Arg	Val	Ala	Ala	Leu	Leu	Phe	Leu	Trp	Gly	Cys	Gly	Ile	Phe	His	Ala
				405					410					415	
Leu	Ser	Leu	Ser	Leu	Arg	Gly	Ile	Val	Leu	Gly	Phe	Leu	Arg	Leu	Gly
			420					425					430		
Gly	Thr	Arg	Arg	Pro	Ala	Gly	Ser	Arg	Tyr	Glu	Leu	His	Ala	Ser	Leu
		435				440					445				
Leu	Asp	Val	His	Leu	Lys	Cys	Gly	Asp	Glu	Leu	Pro	Ala	Val	Val	Ala
		450				455					460				
Phe	Asp	Glu	Leu	Val	Ala	His	Gly	Gln	Pro	Gly	Thr	Gln	His	Ile	Leu
465					470					475					480
Leu	Leu	Leu	Gly	Asp	Phe	Arg	Leu	Ser	Asp	Ala	Ile	Arg	Tyr	Ala	His
				485					490					495	
Leu	Val	Cys	Arg	Asn	Val	Arg	Asp	Phe	Ile	Arg	Leu	Ala	Val	Tyr	Ala
			500					505					510		
Asp	Glu	Arg	Gly	Asp	Asp	Phe	Thr	Arg	Phe	Pro	Val	His	Asp	Val	His
		515				520						525			
Asp	Pro	Ala	Glu	Val	Ala	Arg	Phe	Ala	Gln	Val	Leu	Thr	Val	Phe	Val
		530				535					540				
Arg	Lys	Leu	Val	Phe	Leu	Val	Phe	Ile	Glu	Phe	Leu	Leu	Leu	Ala	Asp
545					550					555					560
Glu	Val	Arg	His	Glu	Ala	Asp	Ile	Ala	Phe	Thr	Val	Leu	Leu	Glu	Gly
				565					570					575	
Lys	Ala	Gly	Ile	Gln	Phe	Lys	Ser	Leu	Ala	Ala	Glu	Leu	Gly	Arg	His

Gln Gln Val Phe His His Leu His Gln Phe Val Gly Leu Val Cys Cys
 705 710 715 720
 Asp Thr Val Glu Thr Glu Ala Ala Gly Phe Leu Ala Leu Pro Glu Glu
 725 730 735
 Val Phe Glu Glu Val Val Gln His Ile Ala Val Ala Val Glu Leu Gln
 740 745 750
 Glu Thr Leu Arg Val Leu Arg Phe Arg Gly Gly Thr Leu Gly Gly Thr
 755 760 765
 Val Gly Ile Gln Pro Gly Tyr His Ala Asp Phe Ala Arg Leu Leu Val
 770 775 780
 Thr Asp Tyr Gln His Val Leu Phe Ala Phe Phe Leu Cys His Leu Lys
 785 790 795 800
 Asn Val Leu Met Gly Tyr Phe
 805

<210> 6964

<211> 74

<212> PRT

<213> B.fragilis

<400> 6964

Ser Lys Ile Ser Phe Leu Thr Ser Arg Met Asp Ser Ser Gly Glu Ser
 1 5 10 15
 Arg Asp Thr Ser Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Leu Pro
 20 25 30
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Thr Thr Lys Phe
 35 40 45
 Glu Glu Glu Pro Gln Lys Ile Ile Ser Ile Phe His Leu Thr Pro Ser
 50 55 60
 Val Phe Gln Ala Ile Leu Arg Ile Pro Tyr
 65 70

<210> 6965

<211> 653

<212> PRT

<213> B.fragilis

<400> 6965

Ala Arg Asn Arg Leu Asp Arg Arg Val Cys Arg Gln Phe Asp Gly Phe
 1 5 10 15
 Gly Val Gln Met Gly Lys Gln Asp Ala Gln Cys Ser Glu Ser Val Ser
 20 25 30
 Arg Ser Ile Ser Pro Cys Arg Val Pro Cys Cys Lys Gln Gly Glu Leu
 35 40 45
 Phe Gly Val Cys Ile Lys Thr Lys Lys Tyr Arg Asn Met Tyr Leu Ser
 50 55 60
 Ser Leu His Ile Arg Gln Phe Arg Val Phe Asp Asp Ile Thr Leu Tyr
 65 70 75 80
 Phe Lys Asn Gly Ile Asn Ile Leu Ile Gly Glu Asn Asn Ser Gly Lys
 85 90 95
 Thr Ala Ile Ile Asp Ala Leu Arg Ile Cys Leu Gly Cys Gly Lys Pro
 100 105 110
 Asp Asn Tyr Ile Tyr Ile Gln Glu Ser Asp Leu His Val Asn Ser Thr
 115 120 125
 Val Pro Thr Glu Asn Asn Thr Thr Ile Gln Phe Asp Leu Thr Phe Glu
 130 135 140
 Phe Gly Asp Ala Leu Ile Glu Arg Glu Cys Phe Tyr Asp Phe Ile Ser
 145 150 155 160
 Gln Asp Lys Glu Asp Pro Ala Lys Gln Thr Ile Gln Leu His Leu Lys

					165					170					175
Phe	Ile	Gln	Glu	Asn	Asn	Gly	Lys	Lys	Lys	Tyr	Phe	Lys	Arg	Met	Ile
			180					185					190		
Trp	Gly	Gly	Asp	Asn	Glu	Gly	Gln	Gln	Val	Pro	Tyr	Glu	Ser	Leu	Gln
		195					200					205			
Glu	Ile	Phe	Tyr	Thr	Tyr	Leu	Ser	Pro	Leu	Arg	Asp	Ala	Val	Ser	Cys
	210					215					220				
Leu	Arg	Pro	Tyr	Ser	Tyr	Asp	Asn	Lys	Thr	Ser	Gln	Leu	Phe	Asn	Gln
225					230					235					240
Leu	Thr	Lys	Tyr	Asn	Lys	Gly	Glu	Glu	Glu	Ile	Glu	Leu	Asn	Glu	Glu
			245						250					255	
Arg	Lys	Asp	Leu	Leu	Ala	Lys	Asn	Leu	Tyr	His	Val	Phe	Glu	Asp	Asp
			260					265					270		
Ala	Ser	Asp	Trp	Lys	His	Ile	Leu	Thr	Thr	Gly	Lys	Ser	Lys	Val	Asn
		275					280					285			
Ala	His	Leu	Glu	Gly	Thr	Gly	Ile	Thr	Arg	Lys	His	Pro	Asn	Ile	Glu
	290					295				300					
Met	Arg	Tyr	Val	Gly	Arg	Lys	Phe	Ser	Asp	Val	Val	Arg	Gly	Val	Glu
305					310				315						320
Leu	Lys	Cys	Pro	Val	Tyr	Lys	Thr	Ile	Glu	Asp	Gly	Gln	Glu	Gln	Lys
			325						330				335		
Tyr	Phe	Glu	Leu	Tyr	Gln	Asn	Gly	Leu	Gly	Glu	Asn	Asn	Leu	Ile	Phe
			340					345					350		
Thr	Ser	Val	Val	Leu	Gly	Asp	Leu	Ile	Asn	Arg	Cys	Glu	Asp	Asn	Ala
		355				360						365			
Leu	Glu	Ile	Tyr	Asn	Ala	Leu	Leu	Val	Glu	Glu	Pro	Glu	Ala	His	Leu
	370					375					380				
His	Pro	Gln	Tyr	Gln	Asn	Thr	Phe	Phe	Glu	Tyr	Leu	Asn	Glu	Leu	Gln
385					390				395						400
Ser	Lys	Gly	Leu	Gln	Val	Phe	Val	Thr	Ser	His	Ser	Pro	Thr	Ile	Thr
			405						410					415	
Ala	Lys	Ser	Asp	Val	Asn	Asn	Ile	Ser	Val	Leu	Gln	Arg	Lys	Gln	Asn
			420					425				430			
Ile	Val	Gln	Ser	Phe	Ser	Phe	Gly	Lys	Leu	Thr	Glu	Ser	Asp	Tyr	Pro
		435					440					445			
Ala	Glu	Ser	Lys	Arg	His	Leu	Arg	Lys	Phe	Leu	Asp	Thr	Thr	Lys	Ala
	450					455				460					
Gln	Leu	Phe	Phe	Ala	Asn	Gly	Val	Leu	Leu	Val	Glu	Gly	Val	Ala	Glu
465					470				475						480
Ala	Ile	Ile	Ile	Pro	Ile	Leu	Ala	Lys	Lys	Phe	Leu	Ser	Glu	Lys	Ile
			485						490					495	
Asp	Leu	Cys	Lys	Ser	Gly	Ile	Glu	Leu	Val	Asn	Ile	Gly	Gly	Val	Ala
			500					505					510		
Phe	Asn	His	Phe	Gly	Leu	Leu	Phe	Asn	Asn	Asp	Asp	Glu	Ser	Lys	Arg
		515	</												

Tyr Ile Lys Asp Ala Ile Leu Phe Val Ala Pro Ser Glu
645 650

<210> 6966
<211> 180
<212> PRT
<213> B.fragilis

<400> 6966
Leu Phe Thr Ser Ser Ser Val Asn Leu Ile Glu Met Gln Glu Ile Ser
1 5 10 15
Phe Arg Asp Asp Ile Leu Pro Leu Lys Asp Lys Leu Phe Arg Leu Ala
20 25 30
Leu Arg Ile Thr Phe Asp Arg Ala Glu Ala Glu Asp Val Val Gln Asp
35 40 45
Thr Met Ile Arg Val Trp Asn Lys Arg Glu Glu Trp Thr Gln Phe Gly
50 55 60
Ser Ile Glu Ala Tyr Cys Leu Thr Val Ala Lys Asn Leu Ala Ile Asp
65 70 75 80
Arg Ser Gln Lys Lys Glu Ala Gln Asn Val Glu Leu Thr Pro Glu Met
85 90 95
Glu Glu Glu Ser Glu Ile Ser Gly Pro Tyr Asp Gln Leu Val Asn Asn
100 105 110
Glu Arg Met Ser Ile Ile His Arg Leu Ile Asn Glu Leu Pro Glu Lys
115 120 125
Gln Arg Leu Ile Met Gln Leu Arg Asp Ile Glu Gly Glu Ser Tyr Lys
130 135 140
Glu Ile Ala Lys Ile Leu Asn Leu Thr Glu Glu Gln Val Lys Val Asn
145 150 155 160
Leu Phe Arg Ala Arg Gln Lys Val Lys Gln Arg Tyr Leu Glu Ile Asp
165 170 175
Glu Tyr Gly Leu
180

<210> 6967
<211> 99
<212> PRT
<213> B.fragilis

<400> 6967
Val Leu Val Arg Asn Val Phe Leu Ile Asp Arg Lys Asn Arg Leu Tyr
1 5 10 15
Leu Leu Cys Val Thr Lys Thr Thr Glu Tyr Met Lys Lys Phe Leu Lys
20 25 30
Ala Ile Gly Cys Phe Ala Ile Phe Val Leu Ala Val Phe Ser Tyr Phe
35 40 45
Arg Glu Gln Pro Tyr Lys Leu Asp Ser Leu Ser Leu Gln Asn Val Glu
50 55 60
Ala Leu Ala Glu Gly Glu Glu Tyr Thr His Ile Ser Cys Ile Gly Val
65 70 75 80
Gly Ser Leu Asp Cys Pro Val Asn His Ser Gly Val Lys Tyr Ile Phe
85 90 95
Lys Gly Tyr

<210> 6968
<211> 198
<212> PRT
<213> B.fragilis

<400> 6968

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Arg Thr Ser Ser Ala Leu Thr Met Arg Lys Tyr Ile Ala Ile Ile Ile
1          5          10          15
Ala Ser Leu Ala Leu Cys Thr Gly Gln Ala His Ala Gln Arg Cys Leu
20          25          30
Pro Lys Met Gln Gly Ile Glu Val Arg Ala Asn Met Ala Asp Gly Phe
35          40          45
Asn Pro Gly Gly Asn Asp Gly Gly Tyr Ser Phe Gly Ala Ala Leu Ser
50          55          60
Thr Tyr Thr Lys Lys Gly Asn Lys Trp Met Phe Gly Gly Glu Tyr Leu
65          70          75          80
Leu Lys Asn Asn Pro Tyr Lys Asp Gly Lys Ile Pro Val Ala Gln Phe
85          90          95
Thr Ala Glu Gly Gly Tyr Tyr Phe Lys Ile Leu Ser Asp Ala Arg Lys
100         105         110
Ile Val Phe Val Tyr Ala Gly Ala Ser Ala Leu Ala Gly Tyr Glu Ser
115         120         125
Val Asn Trp Gly Glu Lys Val Leu His Asp Gly Ser Met Leu His Asp
130         135         140
Arg Asp Ala Phe Ile Tyr Gly Gly Ala Leu Thr Leu Asp Val Glu Phe
145         150         155         160
Tyr Val Ala Asp Arg Ile Ala Leu Leu Ala Asn Leu Arg Glu Arg Cys
165         170         175
Leu Trp Gly Gly Asp Thr Arg Lys Phe His Thr Gln Trp Gly Val Gly
180         185         190
Ile Lys Phe Ile Ile Asn
195

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<210> 6969

<211> 272

<212> PRT

<213> B.fragilis

<400> 6969

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Glu Ile Lys Ser Arg Lys Asp Trp Leu Tyr Gly Lys Tyr Cys Ile Asp
1          5          10          15
Leu Pro Gly Asn Ala His Tyr Asp Lys Phe Glu Leu Arg Gln Phe Ile
20          25          30
Phe Ile Met Lys Cys Ile His Ile Ile Thr Pro Val Lys Asp Ser Ile
35          40          45
Glu Leu Thr Leu Gln Thr Ala Glu Ala Ile Leu Lys Ser Asp Phe Thr
50          55          60
Val Pro Phe His Tyr Thr Ile Tyr Asn Asp Phe Ser Thr Asp Glu Asn
65          70          75          80
Thr Lys Gln Leu Lys Glu Ala Ser Leu Lys Met Gly Phe Glu Leu Val
85          90          95
Asn Leu Ser Glu Ile Thr Ser His Pro Ser Pro Asn Tyr Leu Leu Val
100         105         110
Leu Gln Met Ala Gln Glu Lys Ala Ile Ala Ala Glu Ala Gly Leu Leu
115         120         125
Ile Val Glu Ser Asp Val Ile Val Lys Lys His Thr Leu Gln Ser Leu
130         135         140
Phe Asp Gly Ala Gln Ala Arg Lys Asp Cys Gly Ile Ala Ala Ala Val
145         150         155         160
Thr Val Asp Glu His Glu Ala Ile Asn Tyr Pro Tyr Leu Tyr Ala Lys
165         170         175
Gly Lys Glu Asn Gln Val Phe Pro Glu Lys Lys His Leu Ser Phe Cys
180         185         190

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Cys Ser Leu Leu Thr Thr Asp Phe Leu Arg Ala Phe Asp Phe His Ser
 195 200 205
 Leu Asn Pro Glu Lys Asn Trp Phe Asp Val Thr Ile Ser His Gln Ala
 210 215 220
 Leu Glu Lys Gly Phe Val Asn Tyr Leu Phe Thr Thr Leu Thr Val Trp
 225 230 235 240
 His Arg Pro His Ser Ser Arg Pro Trp Lys Gln Leu Lys Tyr Thr Asn
 245 250 255
 Pro Leu Lys Tyr Trp Trp Leu Lys Phe Thr Lys Gly Leu Asp Lys Ile
 260 265 270

<210> 6970
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 6970
 Ile Arg Lys Arg Ile Arg Lys Thr Gly Ser Pro His His Asp Gly Gly
 1 5 10 15
 Ser Met Leu Ala Gln Val Gln Ala Ser Val Glu Ile Leu Ser Pro Val
 20 25 30
 Pro Val Ser Gly Lys Cys Gly Glu Lys Asp Tyr Asp Gly Leu Phe Ile
 35 40 45
 Arg Glu Pro Glu Val Lys Ala Arg Glu Gly Lys Met Ala Tyr Val Arg
 50 55 60
 Pro Glu Tyr His Asp Arg Ile Met Arg Ile Thr Arg Val Ile Gly His
 65 70 75 80
 Asp Arg Leu Ser Leu Ser Ala Tyr Ile Asp His Val Leu Thr His His
 85 90 95
 Phe Asn Gln Cys Glu Glu Ala Ile Lys Ser Leu Tyr Ala Arg Asn Tyr
 100 105 110
 Asp Ala Val Phe
 115

<210> 6971
 <211> 627
 <212> PRT
 <213> B.fragilis

<400> 6971
 Ala Gly Glu Ser Pro Val His Gly Glu Gly Lys Gln Leu Ile Ile Leu
 1 5 10 15
 Met Gln Ile Thr Glu Asn Val Arg Asp Ile Met Arg Ser Pro Glu Tyr
 20 25 30
 Val Leu Asn Ser Leu Thr Glu His Ser Glu Asn Leu Asn Tyr Lys Phe
 35 40 45
 Glu Arg Leu Tyr Arg Ile Phe Phe Asn Glu Glu Met Tyr Tyr Val Ala
 50 55 60
 Tyr Gln Arg Ile Tyr Ala Lys Pro Gly Asn Met Thr Ala Gly Ala Asp
 65 70 75 80
 Gly Lys Thr Ile Asp Gln Met Ser Leu Asn Arg Ile Glu Gln Leu Ile
 85 90 95
 Thr Ser Leu Lys Asp Glu Ser Tyr Gln Pro Gln Pro Ser Lys Arg Met
 100 105 110
 Tyr Ile Pro Lys Lys Asn Gly Lys Met Arg Pro Leu Gly Val Pro Ala
 115 120 125
 Phe Asn Asp Lys Leu Leu Gln Glu Val Val Arg Met Ile Leu Glu Ala
 130 135 140
 Ile Tyr Glu Arg Gln Phe Glu Lys Thr Ser His Gly Phe Arg Pro Leu

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0

145					150					155					160
Arg	Ser	Cys	His	Thr	Ala	Leu	Ser	Asp	Ile	Gln	Lys	Thr	Phe	Ser	Gly
				165					170					175	
Val	Lys	Trp	Phe	Val	Glu	Gly	Asp	Ile	Lys	Gly	Phe	Phe	Asp	Asn	Ile
			180					185					190		
Asn	His	Glu	Ile	Leu	Ile	Gly	Ile	Leu	Lys	Glu	Arg	Ile	Ala	Asp	Glu
		195					200					205			
Arg	Phe	Ile	Arg	Leu	Ile	Arg	Lys	Phe	Leu	Asn	Ala	Gly	Tyr	Ile	Glu
	210					215					220				
Asp	Trp	Asn	Phe	His	Asn	Ser	Tyr	Ser	Gly	Thr	Pro	Gln	Gly	Gly	Ile
225					230					235					240
Val	Ser	Pro	Ile	Leu	Ala	Asn	Ile	Tyr	Leu	Asp	Lys	Leu	Asp	Lys	Phe
				245					250					255	
Met	Lys	Glu	Tyr	Thr	Gly	Lys	Phe	Asp	Lys	Gly	Lys	Glu	Arg	Lys	Arg
			260					265					270		
Thr	Lys	Gln	Val	Val	Ser	Leu	Glu	Gly	Lys	Arg	His	Arg	Ile	Leu	Lys
		275					280					285			
Lys	Leu	Lys	Val	Val	Lys	Asp	Lys	Ser	Glu	Arg	Ser	Glu	Leu	Ile	Arg
	290					295					300				
Gln	Tyr	Lys	Ala	Tyr	Gln	Lys	Glu	Gly	Leu	Gln	Tyr	Ser	Asp	Gly	Asp
305					310					315					320
Glu	Met	Asp	Met	Asn	Tyr	Arg	Lys	Leu	Lys	Tyr	Val	Arg	Tyr	Ala	Asp
				325					330					335	
Asp	Phe	Leu	Ile	Gly	Ile	Ile	Gly	Ser	Lys	Gln	Asp	Ala	Ile	Ile	Ile
			340					345					350		
Lys	Glu	Asp	Ile	Lys	Asn	Phe	Leu	Tyr	Glu	Lys	Leu	Ala	Leu	Thr	Leu
		355					360					365			
Ser	Asp	Glu	Lys	Thr	Leu	Ile	Thr	His	Ala	Glu	Asn	Ala	Ala	Lys	Phe
	370					375					380				
Leu	Gly	Tyr	Glu	Ile	Phe	Val	Arg	Lys	Ser	Asn	Asp	Thr	Lys	Arg	Ser
385				390						395					400
Lys	Tyr	Gly	Val	Leu	Arg	Arg	Val	Phe	Asn	Lys	Arg	Ile	Gln	Leu	Ala
				405					410				415		
Leu	Gly	Lys	Asp	Thr	Phe	Lys	Lys	Lys	Leu	Leu	Glu	Tyr	Arg	Val	Leu
			420					425					430		
Glu	Ile	Lys	Ile	His	Asn	Gly	Lys	Glu	Tyr	Trp	Lys	Ala	Lys	Ser	Arg
		435					440					445			
Pro	Lys	Leu	Ser	Asn	Asn	Asn	Asp	Phe	Glu	Ile	Leu	Asp	Arg	Tyr	Asn
	450					455					460				
Lys	Glu	Ile	Lys	Gly	Ile	Tyr	Asn	Tyr	Tyr	Cys	Leu	Ala	Asn	Asn	Cys
465					470					475					480
Ser	Ser	Leu	Ser	Lys	Leu	Gly	Tyr	Ile	Met	Lys	Tyr	Ser	Met	Tyr	Lys
				485					490					495	
Thr	Phe	Ala	Gln	Lys	Tyr	Arg	Thr	Thr	Met	Ser	Gln	Ile	Arg	Lys	Lys
			500	</											

Asn Asn Glu
625

<210> 6972
<211> 160
<212> PRT
<213> B.fragilis

<400> 6972
Val Leu Gly Arg Asn Gln Pro Tyr His Gln Thr Ser Met Ser Met Gly
1 5 10 15
Ser Arg Lys Val Asn Thr Glu Gly Ile Asp Glu Glu Leu Leu Ile Ala
20 25 30
Ser Ile Gly Arg Arg Lys Gln Asp Gly Thr Leu Tyr Arg Ala Gln Glu
35 40 45
Pro Pro Val Pro Ala Pro Glu Glu Glu Ser Val Pro Glu Thr Glu Pro
50 55 60
Pro Pro Thr Ala Ser Pro Ser Arg Glu Lys Val Gln Lys Asp Thr Ala
65 70 75 80
Arg Arg Lys Arg Gln Glu Asp Asp Tyr Ser Gly Leu Phe Leu Arg Arg
85 90 95
Asn Glu Ile Lys Thr Arg Gln Cys Val Tyr Ile Ser Arg Asp Val His
100 105 110
Ser Lys Ile Leu Lys Ile Val Asn Asp Ile Ala Gly Arg Glu Ile Ser
115 120 125
Val Gly Gly Tyr Val Asp Thr Val Leu Arg Gln His Leu Glu Gln His
130 135 140
Lys Glu Lys Ile Asn Glu Leu Tyr Lys Asn Gln Arg Glu Asp Leu Ile
145 150 155 160

<210> 6973
<211> 439
<212> PRT
<213> B.fragilis

<400> 6973
Lys Phe Leu Gly Cys Phe Pro Phe Gly Glu His Glu Ser Arg Val Val
1 5 10 15
Val Pro Val Lys Gly Asn His Gly Ile Glu Ala Leu Ala Leu Leu Ala
20 25 30
Leu Glu Ala Phe Glu Gln Phe Arg Val Ser Val Gly Glu Gln Val Phe
35 40 45
Asp Leu Val Ile Gly Glu Gly Thr Val Cys Leu Gln Ala Glu His Gly
50 55 60
Gln Pro Ala Leu Arg Val Val Ala Ala Asp Asp Leu Ala Val Lys Leu
65 70 75 80
His Thr Ser Arg Ser Ala Leu Gly Thr Leu Ala Ala Gly Ile Pro Ala
85 90 95
Gly Glu Gln Leu Val Ala Arg Glu Gln Phe Gly Gly Asn Phe Leu Arg
100 105 110
Val Arg Leu Tyr Leu Leu Ala Glu Gly Ile Gly Arg Gln Phe Pro Ala
115 120 125
Leu Asn Ala Cys Gln Leu Leu Phe Pro Phe Ala Arg His Gly Asn Val
130 135 140
Gly Asp Ala His Arg Leu His Asp Arg Val Glu Gly Lys Pro Leu Phe
145 150 155 160
Gly Arg Tyr Lys Arg Leu Leu Ala Ala Phe His Val Ser Pro Phe Glu
165 170 175
Lys Arg Phe Asp Asn Arg Cys Thr Gly Ser Arg Arg Ala Asn Ala Ala

180	185	190
Val Leu Gln Ser Leu Thr Gln Arg Ile Val Leu Asn Leu Leu Ala Cys		
195	200	205
Arg Phe His Ser Gly Gln Gln Gly Gly Phe Gly Met Gln Arg Phe Arg		
210	215	220
Leu Gly Leu Ala Leu Cys Asp Gly Gly Ser Phe Gln Cys Gln Arg Val		
225	230	235
Ala Phe Leu Pro Ala Gly Asp Asp Gly Phe Leu Phe Leu Phe Leu Ala		
245	250	255
Ile Asp Gly Thr Pro Pro Gly Leu Phe Asp Asp Ala Ala Phe Cys His		
260	265	270
Glu Leu Arg Ser Gly Thr Leu Arg Arg Asn Ser Gly Gly Val Phe Asp		
275	280	285
Ala Phe Phe Arg Glu Ser Leu Asn His Ala Ser Gly Asn His Leu Ile		
290	295	300
Asp Gly Ile Ile Phe Phe Gly Glu Glu Gln Arg Phe Leu Ala Arg Asp		
305	310	315
Glu Gln Gly Val Val Val Arg Tyr Leu Ala Thr Val His Ala Ala Ala		
325	330	335
Cys Arg His Gly Phe Arg Ile Asp Phe Ala Phe Pro Phe Gly Gln Ala		
340	345	350
Ala Asp Glu Gly Glu Gln Leu Gly Tyr Phe His Glu His Val Phe Trp		
355	360	365
Asp Val Ala Ala Ser Cys Ser Trp Ile Gly Asp Glu Phe Leu Leu Val		
370	375	380
Glu Leu Leu Cys Asp Phe Lys Arg Leu Phe Cys Arg Glu Ala Val Leu		
385	390	395
Gly Val Gly Phe Leu Leu Glu Arg Gly Gln Val Val Gln Lys Arg Ser		
405	410	415
Val Leu Arg Leu Leu Leu Ala Phe Cys Phe Arg Asp Ser Gly Cys Ala		
420	425	430
Cys Phe Leu Tyr Leu Ile Val		
435		

<210> 6974

<211> 179

<212> PRT

<213> B.fragilis

<400> 6974

Pro Arg Asn Gly Asp Ala Glu Gln Ser Phe Val Ser Thr Phe Leu Thr	
1 5 10 15	
Ile Lys Ser Asn Asp Tyr Gly Asn Thr Asn Asp His Gln Arg Ser Lys	
20 25 30	
Tyr Leu His Glu Ser Arg Asp Arg Glu Ile Arg Glu Val Pro Asn Gly	
35 40 45	
Tyr Arg Gln Thr Gln Ala Asp Thr Cys Ala Ile Arg Leu Pro Pro His	
50 55 60	
Gly Arg Gly Ile Ile Leu Cys Glu Thr His Val Gly Arg Val Pro	
65 70 75 80	
Asn Arg Thr Gly Gln Val Ala Asp Gly Lys Lys Arg Lys Gly Gly Gln	
85 90 95	
Ala Met Asn Glu Ser Gly Tyr Gln Thr Leu Ile Val Lys Phe Ser Lys	
100 105 110	
Pro Ile Thr Glu Leu Asp Gly Ile Phe Asp Asp Ala Glu Ala Trp Gly	
115 120 125	
Val Glu Thr Leu Lys Gly Trp Val Glu Asp Tyr Glu Ser Ser Arg Phe	
130 135 140	
Thr Ala Ile Asp Thr His Thr Ala Val Ile Thr Ser Glu Tyr Asn Met	

145 150 155 160
 Glu Cys Val Lys Thr Trp Leu Glu Arg Asn Thr Pro Ile Ala Glu Lys
 165 170 175
 Thr Glu Phe

<210> 6975
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 6975
 His Pro His Gly Ser His Asn Glu Arg Val Gln Tyr Gly Val Cys Glu
 1 5 10 15
 Asn Met Val Gly Lys Glu His Pro His Ser Arg Glu Asn Arg Ile Leu
 20 25 30
 Asn Ile Arg Ala Val Ser Ala Pro Pro Glu His Ser Thr Gln Arg Arg
 35 40 45
 Met Asn Met Ile Ala Lys Thr Ile Leu Glu Gln Ile Gly Gly Arg Arg
 50 55 60
 Phe Ala Ala Met Thr Gly Ser Lys Asp Phe Ile Asp Met Gly Asn Gly
 65 70 75 80
 Leu Arg Met Ser Leu Ala Arg Asn Lys Thr Ser Ala Asn Arg Leu Asp
 85 90 95
 Ile Ile Tyr Asp Ala Gly Ala Asp Leu Tyr Asn Met Arg Phe Tyr Arg
 100 105 110
 Arg Thr Phe Ser Lys Lys Thr Phe Glu Cys Lys Thr Lys Asp Ile Glu
 115 120 125
 Thr His Glu Arg Ile Tyr Cys Asp Met Leu Glu Glu Met Phe Thr Met
 130 135 140
 Val Thr Gly Leu Tyr Thr Arg Phe
 145 150

<210> 6976
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 6976
 Phe Arg Leu Met Lys Pro Arg Thr Gln Ile Gln Gln Glu Val Ala His
 1 5 10 15
 Leu Ser Lys Arg Leu Pro Arg Leu Thr Ala Thr Gln Lys Ala Tyr Ala
 20 25 30
 Phe Arg His Cys Phe Lys His Tyr Ala Ile Lys Arg Ala Asp Gly Thr
 35 40 45
 Asn Ile Cys Thr Glu Cys Gly His Ser Trp Lys Ser Asp His Asp Leu
 50 55 60
 Ala Asp Thr Ile Cys Gly Cys Thr Cys Pro His Cys Gly Met Gln Leu
 65 70 75 80
 Glu Ala Leu Arg Thr Arg Lys Ser Val Phe Ser Glu Asn Glu Tyr Phe
 85 90 95
 Ser Ile Val Thr Thr Ser Lys Gln Tyr Gln Val Ile Arg Phe Phe Phe
 100 105 110
 Val Lys Ser Arg Tyr Lys Ala Gly Gln Ala Ala Glu Tyr Ser Ile Tyr
 115 120 125
 Glu Val Val Gln Arg Trp Ile Ser Pro Asp Gly Lys Thr Thr Thr Val
 130 135 140
 Ala Arg Leu Arg Gly Met Ser Met Leu Tyr Tyr Asp Gln Trp Ser Glu
 145 150 155 160

Tyr Ser Asp Met Glu Val Arg Lys Asn Asn Gly Leu His Ala Tyr Asp
 165 170 175
 Ile Thr Pro Met Cys Thr Tyr Pro Arg Gln Arg Phe Ile Pro Glu Leu
 180 185 190
 Lys Arg Asn Gly Phe Lys Gly Asp Tyr His Asn Thr Leu Pro Tyr Asp
 195 200 205
 Leu Phe Thr Ala Ile Leu Ser Asp Ser Arg Thr Glu Thr Leu Leu Lys
 210 215 220
 Ala Gly Gln Tyr Ala Met Leu Arg His Tyr Ile Arg Ser Ser Phe Asp
 225 230 235 240
 Met Gly Arg Tyr Trp Ala Ser Val Lys Ile Cys Ile Arg Asn Gly Tyr
 245 250 255
 Thr Ile Ser Asp Gly Ser Val Trp Cys Asp Thr Ile Asp Leu Leu Arg
 260 265 270
 His Phe Gly Lys Asp Thr Asn Ser Pro Lys Tyr Val Cys Pro Ala Asn
 275 280 285
 Leu Lys Ala Glu His Asp Lys Leu Val Ala Lys Arg Asn Leu Gln Arg
 290 295 300
 Glu Arg Glu Arg Thr Glu Gln Gln Arg Gln Lys Ala Ile Glu Asp Glu
 305 310 315 320
 Lys Asn Tyr Leu Lys Ala Lys Gly Ile Phe Phe Gly Leu Val Phe Ser
 325 330 335
 Asp Ser Leu Ile Cys Ile Lys Val Ile Glu Ser Val Lys Glu Met Glu
 340 345 350
 Glu Glu Gly Arg Ile Met His His Cys Val Gly Gly Tyr His Asn Lys
 355 360 365
 Ala Asn Ser Leu Ile Leu Ser Ala Thr Ile Asp Gly Lys Arg Ile Glu
 370 375 380
 Thr Ile Glu Val Ser Leu Lys Thr Leu Lys Val Val Gln Ser Arg Gly
 385 390 395 400
 Val Cys Asn Ser Asn Thr Glu Tyr His Asp Arg Ile Ile Arg Leu Val
 405 410 415
 Glu Asp Asn Ala Gly Leu Ile Arg Gln Arg Met Asn Ala Ala
 420 425 430

<210> 6977

<211> 93

<212> PRT

<213> B.fragilis

<400> 6977

Tyr Gln Pro Ile Ile Lys Asn Asn Met Asp Val Arg Phe Glu Ser Met
 1 5 10 15
 Val Cys Leu Trp Asp Asp Lys Ile Pro Thr Met Phe Leu Glu Phe Met
 20 25 30
 Asn Leu Leu Thr Phe Cys Gln Ser Glu Glu Gln Leu Arg Ala Gly Val
 35 40 45
 Lys Asp Phe Ser Glu Lys His Glu Leu Asp Lys Phe Phe Leu Tyr Gly
 50 55 60
 Phe Gly Ser His His Phe Tyr Leu His Gln Arg Tyr Thr Ser Asn Pro
 65 70 75 80
 Glu Met Val Met Gln Asn Arg Val Leu Ser Val His Phe
 85 90

<210> 6978

<211> 232

<212> PRT

<213> B.fragilis

<400> 6978

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Lys Arg Leu Phe Met Tyr Ser Ile Leu Ile Ile Glu Asp Glu Gln Arg
1           5           10           15
Val Ala Asp Leu Leu Arg Ala Gly Leu Glu Glu Asn Gly Tyr Asn Cys
          20           25           30
Leu Val Ala Tyr Asp Gly Ala Met Gly Leu Arg Met Phe Arg Ala Asn
          35           40           45
Thr Phe Asp Leu Val Ile Ser Asp Ile Val Leu Pro Lys Met Asp Gly
          50           55           60
Phe Glu Leu Cys Lys Glu Ile Arg Ala Ala Asn Pro Ala Ile Pro Ile
65           70           75           80
Leu Met Leu Thr Ala Leu Gly Ser Thr Asp Asp Lys Leu Asp Gly Phe
          85           90           95
Asp Ala Gly Ala Asp Asp Tyr Met Val Lys Pro Phe Asp Phe Arg Glu
          100          105          110
Leu Tyr Ala Arg Ile Arg Val Leu Leu Lys Arg Lys Leu Ala Val Val
          115          120          125
Thr Asp Val Glu Glu Glu Leu Asn Tyr Ala Asp Leu Ser Val Asn Leu
          130          135          140
Leu Asp Lys Ser Val Lys Arg Ala Gly Arg Asp Ile Lys Leu Ser Pro
145          150          155          160
Lys Glu Tyr Asn Leu Leu Val Tyr Met Ile Glu Asn Ala Glu Lys Val
          165          170          175
Val Ser Arg Met Asp Ile Ala Asp Lys Val Trp Asn Thr His Phe Asp
          180          185          190
Thr Gly Thr Asn Phe Ile Asp Val Tyr Ile Asn Tyr Leu Arg Lys Lys
          195          200          205
Ile Asp Arg Asp Phe Asp Thr Lys Leu Ile His Thr Lys Thr Gly Met
          210          215          220
Gly Phe Ile Leu Thr Asp Lys Leu
225          230

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<210> 6979

<211> 367

<212> PRT

<213> B.fragilis

<400> 6979

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Phe Cys Gly Met Met Glu Lys Asn Lys Arg Val Leu Leu Gly Met Ser
1           5           10           15
Gly Gly Thr Asp Ser Ser Val Ala Ala Met Leu Leu Leu Glu Ala Gly
          20           25           30
Tyr Glu Val Thr Gly Val Thr Phe Arg Phe Tyr Glu Phe Asn Gly Ser
          35           40           45
Thr Glu Tyr Leu Glu Asp Ala Arg Ala Leu Ala Ala Arg Leu Gly Ile
          50           55           60
Gly His Ile Thr Tyr Asp Ala Arg Lys Val Phe Gln Glu Gln Ile Ile
65           70           75           80
Asp Tyr Phe Ile Asp Glu Tyr Met Ser Gly His Thr Pro Val Pro Cys
          85           90           95
Thr Leu Cys Asn Asn Gln Leu Lys Trp Pro Leu Leu Ala Lys Ile Ala
          100          105          110
Asp Glu Met Gly Ile Phe Tyr Leu Ala Thr Gly His Tyr Val Arg Lys
          115          120          125
Gln Trp Val Asp Gly Asn Tyr Tyr Ile Ala Pro Ala Glu Asp Val Asp
          130          135          140
Lys Asp Gln Ser Phe Phe Leu Trp Gly Leu Lys Gln Glu Ile Leu Gln
145          150          155          160
Arg Met Leu Leu Pro Met Gly Gly Met Thr Lys Ser Glu Ala Arg Ala

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				165					170					175			
Tyr	Ala	Ala	Gly	Arg	Gly	Phe	Glu	Lys	Ile	Ser	Lys	Lys	Lys	Asp	Ser		
			180						185					190			
Ile	Gly	Val	Cys	Phe	Cys	Pro	Leu	Asp	Tyr	Arg	Ser	Phe	Leu	Lys	Lys		
		195						200					205				
Cys	Leu	Cys	Asp	Glu	Ser	Gly	Asp	Lys	Asn	Arg	Asn	Ile	Tyr	Arg	Lys		
	210					215					220						
Val	Glu	Arg	Gly	Arg	Phe	Leu	Asp	Glu	Ser	Gly	Asn	Phe	Ile	Ala	Trp		
225						230					235				240		
His	Glu	Gly	Tyr	Pro	Phe	Tyr	Thr	Ile	Gly	Gln	Arg	Arg	Gly	Leu	Gly		
				245					250					255			
Ile	Gln	Leu	Asn	Arg	Ala	Val	Phe	Val	Lys	Glu	Ile	His	Pro	Glu	Thr		
			260						265				270				
Asn	Glu	Val	Val	Leu	Ala	Ser	Leu	Lys	Ser	Leu	Glu	Lys	Ser	Glu	Met		
		275						280				285					
Trp	Leu	Lys	Asp	Trp	Asn	Ile	Val	Asp	Glu	Ser	Arg	Leu	Leu	Gly	Cys		
	290					295					300						
Asp	Asp	Val	Ile	Val	Lys	Ile	Arg	Tyr	Arg	Lys	Gln	Glu	Asn	His	Cys		
305					310					315				320			
Ser	Val	Thr	Ile	Thr	Pro	Glu	Gly	Leu	Leu	His	Ile	Arg	Leu	His	Glu		
				325					330					335			
Pro	Leu	Ser	Ala	Ile	Ala	Glu	Gly	Gln	Ala	Ala	Ala	Phe	Tyr	Lys	Asp		
			340					345					350				
Gly	Leu	Leu	Gly	Gly	Gly	Gly	Ile	Ile	Thr	Met	Ser	Asp	Gln	Arg			
		355					360					365					

<210> 6980

<211> 190

<212> PRT

<213> B.fragilis

<400> 6980

Ile	Ser	Ile	Phe	Val	Arg	Lys	Cys	Arg	Leu	Leu	Met	Ile	Arg	Ile	Phe		
1				5					10					15			
Leu	Thr	Gly	Tyr	Met	Gly	Ala	Gly	Lys	Thr	Thr	Leu	Gly	Lys	Ala	Leu		
		20						25					30				
Ala	Arg	Glu	Leu	His	Ile	Pro	Phe	Ile	Asp	Leu	Asp	Trp	Tyr	Ile	Glu		
		35					40				45						
Glu	Arg	Phe	His	Lys	Thr	Val	Gly	Glu	Leu	Phe	Ser	Glu	Arg	Gly	Glu		
	50					55				60							
Ala	Ser	Phe	Arg	Glu	Leu	Glu	Lys	Asn	Met	Leu	His	Glu	Val	Gly	Glu		
65				70					75					80			
Phe	Glu	Asp	Val	Val	Ile	Ser	Thr	Gly	Gly	Gly	Ala	Pro	Cys	Phe	Phe		
			85					90					95				
Asp	Asn	Met	Glu	Tyr	Met	Asn	Arg	Val	Gly	Thr	Thr	Val	Phe	Leu	Asp		
		100					105					110					
Val	Asp	Pro	Lys	Val	Leu	Phe	Ser	Arg	Leu	Arg	Val	Ala	Lys	Gln	Gln		
	115						120					125					
Arg	Pro	Ile	Leu	Gln	Gly	Lys	Lys	Asp	Asp	Glu	Leu	Leu	Asp	Phe	Ile		
	130					135					140						
Val	Gln	Ala	Leu	Glu	Lys	Arg	Ala	Pro	Phe	Tyr	Arg	Gln	Ala	Asn	Tyr		
145				150						155				160			
Ile	Tyr	Cys	Ala	Asp	Lys	Leu	Glu	Asp	Arg	Ser	Gln	Ile	Glu	Thr	Ser		
			165					170					175				
Val	Gln	Gln	Leu	Arg	Lys	Leu	Leu	Asn	Leu	His	Ile	Ala	Ser				
		180						185					190				

<210> 6981

<211> 425

<212> PRT

<213> B.fragilis

<400> 6981

Phe	Asp	Phe	Ile	Ser	Met	Glu	Leu	Lys	Arg	Val	Val	Val	Thr	Gly	Leu
1				5					10					15	
Gly	Ala	Ile	Thr	Pro	Val	Gly	Asn	Asn	Val	Pro	Glu	Phe	Trp	Glu	Asn
			20					25					30		
Leu	Val	Asn	Gly	Val	Ser	Gly	Ala	Gly	Pro	Ile	Thr	His	Phe	Asp	Ala
		35					40					45			
Ser	Gln	Phe	Lys	Thr	Gln	Phe	Ala	Cys	Glu	Val	Lys	Gly	Phe	Asp	Ala
	50					55					60				
Thr	Gln	Tyr	Ile	Asp	Arg	Lys	Glu	Ala	Arg	Lys	Met	Asp	Leu	Tyr	Thr
65					70					75					80
Gln	Tyr	Ala	Val	Ala	Val	Ala	Lys	Glu	Ala	Val	Ala	Asp	Ser	Gly	Leu
				85					90					95	
Asp	Ile	Glu	Asn	Glu	Asp	Leu	Asn	Arg	Ile	Gly	Val	Ile	Phe	Gly	Ala
			100					105					110		
Gly	Ile	Gly	Gly	Ile	Arg	Thr	Phe	Glu	Glu	Glu	Thr	Ser	Asn	Tyr	Ala
	115						120					125			
Leu	His	Lys	Glu	Asn	Gly	Pro	Lys	Tyr	Asn	Pro	Phe	Phe	Ile	Pro	Lys
	130					135					140				
Met	Ile	Ser	Asp	Ile	Ala	Ala	Gly	Gln	Ile	Ser	Ile	Met	Tyr	Gly	Phe
145					150					155					160
His	Gly	Pro	Asn	Tyr	Ala	Thr	Cys	Ser	Ala	Cys	Ala	Thr	Ser	Thr	Asn
				165					170					175	
Ala	Ile	Ala	Asp	Ala	Phe	Asn	Leu	Ile	Arg	Leu	Gly	Lys	Ala	Asn	Val
			180					185					190		
Ile	Val	Ser	Gly	Gly	Ser	Glu	Ala	Ala	Ile	Ala	Ala	Ala	Gly	Val	Gly
		195					200					205			
Gly	Phe	Asn	Ala	Met	His	Ala	Leu	Ser	Thr	Arg	Asn	Asp	Glu	Pro	Gln
	210					215					220				
Ser	Ala	Ser	Arg	Pro	Phe	Ser	Ala	Ser	Arg	Asp	Gly	Phe	Val	Met	Gly
225					230					235					240
Glu	Gly	Gly	Gly	Cys	Leu	Ile	Leu	Glu	Glu	Leu	Glu	His	Ala	Lys	Ala
				245					250					255	
Arg	Gly	Ala	Lys	Ile	Tyr	Ala	Glu	Val	Ala	Gly	Val	Gly	Met	Ser	Ala
			260				265						270		
Asp	Ala	His	His	Leu	Thr	Ala	Ser	His	Pro	Glu	Gly	Leu	Gly	Ala	Lys
		275					280					285			
Leu	Val	Met	Lys	Asn	Ala	Leu	Glu	Asp	Ala	Glu	Met	Ser	Pro	Glu	Glu
	290					295					300				
Val	Asp	Tyr	Ile	Asn	Val	His	Gly	Thr	Ser	Thr	Pro	Val	Gly	Asp	Ile
305					310					315					320
Ser	Glu	Ala	Lys	Ala	Ile	Lys	Glu	Val	Phe	Gly	Glu	His	Ala	Phe	Glu
			325						330					335	
Leu	Asn	Ile	Ser	Ser	Thr	Lys	Ser	Met	Thr	Gly	His	Leu	Leu	Gly	Ala
		340						345					350		
Ala	Gly	Ala	Val	Glu	Ser	Ile	Ala	Ser	Ile	Leu	Ala	Ile	Lys	Asn	Gly
		355					360					365			
Ile	Val	Pro	Pro	Thr	Ile	Asn	His	Ala	Glu	Gly	Asp	Asn	Asp	Glu	Asn
	370					375					380				
Ile	Asp	Tyr	Asn	Leu	Asn	Phe	Thr	Phe	Asn	Lys	Ala	Gln	Lys	Arg	Glu
385					390					395					400
Ile	Asn	Val	Ala	Leu	Ser	Asn	Thr	Phe	Gly	Phe	Gly	Gly	His	Asn	Ala
			405						410					415	
Cys	Val	Ile	Phe	Lys	Lys	Tyr	Ala	Glu							
		420						425							

<210> 6982
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 6982

His	Thr	Phe	Ile	Ser	Asn	Lys	Ile	His	Ser	Phe	Arg	Asn	Phe	Thr	Leu
1				5					10					15	
Gln	Asn	Thr	Gly	Lys	Ala	Leu	Leu	Val	Ile	Asp	Asp	Val	Asn	Thr	Ser
			20					25					30		
Cys	Gly	Cys	Thr	Ser	Val	Gln	Tyr	Ser	Lys	Glu	Pro	Val	Lys	Pro	Gly
			35				40					45			
Glu	Ser	Leu	Arg	Ile	Thr	Val	Ile	Tyr	Lys	Ala	Asp	His	Pro	Glu	His
	50					55				60					
Phe	Arg	Lys	Thr	Ile	Thr	Ile	Tyr	Cys	Asn	Val	Pro	Thr	Ser	Pro	Leu
65					70					75					80
Gln	Leu	Lys	Ile	Thr	Gly	Asn	Ala	Glu							
															85

<210> 6983
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 6983

Phe	Asn	Leu	Ile	Asp	Leu	Ile	Met	Asn	Val	Asp	Cys	Val	Ile	Val	Thr
1				5					10					15	
Tyr	Asn	Arg	Leu	Ser	Leu	Leu	Lys	Glu	Cys	Ile	Thr	Ala	Val	Lys	Gly
			20					25					30		
Gln	Ser	Tyr	Pro	Ala	Arg	Lys	Ile	Tyr	Val	Ile	Asp	Asn	Asn	Ser	Thr
			35				40					45			
Asp	Gly	Thr	Leu	Glu	Phe	Leu	Glu	Lys	Phe	Ser	Gln	Asp	Ser	Gln	Val
	50					55				60					
Lys	Val	Ile	Asn	Leu	Thr	Glu	Asn	Ile	Gly	Gly	Ala	Gly	Gly	Phe	Ser
65				70					75					80	
Arg	Gly	Ile	Lys	Glu	Ala	Val	Met	Ala	Gly	Ala	Asp	Trp	Val	Trp	Val
				85					90					95	
Met	Asp	Asp	Asp	Thr	Ile	Pro	Tyr	Ser	Asp	Ala	Leu	Glu	Lys	Met	Leu
			100					105					110		
Lys	Thr	Ile	Asp	Leu	Thr	Lys	Asn	Val	Gly	Tyr	Val	Cys	Ser	Lys	Val
			115				120					125			
Leu	Trp	Thr	Asp	Glu	Thr	Pro	His	Arg	Met	Asn	Met	Pro	Gly	Tyr	Ser
	130					135					140				
Ile	Gly	Thr	Gln	Lys	Gly	Val	Leu	Tyr	Asn	Ala	Phe	Ser	Asn	Arg	Asp
145					150					155				160	
Thr	Pro	Ala	Phe	Leu	Ile	His	His	Ala	Ser	Phe	Val	Ser	Leu	Leu	Val
				165				170						175	
Asn	Ala	Lys	Ala	Val	Lys	Ser	Ala	Gly	Leu	Pro	Ile	Ser	Glu	Phe	Phe
			180					185					190		
Ile	Trp	Gly	Asp	Asp	Ile	Glu	Tyr	Thr	Met	Arg	Ile	Ser	Ser	Leu	Gly
		195				200						205			
Tyr	Ile	Gly	Phe	Tyr	Val	Asp	Asn	Ser	Ile	Val	Leu	His	Lys	Thr	Pro
	210					215					220				
Thr	Asn	Tyr	Gln	Pro	Tyr	Pro	Asp	Thr	Ala	Pro	Thr	Asn	Thr	Ala	Trp
225					230					235				240	
Lys	Phe	Tyr	Tyr	Gln	Ala	Arg	Asn	Thr	Ala	Tyr	Leu	Lys	Arg	Arg	Lys
				245					250					255	
Thr	Lys	Asn	Arg	Leu	Cys	Phe	Leu	Leu	Ser	Ile	Ile	Asn	Lys	Tyr	Arg
			260					265						270	

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<210> 6984
<211> 63
<212> PRT
<213> B.fragilis
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<210> 6985
<211> 162
<212> PRT
<213> B.fragilis
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<210> 6986
<211> 456
<212> PRT
<213> B.fragilis
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<400> 6986
Val Met Lys Ile Arg Ser Ile Leu Thr Ile Lys Tyr Ala Gly Ile Thr
1           5           10           15
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Ala	Thr	Ile	Phe	Leu	Val	Phe	Met	Ala	Thr	Ile	Tyr	Cys	Val	Asn	Glu		
			20					25					30				
His	Leu	Arg	Ser	Asp	Ser	Phe	Tyr	Arg	Ser	Leu	Arg	Ser	Glu	Ala	Ile		
		35					40					45					
Thr	Lys	Ala	His	Leu	Phe	Leu	Asn	Asn	Gln	Val	Asp	Val	Glu	Thr	Met		
	50					55					60						
Gln	Ser	Ile	Tyr	Leu	Asn	Asn	Arg	Gln	Phe	Ile	Asp	Glu	Val	Glu	Val		
65					70					75					80		
Ala	Val	Tyr	Thr	Pro	Asp	Phe	Arg	Ile	Leu	Tyr	His	Asp	Ala	Leu	His		
				85					90					95			
Asn	Asp	Ile	Ile	Lys	Glu	Thr	Pro	Gly	Met	Ile	Asp	Glu	Ile	Val	Arg		
			100					105					110				
Lys	Lys	Glu	Ile	Asp	Phe	Arg	Thr	Gly	Asp	Tyr	Gln	Gly	Ile	Gly	Ile		
		115					120				125						
Leu	Tyr	Glu	Phe	Gly	Gly	Lys	Asn	Tyr	Val	Val	Thr	Ala	Ala	Ala	Tyr		
	130					135					140						
Asp	Arg	Tyr	Gly	His	Ile	Asn	Gln	Val	Ile	Met	Thr	Arg	Leu	Leu	Leu		
145					150					155					160		
Leu	Leu	Ser	Ile	Gly	Gly	Leu	Ser	Val	Leu	Val	Ile	Val	Gly	Tyr	Met		
				165				170						175			
Leu	Ala	Lys	Ser	Ser	Leu	Ala	Pro	Ile	Arg	Ser	Ile	Val	Arg	Lys	Ala		
		180						185					190				
Glu	Gly	Ile	Thr	Val	Thr	Gln	Ile	Asp	Glu	Arg	Leu	Pro	Val	Lys	Asn		
		195				200					205						
Glu	His	Asp	Glu	Leu	Gly	Glu	Leu	Ala	Leu	Ala	Phe	Asn	Ala	Leu	Leu		
	210					215					220						
Asp	Arg	Val	Glu	Lys	Thr	Phe	Asn	Asp	Gln	Arg	Met	Phe	Val	Ser	Asn		
225					230					235					240		
Val	Ser	His	Glu	Leu	Arg	Thr	Pro	Met	Ala	Ala	Leu	Ser	Ala	Glu	Leu		
				245					250					255			
Asp	Leu	Ala	Leu	Gln	Lys	Glu	Arg	Thr	Val	Thr	Gln	Tyr	Gln	Asn	Ser		
		260						265					270				
Ile	His	Asn	Ala	Leu	Gln	Asp	Ser	Gln	Arg	Val	Ile	Glu	Leu	Ile	Asp		
	275					280						285					
Gly	Leu	Leu	Asn	Leu	Ala	Lys	Ala	Asp	Tyr	Tyr	Pro	Glu	Gln	Ile	Lys		
	290					295					300						
Lys	Glu	Glu	Ile	Arg	Leu	Asp	Glu	Leu	Leu	Leu	Asp	Ala	Asn	Glu	Leu		
305					310					315					320		
Val	Leu	Lys	Ala	His	Pro	Asp	Tyr	His	Ile	Glu	Leu	Ile	Phe	Glu	Gln		
				325					330					335			
Glu	Ala	Asp	Asp	Asp	Arg	Val	Leu	Thr	Val	Ile	Gly	Asn	Pro	Tyr	Leu		
		340						345					350				
Leu	Thr	Thr	Ala	Phe	Val	Asn	Leu	Ile	Glu	Asn	Asn	Cys	Lys	Tyr	Ser		
	355					360						365					
Asp	Asn	Arg	Thr	Ser	Phe	Ile	Gln	Ile	Ser	Phe	Cys	Asp	Gln	Trp	Thr		
	370					375					380						
Ile	Val	Ser	Leu	Ser	Asp	Asn	Gly	Ala	Gly	Met	Ser	Glu	Thr	Asp	Lys		
385					390					395					400		
Glu	Asn	Leu	Phe	Lys	Leu	Phe	Tyr	Arg	Gly	Glu	Asn	Lys	Asn	Gln	Ala		
				405					410					415			
Gln	Gly	His	Gly	Ile	Gly	Met	Thr	Leu	Thr	Lys	Lys	Ile	Leu	Thr	Leu		
		420						425					430				
His	Lys	Ser	Glu	Ile	Ser	Val	Tyr	Ser	His	Gln	Gly	Glu	Gly	Thr	Thr		
		435					440						445				
Phe	Val	Val	Arg	Phe	His	His	Leu										
	450					455											

<210> 6987

<211> 887

<212> PRT

<213> B.fragilis

<400> 6987

Ser	Ala	Lys	Ile	Met	Ile	Trp	Arg	Lys	Lys	Glu	Lys	Lys	Lys	Ala	Gln
1				5					10					15	
Tyr	Gln	Phe	Asn	Ser	Glu	Arg	Val	Phe	Leu	Val	Ala	Thr	Gln	Pro	Ala
			20					25					30		
Lys	Thr	Ala	Tyr	Ser	Tyr	Phe	Gln	Thr	Ser	Ser	Val	Gly	Leu	Ser	Glu
		35					40					45			
Glu	Glu	Ile	Gly	Gln	Arg	Gln	Ser	Ala	Tyr	Gly	Lys	Asn	Glu	Ile	Ser
	50					55					60				
Arg	Glu	Gln	Lys	Lys	Asn	Pro	Leu	Val	Leu	Phe	Ile	Arg	Thr	Phe	Ile
65					70					75					80
Asn	Pro	Phe	Ile	Gly	Val	Leu	Thr	Ala	Leu	Ala	Val	Ile	Ser	Leu	Val
				85					90					95	
Ile	Asp	Val	Val	Met	Ala	Arg	Pro	Glu	Asp	Arg	Glu	Trp	Thr	Ala	Val
			100					105					110		
Leu	Ile	Ile	Ile	Ser	Met	Val	Val	Cys	Ser	Ala	Ile	Leu	Arg	Phe	Trp
		115					120					125			
Gln	Glu	Trp	Lys	Ala	Ser	Glu	Ala	Thr	Asp	Ser	Leu	Met	Lys	Met	Val
	130						135					140			
Lys	Asn	Thr	Cys	Phe	Val	Lys	Arg	Phe	Ser	Gly	Ser	Glu	Glu	Val	Asp
145					150					155					160
Ile	Thr	Glu	Leu	Val	Pro	Gly	Asp	Val	Val	Cys	Leu	Ala	Ala	Gly	Asp
				165					170					175	
Met	Ile	Pro	Ala	Asp	Ile	Arg	Ile	Ile	Glu	Ser	Lys	Asp	Leu	Phe	Val
			180					185					190		
Ser	Gln	Ala	Ser	Leu	Thr	Gly	Glu	Ser	Asp	Pro	Val	Glu	Lys	Phe	Pro
		195					200					205			
Glu	Ile	Asn	Gly	Arg	Arg	His	Ser	His	Gly	Ser	Val	Ile	Glu	Leu	Asp
	210					215					220				
Asn	Ile	Cys	Tyr	Met	Gly	Ser	Thr	Val	Ile	Ser	Gly	Ser	Ala	Lys	Gly
225					230					235					240
Ile	Val	Phe	Gly	Thr	Gly	Asn	Asp	Thr	Tyr	Leu	Gly	Thr	Ile	Ala	Arg
				245					250					255	
Ser	Leu	Val	Gly	Glu	Arg	Ala	Thr	Thr	Ala	Phe	Asp	Lys	Gly	Ile	Ser
			260					265					270		
Lys	Val	Ser	Phe	Leu	Leu	Ile	Arg	Phe	Met	Leu	Val	Met	Val	Pro	Phe
		275					280					285			
Val	Phe	Phe	Val	Asn	Gly	Phe	Thr	Lys	Gly	Asp	Trp	Phe	Glu	Ala	Phe
	290					295					300				
Ile	Phe	Ala	Leu	Ser	Val	Ala	Val	Gly	Leu	Thr	Pro	Glu	Met	Leu	Pro
305					310					315					320
Met	Ile	Val	Thr	Ala	Asn	Leu	Ser	Lys	Gly	Ala	Val	Ser	Met	Ser	Lys
				325					330					335	
Lys	Lys	Thr	Val	Val	Lys	Asn	Leu	Asn	Ala	Ile	Gln	Asn	Phe	Gly	Ala
			340					345					350		
Met	Asn	Ile	Leu	Cys	Thr	Asp	Lys	Thr	Gly	Thr	Leu	Thr	Cys	Asp	Lys
	355						360					365			
Ile	Val	Leu	Glu	Lys	Tyr	Ile	Asn	Ala	Asp	Gly	Ser	Asp	Asp	His	Ser
	370					375					380				
Arg	Arg	Ile	Leu	Arg	His	Ala	Phe	Leu	Asn	Ser	Tyr	Phe	Gln	Thr	Gly
385					390					395					400
Leu	Lys	Asn	Leu	Met	Asp	Lys	Ala	Ile	Leu	Ala	His	Val	Arg	Glu	Glu
				405					410					415	
Asn	Leu	Glu	His	Leu	Thr	Glu	Gly	Tyr	Thr	Lys	Ile	Asp	Glu	Ile	Pro
			420					425					430		
Phe	Asp	Phe	Ser	Arg	Arg	Arg	Met	Ser	Val	Val	Ile	Glu	Asp	Gln	Gln

<210> 6988

<211> 62
 <212> PRT
 <213> B.fragilis

<400> 6988

Leu	Ala	His	Val	Arg	Ser	Lys	Ser	Phe	Cys	Thr	Met	Val	Cys	Arg	Arg
1			5					10					15		
Ile	Lys	Pro	Leu	Leu	Arg	Lys	Asn	Leu	Tyr	Glu	Ile	Glu	Lys	Ile	Arg
		20					25					30			
Glu	Ile	His	Ile	Lys	Ile	Ser	Arg	Phe	Ile	Val	Thr	Phe	Ala	Tyr	Glu
	35					40					45				
Glu	Phe	Phe	Glu	Gly	Tyr	Ala	Met	Arg	Arg	Arg	Ile	Met	Gln		
	50					55					60				

<210> 6989
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6989

Phe	Ile	Phe	Phe	Lys	Asp	Phe	Ala	Asn	Ile	Cys	Tyr	Ser	Asn	Gln	Lys
1			5					10					15		
His	Lys	Gln	Leu	Tyr	Asn	Leu	Ile	Lys	Asn	Gly	Leu	Ile	His	Tyr	Asn
		20					25					30			
Tyr	Leu	Arg	Ile	Tyr	Tyr	Ile	Leu	Ser	Phe	Lys	Glu	Ile	Asn	Cys	Ile
	35					40					45				
Ile	Ile	Glu	Arg	Asn	Ala	Tyr	Leu	Cys	Asn	Glu	Arg	Asp	Thr	Ser	Lys
	50					55					60				

<210> 6990
 <211> 438
 <212> PRT
 <213> B.fragilis

<400> 6990

Leu	Tyr	Gly	Val	Phe	His	Leu	Leu	Gln	Phe	Arg	Phe	Lys	Val	Met	Leu
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Ala	Leu	Leu	Gln	Thr	Phe	Gln	His	Arg	Pro	Arg	Tyr	Val	Leu	Ser	Leu
		20					25					30			
Leu	Ala	Gln	His	Phe	Glu	Val	Phe	Leu	His	Arg	Val	Lys	Leu	Arg	Leu
	35					40					45				
Gln	Asp	Ala	Leu	Leu	Gln	Leu	Arg	Arg	Leu	Arg	Tyr	Leu	Ala	Glu	Leu
	50					55				60					
Val	Val	Arg	His	Asn	Asp	Thr	Ile	Val	Val	Val	Val	Leu	Asp	Val	Val
65				70					75					80	
Glu	Glu	Thr	His	Ala	Val	Gly	Gly	Arg	Lys	Val	Phe	Leu	Arg	Ser	Val
		85						90					95		
Gln	Asn	Pro	Arg	Val	Gly	Ile	Cys	Arg	Leu	Ile	Gly	Gly	Gly	Asn	Leu
		100					105						110		
Arg	Asn	Ile	Gly	Phe	Gln	Pro	Asp	Asn	His	Arg	Leu	Val	Arg	Gln	Val
	115						120					125			
Gln	Thr	Leu	His	Phe	Met	Arg	Gly	Asp	Ala	His	Tyr	Gln	Arg	Leu	Ala
	130					135					140				
Gly	Ser	Asn	Leu	Val	Val	Thr	Asn	Ser	Ala	Ala	Val	Leu	Phe	Gln	His
145				150					155					160	
Pro	Asp	Ala	Ile	His	Leu	Arg	Gly	Ile	Asp	Ala	Pro	Asp	Ala	Pro	Ala
		165						170					175		
Cys	Gln	Pro	Phe	Gln	Ile	Glu	Val	Gly	Lys	Ser	Leu	Met	Arg	Ala	Val
		180					185						190		

Ile Leu Arg Ala His Glu Thr Val Glu Leu Ala Val Ile His Arg Arg
 195 200 205
 Gln Pro Leu Leu Glu Leu Trp Arg Leu Leu Phe Glu Pro Phe Gly Glu
 210 215 220
 Ala Val Ser Tyr Leu Val Asn Leu Gly Val Gly Glu Leu Tyr Ser Leu
 225 230 235 240
 Ala Val Ala His Leu Asp Val Val Ala Met Leu Val Pro Ala Asp Gly
 245 250 255
 Leu His His Val Gly Thr Gly Val Val Gln Gly Val Phe Gln Lys Val
 260 265 270
 His Ala Val Ile Val Thr Val Ile Pro Leu His Gln Lys Leu Val Arg
 275 280 285
 Asp Phe His Gly Ala Val Ala Ala Arg His Arg Lys Leu Val His Ala
 290 295 300
 Cys Arg Val Gly Asp Phe His Leu Arg Val Glu Gln Pro Ala His Val
 305 310 315 320
 Gly Gly Ile Asp Thr Arg Arg Asn Pro Ala Phe Pro Glu Ile Glu Ile
 325 330 335
 Lys Val Phe Lys Ser Asp Ala Arg Arg Phe Gly Ile Phe Gln Ser Leu
 340 345 350
 Gln Arg Leu Leu His Leu Arg His Thr Phe Thr Phe Gly Val Phe Ala
 355 360 365
 His Pro Ser Leu Tyr Ala Phe Arg Phe Leu Tyr His Val Ser Gly Asn
 370 375 380
 Lys Ala Val Leu Asn Leu Val Thr Gly Tyr Glu Arg Ile Val Ile Asp
 385 390 395 400
 Ala Pro Leu Gln Gly Cys Glu Gln Ile Leu Arg Arg Thr Val Gly Tyr
 405 410 415
 Leu Pro His Ile Val Glu Ile Asp Ser Ala Glu Leu Val Glu Arg Arg
 420 425 430
 Gly Gln Cys Phe Phe Gly
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<210> 6991

<211> 126

<212> PRT

<213> B.fragilis

<400> 6991

Ser Asn Gln Val Ser Thr Ala Arg Lys Arg Thr Ile His Pro Phe Asn
 1 5 10 15
 Gly Thr Lys Gln Glu Gln Phe Met Asn Lys Asn Ile Arg Gln Lys Leu
 20 25 30
 Ile Ile Ser Ala Ala Leu Met Ile Ala Ala Thr Ala Ser Ala Phe Ala
 35 40 45
 Gln Gly Asn Gly Leu Ala Gly Ile Asn Glu Ala Thr Ser Met Val Ser
 50 55 60
 Ser Tyr Phe Asp Pro Gly Thr Lys Leu Ile Tyr Ala Ile Gly Ala Val
 65 70 75 80
 Val Gly Leu Ile Gly Gly Val Lys Val Tyr Gly Lys Phe Ser Ser Gly
 85 90 95
 Asp Pro Asp Thr Ser Lys Thr Ala Ala Ser Trp Phe Gly Ala Cys Ile
 100 105 110
 Phe Leu Ile Val Ala Ala Thr Ile Leu Arg Ser Phe Phe Leu
 115 120 125

<210> 6992

<211> 82

<212> PRT

<213> B.fragilis

<400> 6992

Lys Leu Lys Val Met Ser Glu Ile Ala Ser Arg Val Lys Ala Ile Ile
 1 5 10 15
 Val Asp Lys Leu Gly Val Glu Glu Ser Glu Val Thr Glu Thr Ala Ser
 20 25 30
 Phe Thr Asn Asp Leu Gly Ala Asp Ser Leu Asp Thr Val Glu Leu Ile
 35 40 45
 Met Glu Phe Glu Lys Glu Phe Gly Ile Ser Ile Pro Asp Asp Gln Ala
 50 55 60
 Glu Lys Ile Gly Thr Val Gln Asp Ala Val Ala Tyr Ile Glu Glu His
 65 70 75 80
 Ala Lys

<210> 6993

<211> 351

<212> PRT

<213> B.fragilis

<400> 6993

Leu Phe Ser Phe Lys Tyr Val Ile Phe Asn Lys Lys Arg Ala Ala Met
 1 5 10 15
 Lys Ile Gly Ile Leu Thr Ser Gly Gly Asp Cys Pro Gly Ile Asn Ala
 20 25 30
 Thr Ile Arg Gly Val Cys Lys Thr Ala Ile Asn His Tyr Gly Met Glu
 35 40 45
 Val Val Gly Ile His Ser Gly Phe Gln Gly Leu Leu Thr Lys Glu Val
 50 55 60
 Glu Ser Phe Thr Glu Lys Ser Leu Ser Gly Leu Leu Asn Leu Gly Gly
 65 70 75 80
 Thr Met Leu Gly Thr Ser Arg Glu Lys Pro Phe Arg Lys Gln Gly Ile
 85 90 95
 Ile Ser Asp Val Asp Lys Pro Ala Leu Ile Gln Arg Asn Ile Ala Glu
 100 105 110
 Leu Gly Leu Asp Cys Val Val Cys Ile Gly Gly Asn Gly Thr Gln Lys
 115 120 125
 Thr Ala Ala Lys Phe Ala Ala Met Gly Ile Asn Ile Val Ser Val Pro
 130 135 140
 Lys Thr Ile Asp Asn Asp Ile Trp Gly Thr Asp Ile Ser Phe Gly Phe
 145 150 155 160
 Asp Ser Ala Val Ser Ile Ala Thr Asp Ala Ile Asp Arg Leu His Ser
 165 170 175
 Thr Ala Ser Ser His Lys Arg Val Met Val Ile Glu Val Met Gly His
 180 185 190
 Lys Ala Gly Trp Ile Ala Leu Tyr Ser Gly Met Ala Gly Gly Gly Asp
 195 200 205
 Val Ile Leu Val Pro Glu Ile Pro Tyr Asn Ile Lys Asn Ile Gly Asp
 210 215 220
 Thr Ile Leu Asn Arg Leu Lys Lys Gly Lys Pro Tyr Ser Ile Val Val
 225 230 235 240
 Val Ala Glu Gly Ile Gln Thr Asp Gly Arg Lys Arg Ala Ala Glu Tyr
 245 250 255
 Ile Ala Gln Glu Ile Glu Tyr Glu Thr Gly Ile Glu Thr Arg Glu Thr
 260 265 270
 Val Leu Gly Tyr Ile Gln Arg Gly Gly Ser Pro Thr Pro Phe Asp Arg
 275 280 285
 Asn Leu Ser Thr Arg Met Gly Gly His Ala Thr Glu Leu Ile Ala Asn

290		295		300
Gly Gln Phe Gly Arg Met Ile Ala Leu Lys Gly Asp Glu Ile Ser Ser				
305		310		315
Val Ala Leu Glu Glu Val Ala Gly Lys Leu Lys Leu Val Thr Glu Glu				
		325		330
				335
His Asp Leu Val Val Gln Gly Arg Arg Met Gly Ile Cys Phe Gly				
		340		345
				350

<210> 6994

<211> 391

<212> PRT

<213> B.fragilis

<400> 6994

Tyr Ser Leu Phe Tyr Leu Ile Leu Val Met Val Lys Lys Ile Leu Val				
1		5		10
				15
Asp Lys Tyr Asp Leu Phe Val Leu Ser Ser Leu Ile His Tyr Leu Ile				
		20		25
				30
Asn Leu Leu Tyr Met Cys Glu Ile Arg Phe Leu Leu Phe Ile Leu Phe				
		35		40
				45
Met Gly Cys Leu Cys Ala Cys Gly Arg Val Asp Leu Lys Ser Pro Lys				
		50		55
				60
Thr Leu Phe Ser Ser Val Ser Glu Ile Ser Glu Val Glu Trp Ser Ile				
		65		70
				75
Glu Ala Asp Ser Leu Ala Arg Val Glu Gly Ile Gln Cys Asn Asp Ser				
		85		90
				95
Val Leu Leu Val Phe Asp Phe Tyr Ser Gly Lys Ser Tyr Ser Leu Phe				
		100		105
				110
Asp Ile Tyr Ser Gly Lys Met Ile Ser Arg Leu Gly Ser Ile Gly Gln				
		115		120
				125
Gly Arg Asp Glu Ile Pro Leu Gly Val Phe Gly Tyr Ile Glu Asn Asn				
		130		135
				140
Arg Phe Tyr Ile Tyr Tyr Asp Gln Thr Gly Tyr Ile Gly Lys Phe Asn				
		145		150
				155
Leu Asp Ser Cys Ser Val Ile Leu Asp Cys Pro Pro Val Cys Leu Ala				
		165		170
				175
Lys Tyr Lys Ile Pro Gly Ala Gln Ile Ser Lys Ile Ala Val Val Asn				
		180		185
				190
Asp Ser Leu Phe Leu Gly Ala Gly Thr Tyr Asn Ala Glu Tyr Gln Tyr				
		195		200
				205
Leu Leu Phe Asp Asn Lys Ser Asn Val Ile Asp Ser Ala Val Thr Ile				
		210		215
				220
Tyr Asn Ser Asn Glu Ala Asn Leu Asn Ile Tyr His Lys Phe Leu Ser				
		225		230
				235
Asn Gln Gly Arg Leu Arg Lys Arg Pro Gly Lys Ser Gln Phe Val Tyr				
		245		250
				255
Ser Ile Asn Asn Ser Ser Asn Ile Asp Phe Phe Glu Ile Lys Asn Asn				
		260		265
				270
Lys Ile Asn Leu Ile Lys Ser Leu Arg Phe Asn Asn Pro Glu Tyr Thr				
		275		280
				285
Pro Thr Gln Asp Gly Asp Tyr Ser Arg Val Leu Phe Ser Asp Asn Asn				
		290		295
				300
Val Ile Gly Tyr Ile Asp Ile Gly Val Thr Asp Lys Tyr Val Tyr Thr				
		305		310
				315
Leu Tyr Thr Asn Lys Lys Ile Cys Asp Asn Asn Thr Tyr Asn Asp Leu				
		325		330
				335
Ser Ser Thr Thr Val Leu Val Phe Asp Trp Asn Gly Asn Pro Val Lys				
		340		345
				350
Gln Tyr Glu Leu Ser Lys Glu Ala Tyr Tyr Ile Thr Ile Asp Lys Thr				

355	360	365
Leu Gln Arg Met Tyr Ala Val Val Arg Lys Pro Asp Met Gly Trp Thr		
370	375	380
Ile Val Cys Tyr Ala Ile Asp		
385	390	

<210> 6995
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 6995

Met Gln Ser Phe Ala His Phe Ser Leu Phe Cys Ala Leu Lys Gly Leu		
1	5	10 15
Ile Met Gly Lys Asn Ile Ala Ile Phe Ala Ser Gly Ser Gly Thr Asn		
20	25	30
Ala Glu Asn Ile Ile Arg Tyr Phe Glu Lys Asn Ala Ser Val Arg Val		
35	40	45
Arg Leu Val Leu Ser Asn Arg Lys Asp Ala Tyr Val Leu Glu Arg Ala		
50	55	60
Cys Arg Leu Gly Val Pro Tyr Arg Ala Phe Pro Lys Ser Asp Trp Glu		
65	70	75 80
Ala Ala Glu Ser Ile Leu Asp Leu Leu Arg Lys Tyr Gln Ile Asp Phe		
85	90	95
Ile Val Leu Ala Gly Phe Leu Leu Arg Ile Pro Asp Ala Leu Leu His		
100	105	110
Ala Tyr Pro Asp Lys Ile Ile Asn Ile His Pro Ala Leu Leu Pro Lys		
115	120	125
Phe Gly Gly Lys Gly Met Tyr Gly Asp Arg Val His Glu Ala Val Val		
130	135	140
Met Ala Gly Glu Ser Glu Ser Gly Ile Thr Ile His Tyr Ile Asp Glu		
145	150	155 160
His Tyr Asp Glu Gly Ser Thr Val Phe Gln Ala Lys Cys Pro Val Leu		
165	170	175
Pro Gly Asp Thr Pro Ala Asp Val Ala Lys Lys Val His Ala Leu Glu		
180	185	190
Tyr Glu Trp Phe Pro Lys Ile Ile Glu Arg Val Val Asn Ser Leu		
195	200	205

<210> 6996
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 6996

Pro Val Leu Ser Phe Gln Phe Ala Cys Tyr Leu Leu Ala Pro Val Lys		
1	5	10 15
Ile Val Pro Gly Val Tyr Ala Pro Ala Ile Leu Val His Pro Asp Arg		
20	25	30
His Asn Met Gln Met Val Ala Val Asp Val Leu Val Leu Glu Asn Glu		
35	40	45
Ile Arg Leu Val Ala Glu Ala His Leu Leu Gln Ile Leu Pro Cys Asp		
50	55	60
Ile Leu Lys Leu Arg Val Arg Gln Asn Ile Val Gly Met Arg Ile Glu		
65	70	75 80

<210> 6997
 <211> 111
 <212> PRT

<213> B.fragilis

<400> 6997

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Ser Tyr Tyr Ser Pro Thr Glu Ser Lys Val Met Met Asn Glu Asn Asn
1          5          10          15
Asp Val Phe Thr Leu Glu Asn Glu Pro Leu Ala Thr Val Val Gln Asn
20          25          30
Met Arg Lys Gly Ser Lys Trp Leu Ser Thr Phe Leu Glu Ser Tyr Arg
35          40          45
Pro Pro Leu Asp Gly Glu Arg Tyr Leu Thr Asp Arg Glu Val Ala Glu
50          55          60
Leu Leu Arg Val Ser Arg Arg Thr Leu Gln Glu Tyr Arg Asn Asn Arg
65          70          75          80
Val Leu Pro Phe Ile Leu Leu Gly Gly Lys Val Leu Tyr Pro Glu Ser
85          90          95
Gly Leu Arg Glu Leu Leu Glu Ala Asn Tyr Arg Lys Pro Leu Glu
100          105          110

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<210> 6998

<211> 68

<212> PRT

<213> B.fragilis

<400> 6998

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Ile Asp Thr Thr Ala Val Ala Ser Thr Pro Arg Gly Glu His Gly Phe
1          5          10          15
Cys Gly Gly Phe Thr Thr Phe Ser Thr Leu Ala Asn Asp Ser Leu Ser
20          25          30
Leu Leu Lys Gly Gly Phe Tyr Gly Ile Phe Thr Phe Tyr Val Phe Ile
35          40          45
Ser Ile Leu Leu Gly Leu Leu Ala Val Leu Ala Gly Gly Tyr Leu Gly
50          55          60
Glu Gln Phe Lys
65

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<210> 6999

<211> 217

<212> PRT

<213> B.fragilis

<400> 6999

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His Pro Gly Ile Gly Ser Gly Lys Ile Gly Phe Leu Val Glu Gly Asn
1          5          10          15
Cys His Glu Lys Lys Lys Leu Ala Asn Ile Leu Asn Pro Gly Gln Pro
20          25          30
Asn Arg Leu Val Leu Gln Tyr Ile Phe Cys Leu Lys Asp Met Lys Pro
35          40          45
Glu Glu Ile Asn Gly His Gln Val Gly Thr His Ser Ile Leu Val Arg
50          55          60
Lys Trp Glu Ala Ser Ala Trp Ser Cys His Pro Glu Thr Lys Thr Gln
65          70          75          80
Gln Cys Asp Leu Asp Leu Trp Glu Gly Glu Asn Thr Tyr Arg Cys Ile
85          90          95
Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr
100          105          110
Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly
115          120          125
Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val
130          135          140

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<400> 7000

Leu	Met	Lys	Pro	Gly	Arg	Pro	Leu	Ser	Glu	Pro	Ile	Leu	Arg	Arg	Lys
1				5					10					15	
Lys	Pro	Gly	Asn	Gly	Thr	Ile	Thr	Asp	Ile	Asn	Gly	Asn	Phe	Ser	Leu
			20					25					30		
Ser	Val	Gly	Thr	Lys	Ser	Thr	Ile	Ile	Ile	Ser	Tyr	Ile	Gly	Tyr	Ile
		35				40						45			
Thr	Lys	Glu	Val	Pro	Val	Gly	Asn	Asn	Thr	Ser	Leu	Thr	Val	Gln	Leu
	50					55					60				
Ala	Glu	Asn	Thr	Lys	Gln	Leu	Asp	Glu	Val	Val	Val	Thr	Ala	Leu	Gly
65					70					75					80
Ile	Lys	Arg	Glu	Glu	Lys	Ala	Leu	Gly	Tyr	Ala	Val	Gln	Lys	Val	Asp
				85					90					95	
Gly	Asp	Lys	Leu	Ala	Ala	Val	Lys	Thr	Val	Asn	Val	Ala	Thr	Ser	Leu
			100					105					110		
Thr	Gly	Lys	Ile	Ala	Gly	Leu	Asn	Val	Lys	Asn	Ser	Thr	Glu	Phe	Asn
		115				120						125			
Thr	Ser	Pro	Ser	Leu	Ser	Leu	Arg	Ala	Ser	Ala	Pro	Leu	Leu	Val	Ile
	130					135					140				
Asp	Gly	Val	Pro	Tyr	Gly	Asn	Val	Gly	Leu	Asn	Asp	Ile	Ala	Ala	Asp
145					150					155					160
Asp	Ile	Glu	Ser	Val	Asp	Val	Leu	Lys	Gly	Ala	Thr	Ala	Ser	Ala	Leu
				165					170					175	
Tyr	Gly	Ala	Arg	Gly	Gly	Ala	Gly	Ala	Val	Met	Ile	Thr	Thr	Lys	Lys
			180					185					190		
Gly	Lys	Glu	Glu	Gly	Leu	Asn	Val	Thr	Val	Asn	Ser	Ser	Thr	Met	Phe
			195				200					205			
Ala	Ala	Gly	Tyr	Leu	Arg	Lys	Pro	Glu	Val	Gln	Thr	Ser	Tyr	Ser	Ser
	210					215					220				
Gly	Ser	Gln	Gly	Thr	Tyr	Ser	Thr	Gly	Gly	Tyr	Val	Trp	Gly	Asp	Lys
225					230					235					240
Leu	Asp	Ile	Gly	Arg	Thr	Ala	Leu	Gln	Tyr	Asp	Pro	Tyr	Thr	His	Glu
				245					250					255	
Trp	Val	Asp	Met	Pro	Leu	Val	Ser	Lys	Gly	Lys	Asn	Asn	Leu	Lys	Asn
			260					265					270		
Phe	Gln	Glu	Leu	Ser	Met	Val	Thr	Asn	Asn	Asn	Val	Ser	Val	Ser	Gln
			275				280					285			
Lys	Gly	Lys	Tyr	Gly	Ser	Val	Arg	Thr	Ser	Leu	Thr	His	Val	Tyr	Asn
	290					295					300				
Lys	Gly	Gln	Tyr	Pro	Asn	Gln	Lys	Leu	Asn	Lys	Ile	Thr	Tyr	Ser	Val
305					310					315					320
Ser	Gly	Asp	Met	Lys	Trp	Lys	Lys	Phe	Ser	Phe	Asp	Gly	Gly	Leu	Thr
				325					330					335	

Tyr Asn Lys Arg Phe Tyr Pro Asn Asp Met Gly Ala Gly Tyr Gly Gly
 340 345 350
 Ser Gly Phe Leu Tyr Asn Leu Leu Val Trp Ser Gly Ala Glu Tyr Asp
 355 360 365
 Ile Arg Asp Tyr Lys Asn Tyr Trp Ile Lys Gln Asp Glu Gln Gln Asn
 370 375 380
 Trp Met Asn Asp Val Trp Tyr Asp Asn Pro Tyr Tyr Leu Ala His Glu
 385 390 395 400
 Met Thr Ser Ser Asn Asp Tyr Asp Lys Val Asn Thr Tyr Leu Ser Gly
 405 410 415
 Lys Tyr Asp Ile Met Pro Trp Leu Asn Phe Ser Met Arg Ala Gly Ala
 420 425 430
 Asp Ala Tyr Ala Ser Arg Thr Glu Lys Lys Asn Ala Met Ser Ala Arg
 435 440 445
 Gly Gly Trp Asp Lys Asn Gly Tyr Phe Tyr Thr Ser Lys Ser Thr Gly
 450 455 460
 Phe Ser Phe Asn Gly Asp Ala Leu Leu Ser Ala Asn His Ser Phe Gly
 465 470 475 480
 Asp Phe Ala Ile Asp Gly Phe Val Gly Gly Thr Ile Tyr Tyr Tyr Tyr
 485 490 495
 Asp Asp Ala Ile Ser Ser Asn Thr Arg Asn Gly Leu Ser Ile Pro Gly
 500 505 510
 Tyr Tyr Ser Leu Lys Ala Ser Val Asp Pro Ile Ala Ser Ser Ser
 515 520 525
 Tyr Lys Gln Lys Gln Val Asn Ser Ile Tyr Gly Lys Phe Ser Ala Ser
 530 535 540
 Trp Lys Ser Thr Val Phe Val Asp Val Thr Ala Arg Asn Asp Trp Ser
 545 550 555 560
 Ser Thr Leu Pro Ser Glu Thr Arg Ser Tyr Phe Tyr Pro Ala Val Ser
 565 570 575
 Gly Ser Ile Ile Met Ser Gln Leu Leu Lys Met Pro Glu Ser Ser Pro
 580 585 590
 Arg Gly Trp Lys Asp Arg Arg
 595

<210> 7001
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 7001
 Asn His Phe Tyr Tyr Tyr Tyr Asp Ser Thr Leu Ser Leu Lys Gln Lys
 1 5 10 15
 Asn Ile Gln Glu Asp Ile Gly Val Ser Thr Cys Met Lys Val His Arg
 20 25 30
 Gln Phe Val Trp Arg Gln Thr Val Arg Gln Ile Glu Phe Phe Lys Ser
 35 40 45
 Lys Ser Leu Gln Ile Tyr Asp Asn Leu Leu Lys Leu Pro Ile Phe Arg
 50 55 60
 Glu Ala Glu Tyr Ile Phe Ala Leu Glu Lys Asn Thr Phe Val Tyr Glu
 65 70 75 80
 Thr Ile Ser Asn Asn Val Val Cys Leu Cys Gln His Gly Ile Cys Gly
 85 90 95

<210> 7002
 <211> 137
 <212> PRT
 <213> B.fragilis

<400> 7002

Asn	Phe	Leu	Asn	Gln	Asn	His	Tyr	Lys	Ser	Met	Thr	Ile	Tyr	Leu	Asn
1			5						10					15	
Phe	Gln	Phe	Phe	Gly	Arg	Gln	Asn	Thr	Phe	Ser	Leu	Leu	Lys	Lys	Ile
		20						25					30		
Pro	Leu	Cys	Met	Lys	Leu	Ser	Ala	Ile	Met	Leu	Phe	Val	Phe	Ala	Ser
		35					40					45			
Met	Ala	Phe	Ala	Ala	Lys	Gly	Tyr	Ser	Gln	Ser	Val	Arg	Val	Thr	Leu
	50					55					60				
Asn	Val	Asn	Asn	Ser	Ser	Leu	Gln	Lys	Val	Leu	Asp	Glu	Ile	Glu	Lys
65					70					75					80
Gln	Ser	Glu	Phe	His	Phe	Phe	Tyr	Asn	Asn	Lys	Gln	Val	Asp	Ile	Ser
				85					90					95	
Arg	Asn	Val	Thr	Ile	Lys	Ser	Asn	Gln	Lys	Glu	Ile	Ser	Gln	Val	Leu
			100					105					110		
Asn	Gln	Leu	Phe	Ala	Gly	Thr	Asn	Ile	Gly	Tyr	Lys	Ile	Leu	Glu	Asn
		115					120					125			
Ser	Ile	Ile	Leu	Cys	Pro	Lys	His	Ile							
		130					135								

<210> 7003

<211> 406

<212> PRT

<213> B.fragilis

<400> 7003

Glu	Thr	Met	Leu	Arg	Met	Arg	Leu	Arg	Phe	Pro	Ala	Glu	Pro	Gly	Arg
1			5						10					15	
Thr	Glu	Phe	His	Arg	Leu	Leu	Cys	Ala	Arg	Cys	Arg	Tyr	Thr	Cys	Arg
		20						25					30		
Pro	Ser	Phe	Trp	Ala	Lys	Ile	Ile	Leu	Phe	Ser	Lys	Lys	Ile	Arg	Phe
		35					40					45			
Leu	Val	Arg	Arg	Phe	Leu	Phe	Trp	Phe	Val	Leu	Ser	Ile	Lys	Ala	Arg
	50					55					60				
Ile	Met	Asp	Glu	Ser	Cys	Tyr	Ile	Asn	Glu	Ser	Val	Leu	Leu	Asn	Tyr
65					70					75					80
Phe	Ala	Gly	Glu	Leu	Pro	Ala	Asp	Arg	Arg	Lys	Glu	Val	Glu	Glu	Trp
				85					90					95	
Ile	Ala	Ala	Ser	Glu	Asp	Asn	Glu	Lys	Met	Ala	Arg	Asp	Ile	Phe	Arg
		100					105						110		
Leu	Tyr	Arg	Ala	Ala	Asp	Thr	Leu	Asp	Tyr	Met	Asn	Arg	Val	Asp	Ala
		115					120					125			
Ser	Ala	Ala	Leu	Gln	Gln	Val	Lys	Gly	Arg	Ile	His	Lys	His	Arg	His
	130					135					140				
Arg	Ile	Ser	Trp	Met	Val	Trp	Gly	Gln	Arg	Ile	Ala	Ala	Cys	Met	Ala
145					150					155					160
Leu	Pro	Leu	Leu	Ala	Thr	Thr	Leu	Tyr	Leu	Ile	Leu	Lys	Asn	Pro	Pro
			165						170					175	
Gln	Glu	Tyr	Val	Glu	Ile	Arg	Thr	Asn	Pro	Gly	Met	Val	Ala	Glu	Ala
		180						185					190		
Asn	Leu	Pro	Asp	Gly	Thr	Lys	Val	Trp	Leu	Asn	Ser	Gly	Ser	Ser	Leu
		195					200					205			
Lys	His	Pro	Val	Lys	Phe	Thr	Gly	Asp	Thr	Arg	Thr	Val	Glu	Leu	Asp
	210					215					220				
Gly	Glu	Ala	Tyr	Phe	Ser	Val	Arg	Lys	Asp	Arg	Ser	Lys	Arg	Phe	Val
225					230					235					240
Val	Asn	Thr	Pro	Phe	Asn	Ile	Gln	Thr	Glu	Val	Leu	Gly	Thr	Glu	Phe
				245					250					255	
Asn	Met	Glu	Ala	Tyr	Arg	Thr	Asp	Ser	Val	Val	Arg	Thr	Thr	Leu	Val

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<210> 7004
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<213> B.fragilis
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<400> 7005																	
Pro	Lys	Asn	Val	Phe	Phe	Leu	Lys	Ile	Ile	Leu	Phe	Leu	Pro	Lys	Thr		
1				5					10					15			
Lys	Val	Tyr	Met	Tyr	Asn	Asp	Thr	Ser	Arg	Thr	Val	Ser	Asp	Glu	Thr		
			20					25					30				
Leu	Phe	Phe	Gln	Val	Gln	Gln	Gly	Asn	Glu	Gly	Ala	Phe	Glu	Ala	Leu		
			35				40					45					
Phe	Leu	Arg	His	Tyr	Pro	Ala	Leu	Cys	Ala	Tyr	Ala	Arg	Leu	Phe	Val		
	50					55					60						
Glu	Pro	Asp	Asp	Gly	Gln	Glu	Ile	Val	Ser	Asp	Val	Met	Val	Trp	Leu		
65					70					75					80		
Trp	Glu	Asn	Lys	Glu	Met	Gln	Ala	Phe	Glu	Ser	Ser	Leu	Lys	Ser	Tyr		
				85					90					95			
Leu	Phe	Lys	Ala	Val	Lys	Asn	Arg	Cys	Leu	Thr	Leu	Ile	Asn	Arg	Asn		
			100					105						110			

Glu Val Lys Gln Arg Ile Glu Lys Met Ile Phe Asp Asn Leu Gln Ser
 115 120 125
 Gln Tyr Asp Asp Pro Asp Phe Tyr Ala Ile Gln Glu Leu Thr Glu Lys
 130 135 140
 Ile Glu Glu Ala Leu Ala Arg Leu Pro Glu Asn Val Arg Glu Ala Phe
 145 150 155 160
 Glu Leu Asn Arg Phe Gln Asn Leu Thr Tyr Asn Glu Ile Ala Glu Arg
 165 170 175
 Leu Gly Val Ser Pro Lys Thr Ile Asp Tyr Arg Ile Gln Gln Ala Leu
 180 185 190
 Lys Gln Leu Arg Ile Asp Leu Lys Glu Tyr Leu Pro Leu Leu Leu Pro
 195 200 205
 Phe Leu Leu His
 210

<210> 7006
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 7006
 Ser Phe Gln Pro Arg Gly Glu Asp His Tyr Trp Ile Ser Ser Asn Ala
 1 5 10 15
 Gly Leu Ile Thr Ile Asn Pro Ile Thr Lys Gln His Phe Arg Gln Phe
 20 25 30
 Thr Val Asn Asp Gly Leu Gln Gly Asn Gln Phe Thr Ala Gln Ser Ser
 35 40 45
 Leu Lys Thr Ala Ser Gly Lys Leu Tyr Phe Gly Gly Ile Ser Gly Phe
 50 55 60
 Asn Ser Val
 65

<210> 7007
 <211> 129
 <212> PRT
 <213> B.fragilis

<400> 7007
 Leu Phe Arg Leu Cys Cys Thr Phe Met Gln Met Lys Lys Ser Asn Ile
 1 5 10 15
 Tyr Ile Gly Glu Ile Ile Lys Asn Val Met Ser Glu Arg Gln Val Thr
 20 25 30
 Lys Ala Glu Leu Ala Arg Arg Leu Asp Val Lys Pro Gln Ser Val Asp
 35 40 45
 Tyr Leu Leu Thr Arg Lys Ser Ile Asp Thr Asp Thr Leu Tyr Asn Ile
 50 55 60
 Ser Ile Ala Leu Asp Tyr Asp Phe Ser Leu Leu Tyr Ser Ile Lys Arg
 65 70 75 80
 Glu Gln Arg Asn Ser Asp Asn Glu Gly Ile Arg Tyr Lys Leu Gly Asn
 85 90 95
 Ala Lys Ile Met Val Glu Ile Glu Leu Gln Gln Asp Glu Ile Ile Lys
 100 105 110
 Leu Asn Leu Lys Lys Lys Ile Ala Glu Leu Leu Asp Gly Gly Ala Asn
 115 120 125
 Lys

<210> 7008
 <211> 77

<212> PRT

<213> B.fragilis

<400> 7008

His	Arg	Lys	Thr	Ser	Pro	Ile	Leu	Pro	Thr	Lys	Ala	Arg	Pro	Tyr	Asp
1				5					10					15	
Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile	Asn	Ala	Leu	Val
			20					25					30		
Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp	Val	Asp	Phe	Asp
		35					40					45			
His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Gly	Lys	Thr	Asp	Leu	Gln
	50					55				60					
Lys	Val	Pro	Arg	Leu	Gln	Ala	Trp	Arg	Ile	Cys	Tyr	Arg			
65					70					75					

<210> 7009

<211> 115

<212> PRT

<213> B.fragilis

<400> 7009

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5					10					15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55				60					
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75				80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85				90					95		
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100					105					110		
Lys	Thr	Leu													
			115												

<210> 7010

<211> 83

<212> PRT

<213> B.fragilis

<400> 7010

Val	Pro	Glu	Gln	Gln	Lys	Val	Ala	Gln	Asp	Phe	Ala	Met	Ser	Glu	Phe
1				5					10					15	
Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Met
			20					25					30		
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu
		35					40					45			
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu
	50					55					60				
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser
65					70					75				80	
Ser	Ala	Arg													

<210> 7011

<211> 725

<212> PRT

<213> B.fragilis

<400> 7011

Phe	Leu	Leu	Asn	His	Ile	Met	Lys	Asn	Met	Lys	Lys	Leu	Thr	Phe	Lys
1				5					10					15	
Leu	Ala	Cys	Phe	Phe	Leu	Ser	Leu	Leu	Val	Ser	Ser	Val	Ala	Met	Ala
		20						25					30		
Glu	Ser	Ile	Thr	Ser	Pro	Asn	Gly	Leu	Leu	Lys	Leu	Asn	Val	Ser	Val
		35					40					45			
Asn	Glu	Lys	Gly	Glu	Pro	Val	Tyr	Glu	Leu	Ser	Tyr	Lys	Gly	Lys	Glu
		50				55					60				
Val	Ile	Lys	Pro	Ser	Lys	Leu	Gly	Leu	Glu	Leu	Lys	Asp	Asp	Pro	Gly
65					70				75					80	
Leu	Met	Asp	Gly	Phe	Thr	Leu	Ser	Asp	Ala	Lys	Thr	Ser	Ser	Phe	Asp
				85					90					95	
Glu	Thr	Trp	Glu	Pro	Val	Trp	Gly	Glu	Val	Lys	Gln	Ile	Arg	Asn	Asn
			100					105					110		
Tyr	Asn	Glu	Leu	Ala	Ile	Thr	Leu	Asp	Gln	Lys	Ala	Gln	Asp	Arg	Lys
		115					120					125			
Met	Val	Ile	Arg	Phe	Arg	Leu	Tyr	Asn	Asp	Gly	Leu	Gly	Phe	Arg	Tyr
	130					135					140				
Glu	Phe	Pro	Gln	Gln	Lys	Asn	Leu	Asn	Tyr	Phe	Val	Ile	Lys	Glu	Glu
145				150						155				160	
His	Ser	Gln	Phe	Ala	Met	Ala	Gly	Asp	His	Thr	Ala	Phe	Trp	Ile	Pro
			165						170					175	
Gly	Asp	Tyr	Asp	Thr	Gln	Glu	Tyr	Asp	Tyr	Thr	Arg	Ser	Lys	Leu	Ser
		180						185					190		
Glu	Ile	Arg	Gly	Leu	Met	Lys	Thr	Ala	Val	Thr	Pro	Asn	Ala	Ser	Gln
		195					200					205			
Thr	Pro	Phe	Ser	Pro	Thr	Gly	Val	Gln	Thr	Ala	Leu	Gln	Met	Lys	Thr
	210					215					220				
Asp	Asp	Gly	Leu	Tyr	Ile	Asn	Leu	His	Glu	Ala	Ala	Leu	Val	Asp	Tyr
225					230					235				240	
Ser	Cys	Met	His	Leu	Asn	Leu	Asp	Asp	Lys	Asn	Phe	Val	Phe	Glu	Ser
			245						250					255	
Trp	Leu	Thr	Pro	Asp	Ala	Gln	Gly	Thr	Lys	Gly	Tyr	Met	Gln	Thr	Pro
		260					265						270		
Cys	His	Ser	Pro	Trp	Arg	Thr	Val	Met	Val	Ser	Asp	Asp	Ala	Arg	Asp
		275					280					285			
Ile	Leu	Ala	Ser	Lys	Leu	Thr	Leu	Asn	Leu	Asn	Glu	Pro	Cys	Lys	Leu
	290					295					300				
Glu	Asp	Thr	Ser	Trp	Ile	Lys	Pro	Val	Lys	Tyr	Val	Gly	Val	Trp	Trp
305					310					315				320	
Glu	Met	Ile	Thr	Gly	Lys	Ser	Thr	Trp	Ala	Tyr	Thr	Asp	Asp	Val	Tyr
			325						330					335	
Ser	Val	Lys	Leu	Gly	Glu	Thr	Asp	Tyr	Thr	Lys	Thr	Lys	Pro	Asn	Gly
		340					345					350			
Arg	His	Gly	Ala	Asn	Asn	Glu	Asn	Val	Lys	Arg	Tyr	Ile	Asp	Phe	Ala
		355					360					365			
Ala	Glu	His	Gly	Phe	Asp	Gln	Val	Leu	Val	Glu	Gly	Trp	Asn	Glu	Gly
	370					375					380				
Trp	Glu	Asp	Trp	Phe	Gly	Lys	Ser	Lys	Asp	Tyr	Val	Phe	Asp	Phe	Val
385					390					395				400	
Thr	Pro	Tyr	Pro	Asp	Phe	Asp	Val	Lys	Met	Leu	Asn	Glu	Tyr	Ala	Arg
			405						410				415		
Ser	Lys	Gly	Val	Lys	Leu	Met	Met	His	His	Glu	Thr	Ser	Ala	Ser	Val
		420						425					430		
Arg	Asn	Tyr	Glu	Arg	His	Met	Asp	Glu	Ala	Tyr	Gln	Phe	Met	Glu	Asp

435	440	445
Asn Gly Tyr Asn Ala Val Lys Ser Gly Tyr Val Gly Asn Ile Ile Pro		
450	455	460
Arg Gly Glu His His Tyr Gly Gln Trp Leu Asn Asn His Tyr Leu Tyr		
465	470	475
Ala Val Lys Lys Ala Ala Asp His Lys Ile Met Val Asn Ala His Glu		
485	490	495
Ala Val Arg Pro Thr Gly Leu Cys Arg Thr Tyr Pro Asn Leu Ile Gly		
500	505	510
Asn Glu Ser Ala Arg Gly Thr Glu Tyr Glu Ala Phe Gly Gly Asn Lys		
515	520	525
Pro Phe His Thr Thr Leu Leu Pro Phe Thr Arg Leu Ile Gly Gly Pro		
530	535	540
Met Asp Tyr Thr Pro Gly Ile Phe Asp Thr Gln Leu Ser Phe Leu Ser		
545	550	555
Gly Glu His Ser Phe Val His Thr Thr Leu Ala Lys Gln Leu Ala Leu		
565	570	575
Tyr Val Thr Leu Tyr Ser Pro Leu Gln Met Ala Ala Asp Leu Pro Glu		
580	585	590
Ser Tyr Glu Arg Tyr Met Asp Ala Phe Gln Phe Ile Lys Asp Val Ala		
595	600	605
Val Asp Trp Asp Glu Ser Lys Tyr Ile Glu Ala Glu Pro Gly Glu Tyr		
610	615	620
Ile Thr Val Ala Arg Lys Ala Lys Asn Thr Asn Asn Trp Phe Val Gly		
625	630	635
Gly Ile Thr Gly Glu Asn Ala Arg Thr Ser Thr Phe Val Leu Asp Phe		
645	650	655
Leu Glu Pro Gly Lys Gln Tyr Val Ala Thr Leu Tyr Ala Asp Gly Lys		
660	665	670
Asp Ala Asp Tyr Glu Lys Asn Pro Thr Ser Tyr Gln Ile Lys Lys Gly		
675	680	685
Leu Val Thr Tyr Lys Thr Lys Ile Ser Thr Asp Leu Ala Arg Ser Gly		
690	695	700
Gly Phe Ala Ile Ser Leu Ile Glu Ala Thr Pro Ala Asp Lys Lys Ala		
705	710	715
Leu Lys Lys Trp Lys		
725		

<210> 7012

<211> 113

<212> PRT

<213> B.fragilis

<400> 7012

Arg Lys Leu Arg Asn Thr Met Leu Thr Leu Thr Ile Ser Ser Leu Lys	
1	5
Arg Arg Ser Met Met Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr	
20	25
Arg Pro Gly Val Tyr Val Ile Gly Asp Lys Asn Val Tyr Ile Glu Asn	
35	40
Ser Glu Gly Asn Pro Ile Val Arg Phe His Ser Ala Asp Thr His Lys	
50	55
Lys Ile Phe Ala Leu Leu Glu Ser Gln Asn Asn Pro Val Lys Arg Phe	
65	70
Arg Gly Lys Arg Gly Phe Pro Leu Gln Arg Lys Ile Ser Val Lys Lys	
85	90
Arg Lys Leu Cys Lys Leu Phe Tyr Ile Pro Ala Asn Pro Arg His Leu	
100	105
Val	110

<210> 7013
 <211> 628
 <212> PRT
 <213> B.fragilis

<400> 7013

Ile	Thr	Pro	Ser	Phe	Tyr	Phe	Met	Ala	Ile	Thr	Ile	Ile	Ile	Leu	Val
1			5						10					15	
Leu	Ser	Ala	Val	Phe	Phe	Met	Ser	Gly	Lys	Val	Arg	Ser	Asp	Leu	Val
			20					25					30		
Ala	Leu	Cys	Ala	Leu	Val	Leu	Leu	Ile	Leu	Phe	Asn	Ile	Leu	Thr	Pro
		35					40					45			
Glu	Glu	Ala	Leu	Ser	Gly	Phe	Ser	Asn	Ser	Val	Val	Ile	Met	Met	Val
	50					55					60				
Gly	Leu	Phe	Val	Val	Gly	Gly	Ala	Ile	Phe	Gln	Thr	Gly	Leu	Ala	Lys
65					70					75				80	
Met	Ile	Ser	Ser	Arg	Ile	Leu	Lys	Phe	Ala	Gly	Thr	Ser	Glu	Leu	Lys
				85					90				95		
Leu	Phe	Ile	Leu	Ile	Ile	Leu	Val	Thr	Ala	Ala	Ile	Gly	Ala	Phe	Val
			100					105					110		
Ser	Asn	Thr	Gly	Thr	Val	Ala	Leu	Met	Leu	Pro	Ile	Val	Val	Ser	Met
		115					120					125			
Ala	Met	Ser	Ala	Asn	Ile	Asn	Val	Ser	Arg	Leu	Leu	Met	Pro	Leu	Ala
		130					135					140			
Phe	Ala	Ser	Ser	Met	Gly	Gly	Met	Met	Thr	Leu	Ile	Gly	Thr	Pro	Pro
145					150						155				160
Asn	Leu	Val	Ile	Gln	Asn	Ala	Leu	Ile	Glu	Ala	Gly	Tyr	Glu	Arg	Leu
				165						170				175	
Ser	Phe	Phe	Thr	Phe	Thr	Pro	Val	Gly	Leu	Val	Cys	Val	Thr	Val	Gly
			180					185					190		
Leu	Ile	Val	Leu	Ile	Pro	Leu	Ser	Lys	Ile	Phe	Leu	Thr	Lys	Lys	Ser
		195					200					205			
Asp	Lys	Glu	Ala	Arg	Gly	Lys	Arg	Lys	Asn	Lys	Ser	Leu	Gln	Glu	Leu
		210					215				220				
Ala	Gly	Glu	Tyr	Gln	Leu	Ser	Gln	Asn	Leu	Tyr	Arg	Val	Glu	Val	Glu
225					230					235					240
Glu	Ser	Ser	Gly	Phe	Val	Gly	Lys	Thr	Ile	Gln	Glu	Leu	Gly	Ile	Pro
				245						250				255	
Gln	Arg	Tyr	His	Val	Thr	Ile	Leu	Glu	Val	Arg	Arg	Arg	Ser	Val	Ser
			260					265					270		
Ser	Arg	His	Phe	Phe	Lys	Thr	Lys	Lys	Gln	Glu	Met	Ala	Glu	Ala	Gly
		275					280					285			
Thr	Leu	Ile	Glu	Ala	Glu	Asp	Ile	Leu	Tyr	Val	Leu	Gly	Glu	Phe	Glu
		290					295				300				
Asn	Val	Lys	Arg	Phe	Ala	Gly	Glu	Asn	Arg	Leu	Ser	Leu	Leu	Asp	Thr
305					310					315					320
His	Lys	Thr	Glu	Gly	Ser	Leu	His	Asp	Thr	Asp	Glu	Gly	Phe	Asp	Phe
				325					330					335	
Gln	Glu	Ile	Gly	Ile	Ala	Glu	Ile	Leu	Leu	Leu	Pro	Thr	Ala	Asn	Leu
				340				345					350		
Ile	Asn	Lys	Pro	Val	Lys	Ala	Ser	Gly	Phe	Arg	Glu	Asn	Tyr	Ser	Ile
		355					360					365			
Asn	Ile	Leu	Gly	Ile	Gln	Arg	Lys	Arg	Asp	Tyr	Leu	Leu	Lys	Asn	Leu
		370					375				380				
Lys	Asp	Glu	Lys	Met	His	Ser	Gly	Asp	Ile	Leu	Leu	Val	Gln	Gly	Ser
385					390					395					400
Trp	Ala	Asn	Ile	Ala	Arg	Leu	Gly	Glu	Asp	Gln	Ser	Gln	Trp	Val	Val

405 410 415
 Leu Gly Gln Pro Leu Ala Glu Ala Ala Lys Val Thr Leu Asn His Lys
 420 425 430
 Ala Pro Val Ala Ala Leu Ile Met Leu Gly Met Ile Val Thr Met Met
 435 440 445
 Phe Asp Phe Ile Pro Val Ala Pro Val Thr Ala Val Ile Ile Ala Ala
 450 455 460
 Leu Leu Met Val Leu Thr Gly Cys Phe Arg Asn Val Glu Glu Ala Tyr
 465 470 475 480
 Lys Thr Ile Asn Trp Glu Ser Ile Val Leu Ile Ala Gly Met Leu Pro
 485 490 495
 Met Ser Leu Ala Leu Glu Lys Thr Gly Ala Ser Glu Val Val Ser Gln
 500 505 510
 Ser Leu Val Asn Gly Leu Gly Ala Tyr Gly Pro Phe Ala Leu Leu Ala
 515 520 525
 Gly Ile Tyr Phe Thr Thr Ser Leu Met Thr Met Phe Ile Ser Asn Thr
 530 535 540
 Ala Thr Ala Val Leu Leu Ala Pro Ile Ala Leu His Ser Ala Val Gln
 545 550 555 560
 Leu Gly Leu Ser Pro Tyr Pro Phe Leu Phe Ala Val Thr Val Ala Ala
 565 570 575
 Ser Met Cys Phe Ala Ser Pro Phe Ser Thr Pro Pro Asn Ala Leu Val
 580 585 590
 Met Pro Ala Gly Arg Tyr Thr Phe Met Asp Tyr Val Lys Val Gly Leu
 595 600 605
 Pro Leu Gln Ile Ile Met Gly Val Val Met Val Phe Val Leu Pro Leu
 610 615 620
 Leu Phe Pro Phe
 625

<210> 7014

<211> 355

<212> PRT

<213> B.fragilis

<400> 7014

Gln Lys Gly Leu Lys Asn Ile Glu Thr Met Lys Lys Glu Asn Asp Glu
 1 5 10 15
 Ile Thr Asp Leu Phe Arg Ser Arg Leu Gly Asn Ala Glu Met Thr Val
 20 25 30
 Arg Asp Gly Phe Trp Glu Glu Leu Asn Ser Glu Met Met Val Arg Ser
 35 40 45
 His His Arg Lys Val Val Phe Phe Arg Val Ala Ala Ala Ser Val
 50 55 60
 Leu Leu Val Leu Ala Ala Ser Ser Ala Ala Phe Trp Phe Phe Ser Pro
 65 70 75 80
 Lys Ala Glu Ile Glu Glu Ala Phe Thr Gln Val Ala Val Val Ser Gly
 85 90 95
 Asn Thr Thr His Leu Asp Gly Asp Val Val Lys Gln Asp Phe Thr Pro
 100 105 110
 Met Arg Ser Glu Pro Val Leu Gly Lys Pro Ala Pro Lys Arg Ser Gly
 115 120 125
 Val Leu Ala Gln Ser Ser Gly Glu Glu Asp Asp Ser Val Ser Val Thr
 130 135 140
 Val Ser Met Ser Phe Ser Phe Ser Ser Thr Thr Arg Arg Arg Gln
 145 150 155 160
 Asn Asn His Pro Asp Lys Ser Tyr Trp Gln Ala Gly Gly Glu Gly Gly
 165 170 175
 Ala Leu Ala Ser Ser Ala Asp Gly Pro Arg Pro Asp Asp His Thr Val

180	185	190
Val Ala Asp Lys Ser Arg Thr Trp	Ala Val Lys Ala Ala Val Gly Thr	
195	200	205
Ala Leu Pro Ala Ala Asn Gly Lys Tyr Lys Met Pro Val Thr Ala Gly		
210	215	220
Leu Thr Val Glu Lys Lys Ile Asn Lys His Leu Ala Val Glu Thr Gly		
225	230	235
Leu Leu Tyr Ser Asn Leu Arg Ala Glu Gln Asn Leu His Tyr Leu Gly		
245	250	255
Ile Pro Val Lys Leu Asn Met Thr Leu Ala Glu Thr Pro Lys Phe Asp		
260	265	270
Leu Tyr Ala Ser Val Gly Gly Val Ala Asp Lys Cys Ile Ala Gly Ala		
275	280	285
Pro Asp Asn Ser Phe Lys Asn Glu Pro Val Gln Leu Ala Leu Thr Ala		
290	295	300
Gly Val Gly Met Asn Tyr Lys Asn Asn Asp Lys Leu Ala Leu Phe Ala		
305	310	315
Glu Pro Gly Val Thr His His Phe Lys Thr Asn Ser Lys Leu Glu Thr		
325	330	335
Val Arg Ser Ala Lys Pro Thr Asn Phe Asn Leu Asp Cys Gly Leu Arg		
340	345	350
Met Thr Tyr		
355		

<210> 7015
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 7015
Cys Arg Gln Ser Arg His Arg Ala Met Met Lys Arg His Asn Ile Leu
1 5 10 15
Thr Val Leu Ala Val Leu Leu Leu Thr Phe Ala Ala Cys Asp Lys Asn
20 25 30
Ser Ala Pro Gly Phe Ser Phe Thr Thr Asp Ser Ile Leu Thr Leu Thr
35 40 45
Phe Asp Lys Glu Leu Asp Ala Ala Phe Val Gly Val Gly Thr Gln Asn
50 55 60
Tyr Asn Pro Val Gly Met Arg Arg Ser Gly Asp Thr Leu Phe Ile Ala
65 70 75 80
Asn Arg Ala Glu Gly Ser Asp Gly Val Trp Val Val Arg Ala Ser Thr
85 90 95
Gly Glu Leu Leu Tyr Ser Leu Thr Gly Trp Thr Tyr Asn Gly Lys Asn
100 105 110
Glu Lys Phe Asp Asn Gln Val Met Asp Val Ala Val Ser Ser Asp Tyr
115 120 125
Ile Phe Val Val Asn Arg Ser Ser Arg Ile Asp Leu Phe Arg Arg Asn
130 135 140
Asp Tyr Ser Tyr Val Thr Thr Ile Gly Arg Thr Gly Trp Gln Ser Ser
145 150 155 160
Ser Leu Leu Gln Cys Glu Ala Ala Glu Val Ala Gly Asp Lys Leu Phe
165 170 175
Ile Arg Asp Lys Gln Lys Ile Lys Val Val Gln Ile Ser Asp Cys Thr
180 185 190
Pro Glu Asn Arg Phe Lys Val Pro Val Phe Ala Gln Asn Thr Asp Ser
195 200 205
Thr Ser Ser Asn Asn Gly Phe Asn Leu Glu Ser Val Ala Arg His Glu
210 215 220
Gly Leu Ile Tyr Val Ser Asp Tyr Glu Thr Ser Arg Ile Leu Val Ile

3501

225 230 235 240
 Asp Pro Ala Thr Val Ala Val Lys Gly Glu Pro Val Arg Phe Leu Arg
 245 250 255
 Ser Tyr Arg Met Pro Asn Lys Pro Leu Ser Met Gly Phe Phe Gln Asn
 260 265 270
 Glu Met Tyr Val Val Cys Ala Asn Asn Arg Ile Val Arg Val Asp Leu
 275 280 285
 Arg Thr Gly Lys Glu Leu Gly Ser Tyr Ser Ser Phe Ala Gly Gly Val
 290 295 300
 Gly Leu Gly Thr Pro Gly Arg Leu Phe Phe His Asn Asp Thr Phe Tyr
 305 310 315 320
 Leu Ala Gly Arg Asn Ala Asn Ala Pro Arg Leu Ile Gln Gly Lys Val
 325 330 335
 Met Phe Val Glu Ile Ser Glu Leu Asp
 340 345

<210> 7016

<211> 237

<212> PRT

<213> B.fragilis

<400> 7016

Ser Leu Met Ser Thr Asp His Ile Ser Thr His Pro Asp Ser Pro Leu
 1 5 10 15
 His Gly Asn Gly Ile Gly Ser Glu Ala Ile Asn Leu Ala Ala Ile Arg
 20 25 30
 Gln Glu Tyr Thr Lys Gly Gly Leu Lys Glu Gly Asp Leu Ser Asp Asn
 35 40 45
 Pro Leu Ser Leu Phe Asn Arg Trp Leu His Glu Ala Ile Asp Ala Gln
 50 55 60
 Val Asp Glu Pro Thr Ala Met Leu Val Gly Thr Val Ser Pro Glu Gly
 65 70 75 80
 Gln Pro Ser Thr Arg Thr Val Leu Leu Lys Asp Leu His Asp Gly Lys
 85 90 95
 Phe Ile Phe Tyr Thr Asn Tyr Glu Ser Arg Lys Gly Thr His Leu Ala
 100 105 110
 Lys Asn Pro Tyr Ile Ser Leu Ser Phe Val Trp His Ala Leu Glu Arg
 115 120 125
 Gln Val His Ile Glu Gly Ile Ala Ser Lys Val Pro Ala Gly Glu Ser
 130 135 140
 Asp Thr Tyr Phe Arg Gln Arg Pro Tyr Lys Ser Arg Ile Gly Ala Arg
 145 150 155 160
 Ile Ser Pro Gln Ser Arg Pro Leu Lys Ser Arg Met Gln Leu Ile Arg
 165 170 175
 Asn Phe Val Ala Glu Ala Ala Arg Trp Val Gly Arg Glu Val Glu Arg
 180 185 190
 Pro Ala His Trp Gly Gly Tyr Ala Val Thr Pro His Arg Ile Glu Phe
 195 200 205
 Trp Gln Gly Arg Ala Asn Arg Leu His Asp Arg Phe Leu Tyr Ser Leu
 210 215 220
 Gln Pro Asp Gly Ser Trp Gln Lys Glu Arg Leu Ala Pro
 225 230 235

<210> 7017

<211> 406

<212> PRT

<213> B.fragilis

<400> 7017

Ile Ile Arg Ser Leu Phe Leu Ile Tyr Cys Leu Ile Lys Phe Ile Phe
 1 5 10 15
 Val Phe Leu Ile Pro Gln Asp Met Lys Asn Thr Phe Ile Leu Phe Leu
 20 25 30
 Val Ala Leu Ser Phe Val Cys Asn Ser Cys Asn Arg Thr Pro Ser Val
 35 40 45
 Glu Glu Pro Asp Val Leu Lys Val Glu Leu Lys Glu Thr Pro Val Ser
 50 55 60
 Val Ser Asp Phe Phe Ser Lys Val Glu Val Ile Pro Leu Glu Thr Ser
 65 70 75 80
 Asp Ser Cys Leu Leu Ala Arg Ile Leu Arg Val Arg Val Ser Gly Asp
 85 90 95
 Thr Thr Tyr Ile Leu Thr Gln Asp Tyr Pro Thr Phe Arg His Ile Thr
 100 105 110
 Leu Met Ala Phe Asp Lys Lys Gly Asn Tyr Leu Arg Ser Ile Gly Arg
 115 120 125
 Val Gly Gln Gly Pro Gly Glu Tyr Ser Gln Val Tyr Asp Ala Val Ile
 130 135 140
 Ser Glu Gln Arg Asn Arg Val Tyr Met Leu Ser Pro Phe Gly Ser Met
 145 150 155 160
 Tyr Thr Tyr Arg Leu Asp Gly Ser Phe Ile Asp Arg Lys Ile Leu Pro
 165 170 175
 Gln Lys Met Asn Phe Gln Glu Ile Gly Leu Thr Pro Asp Gly Asp Leu
 180 185 190
 Leu Thr Trp Ser Ala Gln Asn Lys Asp Asp Gly Ala Cys Ile Met Arg
 195 200 205
 Leu Asp Ala Asp Ser Ala Lys Leu Ile Asn Glu Phe Trp Ser Asp Asp
 210 215 220
 Phe Trp Leu Asn Trp Ala Cys Arg Asp Met Phe Tyr Ser Tyr Gln Gly
 225 230 235 240
 Lys Ala Tyr Phe Ala Pro Ala Phe Tyr Glu Glu Val Tyr Glu Leu Thr
 245 250 255
 Ser Asp Ser Phe Arg Val Ala Tyr Arg Trp Asp Met Gly Glu Gln Asn
 260 265 270
 Ile Asn Ile Ala Gln Tyr His Phe Asn Ser Asn Pro Asp Thr Arg Arg
 275 280 285
 Glu Glu Asp Arg Arg Leu Asn Glu Tyr Arg Glu Thr Gly Lys Ile Ala
 290 295 300
 Phe Asn Phe Thr Asn Gln Tyr Gln Asn Gly Lys Tyr Tyr Tyr Ala Gln
 305 310 315 320
 Leu Leu Ser Leu Ala Ser Lys Pro Lys Trp Lys Tyr Thr Asn Leu Phe
 325 330 335
 Tyr Arg Lys Lys Asp Gly Ala Val Phe Tyr Phe Glu Lys Thr Arg Glu
 340 345 350
 Gly Ile Arg Ile Asp Pro Glu Val Leu Thr Glu Asp Phe Met Leu Cys
 355 360 365
 Ile Val Pro Thr Glu Glu Leu Glu Asn Tyr Lys Ser Ile Leu Pro Glu
 370 375 380
 Glu Glu Tyr Arg Val Leu Ser Lys Arg Val Glu Asp Asp Asn Pro Cys
 385 390 395 400
 Val Val Lys Phe Tyr Phe
 405

<210> 7018

<211> 215

<212> PRT

<213> B.fragilis

<400> 7018

Leu Lys Met Phe Lys Tyr Leu Lys Gly Phe Trp Arg Tyr Leu Leu Arg
 1 5 10 15
 Lys Arg Val Ser Ser Leu Ser Leu Ile Asp Asp Leu Ser Thr Ile His
 20 25 30
 Pro Thr Ala Arg Val Tyr Ser Gly Cys Arg Ile Ile Gln Ser Asp Ile
 35 40 45
 Gly Ala Tyr Ser Tyr Val Gly Tyr Gly Ser Ile Leu Val Asn Val Ala
 50 55 60
 Val Gly Lys Phe Cys Ser Ile Ala Gly Asp Val Glu Ile Gly Leu Ala
 65 70 75 80
 Thr His Arg Met Asp Ala Ile Ser Thr Ser Pro Leu Phe Tyr Ser Ser
 85 90 95
 Asn Asn Ala Leu Gly Ile Ser Trp Thr Ser Tyr Ser Tyr Phe Asp Asp
 100 105 110
 Ser His Lys Pro Val Ser Ile Gly His Asp Val Trp Ile Gly Thr Arg
 115 120 125
 Val Val Ile Met Gly Gly Val Lys Ile Gly Asp Gly Ala Val Ile Gly
 130 135 140
 Ala Cys Ala Val Val Thr Arg Asp Ile Pro Pro Tyr Ala Ile Cys Val
 145 150 155 160
 Gly Ile Pro Ala Lys Val Ile Arg Tyr Arg Phe Pro Arg Glu Thr Ile
 165 170 175
 Asp Val Leu Glu His Ala Glu Trp Trp Asn Trp Ser Glu Val Leu Leu
 180 185 190
 Lys Glu Asn Ile Glu Asn Phe Asn Gly Ser Asp Thr Leu Phe Phe Asn
 195 200 205
 Arg Ile Pro Leu Lys Gln Lys
 210 215

<210> 7019

<211> 245

<212> PRT

<213> B.fragilis

<400> 7019

Ile His Pro Pro Met Ile Leu Asp Tyr Ile Tyr His Ser Gly Phe Ala
 1 5 10 15
 Ile Glu Ala Glu Gly Val Thr Leu Ile Asp Tyr Tyr Lys Asp Ser
 20 25 30
 Ser Glu Thr Glu Leu Asn Lys Gly Ile Val His Asp Arg Leu Leu Gln
 35 40 45
 Arg Pro Gly Lys Leu Tyr Val Leu Ala Ser His Phe His Pro Asp His
 50 55 60
 Phe Asn Arg Glu Val Leu Thr Trp Lys Glu Gln Arg Pro Asp Ile Ile
 65 70 75 80
 Tyr Ile Phe Ser Lys Asp Ile Leu Lys His His Arg Ala Gln Lys Glu
 85 90 95
 Asp Ala Ile Tyr Ile Asn Lys Gly Glu Glu Tyr Glu Asp Asp Met Leu
 100 105 110
 Arg Ile Gln Ala Phe Gly Ser Thr Asp Val Gly Ile Ser Phe Leu Ile
 115 120 125
 His Leu Gln Gly Lys Ser Ile Phe His Ala Gly Asp Leu Asn Asn Trp
 130 135 140
 His Trp Ser Glu Glu Ser Thr Glu Gln Glu Ile Arg Lys Ala Glu Gly
 145 150 155 160
 Asp Phe Leu Ala Glu Ile Lys Tyr Leu Gln Ala Ala Val Pro Thr Ile
 165 170 175
 Asp Leu Val Met Phe Pro Val Asp Arg Arg Met Gly Lys Asp Tyr Met
 180 185 190

Lys Gly Ala Gln Gln Phe Ile Glu Arg Ile Lys Thr Thr Ile Phe Val
 195 200 205
 Pro Met His Phe Ser Glu Asp Tyr Glu Gly Gly Asn Ala Phe Arg Ser
 210 215 220
 Ile Ala Glu Ala Gly Gly Cys Arg Phe Ile Thr Ile Thr His Arg Gly
 225 230 235 240
 Glu Ser Phe Asp Ile
 245

<210> 7020

<211> 363

<212> PRT

<213> B.fragilis

<400> 7020

Ile Lys His Thr Ile Met Asn Lys Leu Thr Gln Ile Phe Leu Val Leu
 1 5 10 15
 Phe Met Ile Cys Leu Pro Val Thr Leu Trp Ala Asp Asn Asp Lys Asp
 20 25 30
 Asp Asp Asp Ser Arg Tyr Leu Ala Gly Ala Val Pro Glu Val Asp Gly
 35 40 45
 Arg Val Val Phe Ser Arg Glu Phe Ser Ile Pro Gly Met Ser Gln Asp
 50 55 60
 Glu Ile Tyr Glu Arg Met Leu Lys Trp Leu Asp Gly Arg Met Ala Gln
 65 70 75 80
 Asn Lys Asn Asn Ser Arg Val Val Tyr Lys Glu Lys Gly Val Ile Ala
 85 90 95
 Ala Ala Gly Glu Glu Trp Leu Val Phe Ser Ser Thr Ala Leu Ser Leu
 100 105 110
 Asp Arg Thr Trp Leu Thr Tyr Gln Val Thr Val Asn Cys Gln Pro Gln
 115 120 125
 Lys Cys Thr Met Glu Val Glu Lys Ile Arg Tyr Thr Tyr Arg Glu Lys
 130 135 140
 Glu Lys Tyr Ala Ala Glu Glu Trp Ile Thr Asp Lys Tyr Ala Leu Asn
 145 150 155 160
 Lys Ala Lys Thr Lys Met Val Arg Gly Leu Ala Lys Trp Arg Arg Lys
 165 170 175
 Thr Val Asn Phe Ala Asp Asn Leu Phe Glu Glu Ala Ala Lys Ala Leu
 180 185 190
 Ser Gln Lys Pro Met Glu Ala Lys Ala Glu Ala Thr Pro Lys Lys Pro
 195 200 205
 Ala Val Val Thr Ala Pro Lys Val Val Val Ile Gly Asp Asn Gln Glu
 210 215 220
 Thr Gly Lys Val Glu Lys Ala Ala Glu Leu Thr Pro Ala Ile Pro Val
 225 230 235 240
 Ile Ser Pro Ser Thr Met Pro Gly Tyr Lys Glu Val Ala Pro Asp Gln
 245 250 255
 Val Pro Ala Asn Ala Ile Gln Met Gly Ala Gly Arg Leu Val Ile Ala
 260 265 270
 Ile Gly Ser Asp Pro Phe Asn Met Thr Met Met Thr Ala Asn Ala Gly
 275 280 285
 Gly Ser Ile Gly Lys Ile Ser Gly Ser Pro Val Val Phe Ser Ile Leu
 290 295 300
 Ser Pro Asp Gln Pro Tyr Glu Gln Leu Glu Lys Ala Glu Thr Tyr Ser
 305 310 315 320
 Ile Arg Phe Tyr Pro Thr Gly Gln Lys Glu Pro Ser Val Ile Leu Glu
 325 330 335
 Cys Gln Lys Leu Pro Ala Pro Thr Pro Met Glu Gly Gln Pro Arg Thr
 340 345 350

Tyr Ala Gly Lys Ile Thr Lys Ala Phe Met Lys
 355 360

<210> 7021
 <211> 182
 <212> PRT
 <213> B.fragilis

<400> 7021
 Pro Phe Ser Thr Asp Val Met Lys Lys Thr Phe Leu Met Leu Leu Thr
 1 5 10 15
 Leu Val Leu Ser Leu Leu Thr Cys Val Ser Cys Ser Glu Glu Thr Leu
 20 25 30
 Asp Tyr Asn Asn Pro Asp Val Asp Leu Phe Val Arg Gln Leu Lys Ala
 35 40 45
 Gly Asn Tyr Asn Thr Lys Ser Pro Lys Gly Phe Val Glu Val Pro Lys
 50 55 60
 Phe Thr Glu Lys Asp Ile Pro Thr Leu Leu Asn Tyr Ala Glu Asp Leu
 65 70 75 80
 Thr Leu Ile Thr Ser Phe Pro Leu Pro Pro Val Ser Ala Tyr Tyr Ser
 85 90 95
 Gly Lys Val Arg Leu Gly Glu Cys Met Leu Trp Val Val Glu Thr Ile
 100 105 110
 Arg Leu Gly His Tyr Ala Ser Phe Gly Cys Lys Met Val Arg Ala Asn
 115 120 125
 Ala Glu Asn Tyr Glu Gly Ile Tyr Phe Leu Thr Asp Glu Glu Leu Leu
 130 135 140
 Asp Ala Ala Ala Arg Tyr Arg Arg Trp Trp Glu Asn Arg Gln Tyr Pro
 145 150 155 160
 Arg Thr Ala Trp Thr Ile Asp Ala Cys Phe Asp Glu Pro Leu Cys Gly
 165 170 175
 Ser Gly Tyr Arg Trp Trp
 180

<210> 7022
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7022
 Asn Ala Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr
 1 5 10 15
 Gly Ser Asp Gly Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser
 20 25 30
 Ala Gly Val Cys Phe Phe Leu Ser Lys Gln Ala Lys Arg Thr Ile Ile
 35 40 45
 Asn Leu Glu Ile Lys Asn Leu Pro Pro Asn Leu Ile
 50 55 60

<210> 7023
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 7023
 Met Lys Thr Thr Leu Ile Val Val Gly Arg Thr Val Glu Gln His Tyr
 1 5 10 15
 Ile Thr Ala Ile Asn Asp Tyr Ile Glu Arg Thr Lys His Phe Ile Ser
 20 25 30

Phe Asp Met Glu Val Ile Pro Glu Leu Lys Asn Thr Lys Ser Leu Thr
 35 40 45
 Pro Glu Gln Gln Lys Glu Lys Glu Gly Glu Leu Ile Ala Lys Ala Leu
 50 55 60
 Gln Pro Gly Asp Val Val Val Leu Leu Asp Glu His Gly Lys Glu Met
 65 70 75 80
 Arg Ser Val Glu Phe Ala Arg Trp Met Glu Lys Lys Leu Val Asn Val
 85 90 95
 Asn Lys Arg Leu Val Phe Ile Ile Gly Gly Pro Tyr Gly Phe Ser Gln
 100 105 110
 Lys Val Tyr Asp Ala Ala His Glu Lys Ile Ser Met Ser Lys Met Thr
 115 120 125
 Phe Ser His Gln Met Ile Arg Leu Ile Phe Val Glu Gln Ile Tyr Arg
 130 135 140
 Ala Met Thr Ile Leu Asn Gly Gly Pro Tyr His His Glu
 145 150 155

<210> 7024

<211> 961

<212> PRT

<213> B.fragilis

<400> 7024

Thr Leu Pro Ala Ser Val Ala Glu Ala Tyr Ile Pro Trp Arg Arg Arg
 1 5 10 15
 Asp Ala Asn Pro Glu Gln Lys Gly Ile Ile Val Ile Asn Ala Ser Thr
 20 25 30
 Gly Lys Ala Val Asp Asn Val Leu Pro Val Glu Ile Asn Arg Glu Tyr
 35 40 45
 Gly Arg Ile Arg Phe Asp Ala Ser Gly Asn Ala Gly Asp Tyr Tyr Val
 50 55 60
 Tyr Tyr Leu Pro Tyr His Thr Ser Gly Gly Pro Tyr Pro Lys Val Asn
 65 70 75 80
 Tyr Pro Gln Gln Pro Asp Lys Ala Asp Pro Gln Trp Lys Ala Thr Cys
 85 90 95
 Lys Ala Thr Pro Ala Gly Lys Ala Val Gln Ala Lys Leu Val Arg Phe
 100 105 110
 Glu Ser Leu Gly Ser Phe Asn Ser Phe Tyr Pro Met Glu Ile Ile Ala
 115 120 125
 Thr Ala Gln Glu Lys Gln Ala Leu Ile Asp Ala Asn Ser Asn Lys Pro
 130 135 140
 Phe Leu Leu Leu Pro Glu Asp Arg Lys Tyr Pro Ile Arg Met Phe Asp
 145 150 155 160
 Asp Leu Ser Tyr Arg Gln Val Thr Gln Gly Ala Thr Gly Glu Phe Phe
 165 170 175
 Gly Glu Ala Asp Leu Asn Glu Tyr Tyr Val Leu Gln Leu Gly Leu Trp
 180 185 190
 Ala Phe Lys Asn Pro Val Asn Gly Val Lys Val Thr Phe Thr Asp Leu
 195 200 205
 Lys Gly Lys Asn Glu Ser Ile Pro Ala Ser Ala Leu Thr Cys Phe Asn
 210 215 220
 Thr Glu Gly Thr Asp Trp Leu Gly Arg Pro Ile His Pro Glu Val Asn
 225 230 235 240
 Val Gly Lys Gly Arg Val Gln Pro Leu Trp Ile Gly Ile Gln Met Pro
 245 250 255
 Glu His Ala Gly Arg Gly Ile Tyr Arg Gly Thr Val Thr Val Ser Asp
 260 265 270
 Leu Ser Gly Ala Ser Gln Glu Val Asn Ile Ala Ile Asn Leu Ser Asp
 275 280 285

755	760	765
Ser Ala Asn Gln Phe Asn Pro	Ala Asp Gly Tyr Ile Asn Ser Ile Phe	
770	775	780
Leu Tyr Met Glu His Met Pro	Tyr Leu Asp Arg Leu Trp Phe Gly Glu	
785	790	795
Tyr Phe Lys Tyr Glu Lys Ser Pro	Glu Tyr Trp Leu Thr Asp Val Ser	
805	810	815
Gly Ile Pro Phe Gly Met Met Ser	Glu Met Leu Gln Asp Gly Gly Asn	
820	825	830
Pro Tyr Arg Gly Met Leu Tyr Gly	Met Thr Ala Arg Glu Pro Met Glu	
835	840	845
Ser Ile Pro Ser Gln Leu Trp Lys	Val Trp Asp Ala Phe Gly Ile Lys	
850	855	860
Asp Ser Arg Met Met Gly Tyr Trp	Val Ser Tyr Asn Pro Val Lys Thr	
865	870	875
Gly Arg Asn Asp Ile Leu Ala Thr	Ser Phe Val Lys Asp Gly Lys Val	
885	890	895
Met Ile Ala Ile Ala Ser Trp Ala	Lys Lys Asp Ser Asp Ile Lys Leu	
900	905	910
Gln Ile Asp Trp Glu Lys Leu Gly	Ile Asp Ala Asp Lys Ala Arg Leu	
915	920	925
Thr Ala Pro Asp Ile Lys Gly Phe	Gln Glu Gly Phe Ser Leu Ser Pro	
930	935	940
Lys Asp Lys Ile Lys Val Pro Lys	Asp Lys Gly Phe Ile Phe Ile Leu	
945	950	955
Glu		960

<210> 7025

<211> 198

<212> PRT

<213> B.fragilis

<400> 7025

Thr Asn Asp Ala Asp Ile Arg Ser	Ile Leu Lys Arg Gln Leu Thr Leu
1	5 10 15
Glu Asn Glu Ile Glu Leu Ile Lys	Gly Cys Arg Ala Gly Lys Asp Ser
20	25 30
Ala Arg Lys Glu Leu Tyr Thr Leu	Tyr Ser Arg Gln Met Leu Ala Val
35	40 45
Cys Phe Arg Tyr Thr Gly Asp Met	Glu Ala Ala His Asp Val Leu His
50	55 60
Asp Gly Phe Ile Lys Ile Phe Thr	Asn Phe Ser Phe Arg Gly Glu Ala
65	70 75 80
Ser Leu Gly Thr Trp Val Thr Arg	Val Met Val Thr Gln Ala Leu Asp
85	90 95
Tyr Leu Arg Arg Gln Lys Arg Val	Ser Gln Leu Glu Val His Glu Glu
100	105 110
Gln Leu Pro Asp Ile Pro Asp Leu	Pro Glu Gly Gly Glu Ala Gly Arg
115	120 125
Ile Ser Glu Glu Gln Leu Met Lys	Phe Val Ala Asp Leu Pro Asp Gly
130	135 140
Cys Arg Thr Val Phe Asn Leu Tyr	Val Phe Glu Glu Lys Ser His Lys
145	150 155 160
Glu Ile Ala Asp Met Leu Gly Ile	Lys Glu His Ser Ser Thr Ser Gln
165	170 175
Leu His Arg Ala Lys Phe Leu Leu	Ala Lys Arg Ile Lys Glu Tyr Arg
180	185 190
Asn His Glu Glu Arg Lys	

195

<210> 7026
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 7026
 Lys Thr Phe Leu Asn Glu Leu Ile Phe Gln Lys Thr Arg Ile Val Met
 1 5 10 15
 Ile Glu Lys Val Phe Lys Val Gly Asp Thr Ile Thr Ile Lys Arg Thr
 20 25 30
 Ser Gln Ala Gly Thr Gly Tyr Arg Tyr Ala Leu Val Arg Leu Thr Gly
 35 40 45
 Gly Val Ala Leu Val Glu Glu Leu Ser Glu Asp Ala Asp Thr Pro Gly
 50 55 60
 Gly Thr Ser Val Gln Ser Phe Ile Phe Arg Phe Leu Gln Pro Gly Gln
 65 70 75 80
 Val Glu Ile Gln Phe Ala Tyr Tyr Arg Asp Ser Glu Glu Val Leu Tyr
 85 90 95
 Glu Asp Val Phe Ser Tyr Glu Val Val Thr Ser Glu Lys Ala Asn Pro
 100 105 110
 Ile Ile Gly Gly Trp Gly Glu Phe Lys Pro Leu Thr Asp Gln Glu Lys
 115 120 125
 Glu Ile Phe Arg Thr Cys Met Thr Leu Lys Gly Val Asp Tyr Thr Pro
 130 135 140
 Leu Leu Val Ala Lys Gln Leu Ala Ser Gly Tyr Asn Tyr Arg Phe Ile
 145 150 155 160
 Cys Met Thr Glu Leu Leu Ile Arg Glu Pro Lys Tyr Gly Phe Ala Lys
 165 170 175
 Val Thr Ile Tyr Ala Pro Leu Arg Gly Glu Pro Ile Leu Glu Ser Ile
 180 185 190
 Ile Glu Cys
 195

<210> 7027
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 7027
 Phe Gln Asn Tyr Met Asn Gln Val Gln Asn Leu Gln His Ile Ala Arg
 1 5 10 15
 Glu Leu Leu Tyr Leu Gly Met Asp Gly Ser Pro Ile Tyr Thr Asp His
 20 25 30
 Phe Arg Gln Leu Asn Thr Glu Val Phe Arg Leu Ser Glu Ala Leu Phe
 35 40 45
 Ser Met Lys Gly Ala Thr Ser Glu Glu Glu Ala Ala Ile Cys Leu Ser
 50 55 60
 Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asn Asp Gly Asp Lys Glu
 65 70 75 80
 Ser Lys Ile Gln Ser Ile Leu Asp Arg Ser Phe Ala Val Leu Asp His
 85 90 95
 Leu Pro Ala Ser Leu Leu Lys Cys Gln Leu Leu Thr Tyr Cys Tyr Gly
 100 105 110
 Glu Val Phe Glu Glu Asp Leu Ala Gln Glu Ala His Gln Ile Met Asp
 115 120 125
 Ser Trp Lys Asn Arg Ala Leu Ser Glu Glu Glu Leu Glu Val Met Glu
 130 135 140

3510

Thr Leu Gln Thr Met Glu Asp Asn Arg Tyr Pro Cys Ser Glu Val Glu
 145 150 155 160
 Asp

<210> 7028
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7028
 Thr Cys Lys Tyr Phe Glu Lys Lys Cys Phe Ile Lys Ile Val Phe Asp
 1 5 10 15
 Lys Ser Asp Ser Leu Phe Thr Phe Ala Asn Gln Leu Ile Ile Gly Lys
 20 25 30
 Tyr Glu Glu Lys Leu Phe Leu Cys Arg Trp Ser Val Ile Ala Ser Leu
 35 40 45
 Gly Tyr Gly Ser Met Phe Arg Thr Arg Lys Ser Gly
 50 55 60

<210> 7029
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 7029
 Leu Phe Cys Leu Leu Arg Val Val Val Glu Glu Lys Leu Asn Asp Met
 1 5 10 15
 Glu Thr Val Thr Asp Thr Glu Ser Ser Ser Ser Pro Asp Asp Cys Ala
 20 25 30
 Lys Thr Pro Glu Arg Leu Gly Ala Gly Leu Pro Lys Thr Gly Ser Glu
 35 40 45
 Arg Ile Gly Val Lys Ser Cys Phe Thr Thr Ser Pro Ser Arg Cys Val
 50 55 60
 Val Phe Pro Leu Thr Thr Ala Thr Trp Val Lys Ala Ser Ser Ile Ser
 65 70 75 80
 Ala Phe Gly Glu Lys Asn Gln Lys Ala Ala Asp Glu Ala Ala Asn Thr
 85 90 95
 Ser Ser Thr Glu Ala Ala Ala Ala Thr Arg Lys Lys Thr Thr Phe Arg
 100 105 110

<210> 7030
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 7030
 Met Ser Glu Gln Gln Glu Tyr Trp Phe Ala Ala Arg Thr Lys Lys Asp
 1 5 10 15
 Gln Glu Phe Ser Val Arg Asn Ala Leu Glu Lys Leu Gly Ile Glu Tyr
 20 25 30
 Phe Leu Pro Thr Gln Phe Val Ile Arg Gln Leu Lys Tyr Arg Arg Arg
 35 40 45
 Arg Val Glu Val Pro Val Ile Lys Asn Leu Ile Phe Val Arg Thr Thr
 50 55 60
 Lys Asp Arg Ala Trp Ser Ile Thr Lys Asp Asp His Val Pro Leu Tyr
 65 70 75 80
 Tyr Met Lys Asp Leu Tyr Thr His Thr Leu Leu Ile Val Pro Asn Lys
 85 90 95

Gln Met Glu Asp Phe Lys Phe Val Met Asp Leu Ala Pro Glu Asn Val
 100 105 110
 Thr Phe Asp Asp Leu Pro Leu Thr Val Gly Thr Lys Val Gln Val Val
 115 120 125
 Lys Gly Glu Phe Cys Gly Ile Glu Gly Glu Leu Ser Ser Leu Ala Asn
 130 135 140
 Arg Thr Tyr Val Val Ile Arg Ile His Gly Val Leu Ser Ala Ser Val
 145 150 155 160
 Lys Val Pro Lys Ser Tyr Leu Arg Ile Leu Ser Ala
 165 170

<210> 7031
 <211> 434
 <212> PRT
 <213> B.fragilis

<400> 7031

Ile Ile Asn Lys Asn Lys Met Asn Met Glu Glu Ile Arg Ile Ala Val
 1 5 10 15
 Ile Gly Leu Gly Tyr Val Gly Leu Pro Leu Ala Arg Leu Phe Ser Thr
 20 25 30
 Lys Phe Lys Thr Val Gly Phe Asp Met Asn Lys Ser Arg Val Asp Ser
 35 40 45
 Ile Met Lys Gly His Asp Ala Thr Leu Glu Val Ser Asp Ser Leu Leu
 50 55 60
 Gln Asp Ala Ile Thr Asn Asn His Phe Met Cys Ser Asn Glu Leu Ser
 65 70 75 80
 Ile Ile Lys Asn Cys Asn Phe Tyr Ile Val Ala Val Pro Thr Pro Val
 85 90 95
 Asp Leu Asp Asn Arg Pro Asp Leu Arg Pro Leu Leu Ser Ala Ser Glu
 100 105 110
 Thr Val Gly Lys Val Ile Ser Lys Gly Asp Ile Val Val Tyr Glu Ser
 115 120 125
 Thr Val Tyr Pro Gly Val Thr Glu Glu Glu Cys Ile Pro Leu Ile Glu
 130 135 140
 Lys Val Ser Gly Leu Lys Phe Asn Glu Asp Phe Phe Ala Gly Tyr Ser
 145 150 155 160
 Pro Glu Arg Ile Asn Pro Gly Asp Lys Glu His Thr Val Glu Lys Ile
 165 170 175
 Ile Lys Val Thr Ser Gly Ser Thr Pro Glu Ile Ala Glu Ile Ile Asp
 180 185 190
 Arg Val Tyr Asn Lys Val Leu Val Asn Gly Thr His Lys Ala Pro Ser
 195 200 205
 Ile Lys Val Ala Glu Ala Ser Lys Ile Ile Glu Asn Ser Gln Arg Asp
 210 215 220
 Val Asn Ile Ala Phe Met Asn Glu Leu Ala Lys Ile Phe Asn Ala Met
 225 230 235 240
 Gly Ile Asp Thr Asn Asp Val Ile Ala Ala Ala Ser Ser Lys Trp Asn
 245 250 255
 Phe Ile Lys Leu Arg Pro Gly Leu Val Gly Gly His Cys Ile Ser Val
 260 265 270
 Asp Pro Tyr Tyr Leu Ile Gln Lys Ala Gln Val Tyr Gly Ile Phe Pro
 275 280 285
 Arg Ile Met Ser Ala Ala Arg Arg Leu Asn Asp Gly Met Gly Asp Tyr
 290 295 300
 Ile Ala Asn Gln Val Ile Gln Leu Met Asn Lys Lys Gly Ile Leu Val
 305 310 315 320
 Lys Asp Ala His Ile Leu Ile Leu Gly Val Thr Phe Lys Glu Asn Cys
 325 330 335

Pro Asp Ile Arg Asn Thr Lys Ile Val Asp Ile Tyr Ser Val Leu Ser
 340 345 350
 Glu Tyr Thr Ser Asn Ile Lys Val Tyr Asp Pro Trp Val Asn Gln Ser
 355 360 365
 Lys Ile Lys Glu Glu Tyr Gly Ile Asn Val Ile Asn Glu Asp Leu Lys
 370 375 380
 Asn Leu Glu Gly Lys Phe Asp Val Ile Ile Leu Gly Val Ala His Asp
 385 390 395 400
 Cys Phe Lys Asn Ile Gln Val Asn Asp Leu Leu Lys Lys Glu Tyr Gly
 405 410 415
 Val Val Tyr Asp Val Lys Gly Val Leu Asp Arg Asn Ile Val Asp Gly
 420 425 430
 Arg Leu

<210> 7032

<211> 342

<212> PRT

<213> B.fragilis

<400> 7032

Asn Val Asn Lys Lys Ile Met Ala Tyr Thr Ile Ala Phe Phe Gly Thr
 1 5 10 15
 Lys Pro Tyr Asp Glu Ala Ser Phe Asn Glu Lys Asn Lys Glu Phe Gly
 20 25 30
 Phe Glu Leu Arg Phe Phe Lys Gly His Leu Asn Arg His Asn Val Leu
 35 40 45
 Leu Thr Gln Gly Val Asp Ala Val Cys Ile Phe Val Asn Asp Thr Ala
 50 55 60
 Asp Ala Glu Val Ile Arg Thr Met Ala Thr Asn Gly Val Lys Leu Leu
 65 70 75 80
 Ala Leu Arg Cys Ala Gly Tyr Asn Asn Val Asp Leu Lys Ala Ala Ala
 85 90 95
 Glu Asn Gly Val Thr Val Val Arg Val Pro Ala Tyr Ser Pro Tyr Ala
 100 105 110
 Val Ala Glu Tyr Thr Val Ala Leu Met Leu Ser Leu Asn Arg Lys Ile
 115 120 125
 Pro Arg Ala Ser Trp Arg Thr Arg Asp Gly Asn Phe Ser Leu His Gly
 130 135 140
 Leu Leu Gly Phe Asp Met His Gly Lys Thr Ala Gly Ile Ile Gly Thr
 145 150 155 160
 Gly Lys Ile Ala Lys Ile Leu Ile His Ile Leu Lys Gly Phe Gly Met
 165 170 175
 Asn Ile Leu Ala Tyr Asp Leu Tyr Pro Asp Tyr Asn Phe Ala Arg Glu
 180 185 190
 Asn Gln Ile Val Tyr Thr Thr Leu Asp Glu Leu Tyr His Ser Ser Asp
 195 200 205
 Ile Ile Ser Leu His Cys Pro Leu Thr Glu Gln Thr Lys Tyr Leu Ile
 210 215 220
 Asn Asp Tyr Ser Ile Ser Lys Met Lys Asp Gly Val Met Ile Ile Asn
 225 230 235 240
 Thr Gly Arg Gly Gln Leu Ile His Thr Asn Ala Leu Ile Glu Gly Leu
 245 250 255
 Lys Asn Lys Lys Ile Gly Ser Ala Gly Leu Asp Val Tyr Glu Glu Glu
 260 265 270
 Ser Glu Tyr Phe Tyr Glu Asp Lys Ser Asp Arg Ile Ile Asp Asp Asp
 275 280 285
 Val Leu Ala Arg Leu Leu Ser Phe Asn Asn Val Ile Val Thr Ser His
 290 295 300

3513

Gln Ala Phe Phe Thr Arg Glu Ala Leu Ala Asn Ile Ala Ala Thr Thr
 305 310 315 320
 Leu Glu Asn Ile Arg Asp Phe Lys Asn Gln Lys Pro Leu Val Asn Glu
 325 330 335
 Val Lys Leu Ser Asn Ala
 340

<210> 7033
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7033
 Tyr Pro Thr Lys Arg Asn Ser Asn Asn Ile Gln Asp Lys Leu Thr Asn
 1 5 10 15
 Pro Leu Leu Arg Lys Glu Tyr Ile Thr Thr Lys Asn Gly Lys Asn Ser
 20 25 30
 Ile Lys Asp Asp Val Leu Thr Pro His Asn Ile Glu Asn Lys Lys Glu
 35 40 45
 Ala Ala Thr Ile Glu Tyr Phe Pro Tyr Leu Asn Ile Ile Ser Ala Thr
 50 55 60
 Asn Ala Ile Lys Ala Pro Ser Leu Gly Leu Glu Asn Lys Pro Phe
 65 70 75 80
 Leu Tyr Ile Lys Leu Leu Met Pro Ile Ala Ser Ser Asp Asn Phe Thr
 85 90 95
 Thr Tyr Phe Lys Leu Met Ile Ser
 100

<210> 7034
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7034
 Lys Ile Asn Lys Gly Ile Leu Val Pro Phe Ser Lys Asn Asp Ile Thr
 1 5 10 15
 Met Asn Arg Ile Ser Ser Leu Phe Gly Ile Gln Tyr Pro Ile Ile Gln
 20 25 30
 Gly Gly Met Val Trp Cys Ser Gly Trp Lys Leu Ala Ser Ala Val Ser
 35 40 45
 Asn Ala Gly Gly Leu Gly Leu Ile Gly Ser Gly Ser Met Tyr Pro Asp
 50 55 60
 Val Leu Arg Glu His Ile Arg Lys Cys Arg Ala Ala Thr Asp Lys Pro
 65 70 75 80
 Phe Gly Val Asn Ile Pro Leu Met Tyr Pro Gln Ile Glu Glu Ile Met
 85 90 95
 Asn Ile Val Val Glu Glu Gly Val Lys Ile Val Phe Thr Ser Ala Gly
 100 105 110
 Asn Pro Lys Thr Trp Thr Gly Trp Leu Lys Glu Arg Gly Ile Thr Val
 115 120 125
 Ala His Val Val Ser Ser Ser Lys Phe Ala Met Lys Cys Glu Glu Ala
 130 135 140
 Gly Val Asp Ala Ile Val Ala Glu Gly Phe Glu Ala Gly Gly His Asn
 145 150 155 160
 Gly Arg Glu Glu Thr Thr Thr Leu Cys Leu Ile Pro Ala Val Arg Glu
 165 170 175
 Ala Thr Thr Leu Pro Leu Ile Ala Ala Gly Gly Ile Gly Thr Gly Glu
 180 185 190
 Ala Ile Phe Ala Leu Met Ala Leu Gly Ala Glu Gly Val Gln Met Gly

195	200	205
Thr Arg Phe Ala Leu	Thr Asp Glu Ser Ser Ala Ser	Asp Ile Phe Lys
210	215	220
Glu Tyr Cys Leu Arg	Leu Asn Glu Gly Asp Thr Lys	Leu Leu Leu Lys
225	230	235
Lys Leu Ala Pro Thr	Arg Leu Val Thr Asn Ser Phe Arg	Asp Arg Val
245	250	255
Glu Ala Ala Glu Gly	Arg Gly Ala Ser Ala Glu Glu	Leu Arg Glu Leu
260	265	270
Leu Gly Arg Gly Arg	Ala Lys Lys Gly Ile Phe Glu	Gly Asp Leu Glu
275	280	285
Glu Gly Glu Leu Glu	Ile Gly Gln Val Ala Ala Leu	Phe Arg Arg Arg
290	295	300
Gln Ser Val Asp Glu	Val Met Lys Glu Leu Leu	Glu Gly Tyr Arg Arg
305	310	315
Ala Ser Asp Lys Ile	Arg Ser Ala Gly Leu	
325	330	

<210> 7035
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 7035
Met Met Lys Asn Asp Ser Ala Val Val Leu Phe Ser Gly Gly Gln Asp
1 5 10 15
Ser Thr Thr Cys Leu Phe Trp Ala Lys Lys His Phe Lys Lys Val Tyr
20 25 30
Ala Leu Ser Phe Leu Tyr Gly Gln Lys His Ala His Glu Val Glu Leu
35 40 45
Ala Arg Gly Ile Ala Glu Arg Ala Gly Val Glu Phe His Val Met Asp
50 55 60
Thr Ser Phe Ile Gly Ser Leu Gly Ser Asn Ser Leu Thr Asp Thr Ser
65 70 75 80
Ile Ser Met Asp Glu Asp Lys Pro Lys Asp Ser Phe Pro Asn Thr Phe
85 90 95
Val Pro Gly Arg Asn Leu Phe Phe Leu Ser Ile Ala Ala Val Phe Ala
100 105 110
Arg Glu Gln Gly Ala Phe His Leu Val Thr Gly Val Ser Gln Thr Asp
115 120 125
Tyr Ser Gly Tyr Pro Asp Cys Arg Asp Ser Phe Ile Lys Ser Leu Asn
130 135 140
Val Thr Leu Asn Leu Ala Met Asp Glu Gln Phe Val Ile His Thr Pro
145 150 155 160
Leu Met Trp Ile Asp Lys Ala Glu Thr Trp Ala Leu Ala Asp Glu Leu
165 170 175
Gly Val Phe Asp Leu Val Arg Asn Glu Thr Leu Thr Cys Tyr Asn Gly
180 185 190
Ile Pro Ala Asp Gly Cys Gly His Cys Pro Ala Cys Lys Leu Arg Lys
195 200 205
Gln Gly Leu Glu Glu Tyr Leu Ser Lys Arg Asn Arg
210 215 220

<210> 7036
 <211> 386
 <212> PRT
 <213> B.fragilis

<400> 7036

Lys Val Lys Lys Val Lys Met Cys Cys Leu Lys Arg Arg Asn Ile Phe
 1 5 10 15
 Ile Leu Phe Gln Phe Leu Leu Ile Leu Cys Phe Ile Phe Ser Ser Ile
 20 25 30
 Gly Glu Thr Phe Tyr Ser Ser Val Asn Thr Asn Thr Gln Tyr Ile Ile
 35 40 45
 Val Leu Phe Ser Phe Tyr Tyr Leu Phe Ser Ile Leu Cys Cys Arg Gly
 50 55 60
 Val Tyr Pro Asp Gln Leu Ile Ile Leu Leu Tyr Ala Ile Leu Leu Ser
 65 70 75 80
 Phe Phe Met Thr Tyr Leu Ser Ser Arg Gly Asn Ile Asn Met Leu Lys
 85 90 95
 Ile Asn Tyr Ile Tyr Ile Tyr Pro Ile Phe Leu Gly Tyr Leu Leu Ser
 100 105 110
 Tyr Arg Phe Glu Asn Gly Phe Val Leu Arg Val Leu Gln Val Cys Leu
 115 120 125
 Ile Ala Asn Phe Leu Ala Ile Cys Tyr Glu Ile Ile Asn Leu Lys Tyr
 130 135 140
 Val Val Lys Leu Ser Glu Asp Ala Ile Gly Ile Asn Asn Leu Ile Tyr
 145 150 155 160
 Arg Asn Gly Leu Phe Ser Asn Pro Lys Glu Gly Gly Ala Phe Ile Ala
 165 170 175
 Phe Val Ala Leu Ile Met Phe Lys Tyr Gly Lys Tyr Ser Ile Val Ala
 180 185 190
 Ala Ser Phe Leu Phe Ser Ile Leu Cys Gly Val Arg Thr Ser Ser Phe
 195 200 205
 Ile Leu Phe Phe Pro Phe Leu Val Val Met Tyr Ser Phe Leu Lys Arg
 210 215 220
 Gly Leu Val Ser Leu Ser Trp Met Leu Leu Leu Phe Leu Leu Val Gly
 225 230 235 240
 Tyr Tyr Met Phe Tyr Tyr Met Ser Asp Val Ser Ser Leu Met Glu Arg
 245 250 255
 Phe Ile Asn Leu Leu Ser Thr Thr Asp Glu Gly Asn Ser Met Arg Leu
 260 265 270
 Val Phe Met Lys Lys His Val Asp Ile Cys Val Asp Asp Tyr Asn Leu
 275 280 285
 Phe Asp Tyr Leu Phe Gly Arg Phe Gly Tyr Ser Arg Asn Gln Ile Gly
 290 295 300
 Asn Gly Ala Glu Ser Ser Trp Leu Asp Leu Leu Thr Asn Val Gly Ile
 305 310 315 320
 Ser Thr Phe Leu Leu Tyr Val Ile Pro Leu Cys Gln Ile Ile Val Cys
 325 330 335
 Ser Gln Lys Trp Ile Met Lys Ile Thr Tyr Leu Val Leu Phe Val Ser
 340 345 350
 Met Gly Ile Ser Arg Phe Gly Ile Gly Ile Thr Ser Gly Val Leu Phe
 355 360 365
 Trp Leu Leu Ile Phe Gln Glu Leu Lys Glu Ser Lys Leu Ser Lys Asp
 370 375 380
 Ile Ser
 385

<210> 7037

<211> 351

<212> PRT

<213> B.fragilis

<400> 7037

Asn Ile Met Asn Arg Tyr Pro Tyr Ile Ile Ala Glu Ile Gly Gly Asn
 1 5 10 15

His Asn Gly Asp Met Glu Leu Ala Arg Glu Met Ile Lys Ser Ala Lys
 20 25 30
 Glu His Gly Ala Asp Ala Val Lys Phe Gln Leu Tyr Arg Lys Glu Asp
 35 40 45
 Leu Trp Thr Asn Asp His Leu Glu Glu Leu Asn Asn Gly Val Val Asn
 50 55 60
 Leu Glu Asn Val Ser Asn Trp Ser Thr Gln Glu Leu Gly Leu Lys Asn
 65 70 75 80
 Ile Phe Glu Gln Val Glu Lys Phe Ser Val Gln Glu Lys Asp His Ile
 85 90 95
 Val Phe Phe Asp Tyr Ala Arg Glu Phe Gly Ile Asp Tyr Ala Thr Ser
 100 105 110
 Ala Phe Thr Lys Gln Asp Ile Asp Phe Cys Ile Asp Gln Lys Val Ala
 115 120 125
 Phe Leu Lys Ile Ala Ser Cys Asp Ile Thr Asn Leu Asp Leu Ile Glu
 130 135 140
 Tyr Ala Ile Ser Lys Asp Tyr Pro Leu Leu Ile Ser Leu Gly Leu Ala
 145 150 155 160
 Asp Leu Gly Glu Ile Glu Gln Val Val Asn Leu Ile Pro Glu Lys Cys
 165 170 175
 Arg Pro Asn Ile Thr Leu Leu His Cys Val Ser Leu Tyr Pro Pro Lys
 180 185 190
 Asp Glu Ile Val Asn Leu Lys Phe Met His Thr Leu Thr Ser Thr Phe
 195 200 205
 Gly Leu Asn Val Gly Tyr Ser Asp His Thr Leu Gly Val Ser Ile Ser
 210 215 220
 Leu Ala Ala Val Ala Leu Gly Ala Lys Val Ile Glu Lys His Phe Thr
 225 230 235 240
 Leu Asp Lys Glu Met Pro Gly Trp Asp His Lys Val Ser Ala Asn Pro
 245 250 255
 Glu Glu Met Ala Val Ile Ser Arg Glu Thr Lys Arg Ile Val Asp Ser
 260 265 270
 Leu Gly Asn Gly Ile Lys Thr Ile Ser Glu Asp Glu Phe Glu Lys Arg
 275 280 285
 Lys Lys Phe Arg Arg Ser Ile Thr Thr Lys Tyr Val Leu Gln Glu Gly
 290 295 300
 His Val Ile Ser Tyr Asp Asp Ile Leu Phe Lys Arg Pro Gly Thr Gly
 305 310 315 320
 Ile Ser Ala Asn Arg Leu Lys Asp Val Ile Gly Arg Arg Val Asn His
 325 330 335
 Thr Ile Glu Ala Asp Lys Thr Leu Phe Trp Glu Asp Leu Ile Arg
 340 345 350

<210> 7038
 <211> 388
 <212> PRT
 <213> B.fragilis

<400> 7038
 Leu Tyr Met Lys Ile Val His Leu Cys Leu Ala Ser Phe Phe Val Asp
 1 5 10 15
 Asn Tyr Thr Tyr Gln Glu Asn Leu Leu Pro Lys Tyr His Lys Met Ala
 20 25 30
 Gly His Asp Val Thr Ile Ile Ala Ser Leu Val Ser Phe Ser Glu Lys
 35 40 45
 Arg Lys Pro Ile Ile Leu Pro Gly Glu Ser Ile Tyr Glu Thr Gln Glu
 50 55 60
 Gly Cys Arg Val Tyr Arg Val Asp Tyr Lys Arg Ser Phe Tyr Phe Phe
 65 70 75 80

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Asn Arg Leu Leu Arg Arg Tyr Asn Lys Leu Gln Ser Leu Leu Asp Lys
      85                      90                      95
Glu Arg Pro Asp Met Ile Phe Ile His Gly Val Gln Phe Ala Asn Val
      100                    105                    110
Ser Ile Ile Leu Lys Tyr Lys Lys Lys Tyr Pro Ser Val Arg Ile Leu
      115                    120                    125
Cys Asp Asn His Ala Asp Trp Ile Asn Ser Ala Arg Asn Leu Leu Ser
      130                    135                    140
Lys Lys Ile Leu His Gly Ile Ile Trp Arg Tyr Tyr Ala Asn Lys Ile
      145                    150                    155                    160
Glu Pro Tyr Val Thr Arg Phe Tyr Gly Val Thr Pro Leu Arg Cys Glu
      165                    170                    175
Phe Leu Lys Lys Met Tyr Asn Ile Pro Ser Ser Lys Val Ser Leu Leu
      180                    185                    190
Val Met Gly Val Asp Asp Trp Gly Ile Pro Trp Glu Asn Arg Asn Ala
      195                    200                    205
Ile His Met Lys Ile Arg Asn Gln Leu Asn Ile Ala Pro Ser Asp Phe
      210                    215                    220
Leu Ile Ile Thr Gly Gly Lys Ile Asp Glu Arg Lys Asn Ile His Leu
      225                    230                    235                    240
Leu Met Glu Ala Val Leu Asn Ser Phe Glu Ser Asn Ile His Leu Val
      245                    250                    255
Val Phe Gly Asn Ile Ala Pro Glu Met Lys Lys Lys Ile Asp Ser Leu
      260                    265                    270
Glu Asp Asn Glu Lys Ile His Tyr Val Gly Trp Leu Ser Ser Glu Lys
      275                    280                    285
Thr Ile Glu Tyr Phe Phe Ala Ser Asp Leu Ala Val Phe Pro Gly Thr
      290                    295                    300
His Ser Val Leu Trp Glu Gln Ala Val Gly Ile Gly Ile Pro Ser Ile
      305                    310                    315                    320
Phe Lys Tyr Trp Asp Gly Met Thr His Val Asp Leu Gly Gly Asn Cys
      325                    330                    335
Leu Phe Leu Phe Glu Asn Ser Ser Glu Glu Ile Ser Lys Lys Ile Ser
      340                    345                    350
Ser Leu Ser Ser Arg Glu Thr Lys Tyr Leu Glu Met Lys Lys Ile Ala
      355                    360                    365
Ser Cys Phe Ala His Lys Phe Tyr Tyr Ser Asp Ile Ala Lys Lys Val
      370                    375                    380
Ile Glu Asp Val
385

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<210> 7039

<211> 442

<212> PRT

<213> B.fragilis

<400> 7039

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Phe Asn Met Lys Asn Lys Val Asp Ile Leu Ser Phe Thr Tyr Ser Ser
1      5                      10                      15
Lys Gly Arg Asp Ile Asp Ile Val Glu Pro Val Leu Ser Lys Leu Glu
      20                      25                      30
Leu Glu Leu Gly Val Ile Ile Lys Arg Cys Trp Leu Tyr Asp Asn Phe
      35                      40                      45
Val Phe Asp Ile Leu Arg Tyr Lys Pro Lys Met Leu Ile Leu Ala Asn
      50                      55                      60
Ala Ile Gly Cys His Tyr His Phe Trp Ala Ala Lys Phe Ala Ser Met
      65                      70                      75                      80
Leu Gly Ile Lys Val Val Thr Phe Val Ser Glu Gly Asp Tyr Arg Tyr
      85                      90                      95

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Ile Asn Gly Ser Ile Thr Thr Met Leu Tyr Gly Trp Asn Lys Glu Glu
 100 105 110
 His Leu Tyr Glu Asp Leu His Leu Glu Trp Ser Gln Arg Asn Ile Asn
 115 120 125
 Tyr Phe Ser Thr Ser Pro Ser Phe Asp Glu Asn Ile Val Lys Leu Ser
 130 135 140
 Gly Ala Thr Gly Phe Asp Lys Tyr Lys Leu Leu Lys Phe Leu Asn Lys
 145 150 155 160
 Asn Asp Phe Leu Met Lys Tyr Asp Leu Gly His Tyr Glu Lys Ile Val
 165 170 175
 Gly Leu Gly Gly Trp Thr Phe Asp Phe Ala Phe Asn Glu Asn His Ser
 180 185 190
 Thr Gly Pro Ile Phe Phe Gly Lys Glu Leu Asp Gly Ile Lys Ala Ser
 195 200 205
 Leu Phe Ala Leu Arg Glu Gly Tyr Arg Ala Leu Val Thr Asn Asn Pro
 210 215 220
 Asp Ile Leu Phe Ile Cys Lys Lys His Pro Leu Thr Ile Asn Glu Tyr
 225 230 235 240
 Tyr Asp Glu Phe Ser Leu Val Arg Glu Tyr Pro Asn Val Ile Thr Leu
 245 250 255
 Gln Thr Glu Glu Asn Ile Tyr Asp Leu Ile Asn Val Ser Asp Leu Trp
 260 265 270
 Ile Thr Phe Asp Ser Thr Thr Ala Leu Glu Ala Trp Leu Leu Gly Lys
 275 280 285
 Thr Thr Leu Leu Tyr Asn Pro Val Ile Gln Asp Phe Asn Arg Ser Ser
 290 295 300
 Ile Met Lys Gly Ser Pro Ile Leu Thr Thr Pro Glu Met Leu Ile Asp
 305 310 315 320
 Ser Val Lys Glu Phe Tyr Glu Asn Asn Arg Ile Ile Asp Ala Phe Ser
 325 330 335
 Gln Lys Glu Asn Glu Arg Asn Asn Ile Ile Lys Glu Val Ile Ala Phe
 340 345 350
 Cys Asp Gly Lys Asn Tyr Leu Arg Ala Ala Asp Leu Ile Thr Ser Leu
 355 360 365
 Tyr Leu Gly Glu Lys Lys Lys Lys Glu Lys Val His Val Ala Phe Ile
 370 375 380
 Leu Lys Met Gly Gly Cys Gly Ile Arg Asn Phe Leu Arg Asn Leu Val
 385 390 395 400
 Ala Tyr Ser Asn Phe Phe Asp Val Ile Pro Arg Val Arg Arg Phe Lys
 405 410 415
 Asn Thr Arg Leu Ala Leu Tyr Asn Glu Lys Glu Arg Glu Tyr Tyr Arg
 420 425 430
 Leu Ile Tyr Lys Glu Ala Ile Thr Asn Asp
 435 440

<210> 7040

<211> 200

<212> PRT

<213> B.fragilis

<400> 7040

Glu Ser Met Lys Lys Asn Phe Phe Tyr Ala Gly Gly Leu Ser Leu Leu
 1 5 10 15
 Leu Trp Gly Met Ala Ala Cys Ser Gly Gln Gly Lys Ala Asp Lys Ala
 20 25 30
 Ala Val Val Ala Asp Ser Val Val Val Lys Thr Asp Ser Val Ala Ala
 35 40 45
 Asp Ser Thr Gly Tyr Ile Val Lys Val Gly Glu Ser Ala Pro Asp Phe
 50 55 60

Thr Ile Thr Leu Thr Asp Gly Lys Gln Met Lys Leu Ser Glu Leu Arg
 65 70 75 80
 Gly Lys Val Val Met Leu Gln Phe Thr Ala Ser Trp Cys Gly Val Cys
 85 90 95
 Arg Lys Glu Met Pro Phe Ile Glu Lys Asp Ile Trp Leu Lys His Lys
 100 105 110
 Asn Asn Pro Glu Phe Ala Leu Ile Gly Ile Asp Arg Asp Glu Pro Leu
 115 120 125
 Asp Lys Val Ile Ala Phe Gly Lys Ser Val Gly Val Thr Tyr Pro Leu
 130 135 140
 Gly Leu Asp Pro Gly Ala Asp Ile Phe Ala Lys Tyr Ala Leu Arg Glu
 145 150 155 160
 Ser Gly Ile Thr Arg Asn Val Leu Ile Asp Arg Glu Gly Lys Ile Val
 165 170 175
 Lys Leu Thr Arg Leu Tyr Asn Glu Glu Glu Phe Ala Ser Leu Val Asp
 180 185 190
 Gln Ile Asp Glu Met Leu Lys Lys
 195 200

<210> 7041

<211> 431

<212> PRT

<213> B.fragilis

<400> 7041

Leu Ile Met Lys Thr Phe Phe Arg Ser Val Ala Met Leu Leu Gly Leu
 1 5 10 15
 Gly Leu Leu Pro Leu Ala Ala His Ala Gln Lys Lys Val Ile Ile Glu
 20 25 30
 Asp Glu Glu Pro Asn Ser Val Met Phe Val Ser Thr Asn Lys Ala Gly
 35 40 45
 Asp Glu Ile Ile Arg Ile Met Asn Glu Thr Arg Leu Pro Arg Phe His
 50 55 60
 Glu Pro Lys Ala Pro Arg Phe Val Leu Thr Asp Arg Gln Gly Lys Phe
 65 70 75 80
 Ala Leu Gly Ile Gly Gly Tyr Val Arg Ala Thr Ala Glu Tyr Asp Phe
 85 90 95
 Gly Gly Ile Val Lys Asp Val Asp Phe Tyr Pro Ala Leu Ile Pro Asn
 100 105 110
 Lys Gly Ser Ala Asp Arg Ala Arg Asn Gln Phe Gln Met Asp Ile Ser
 115 120 125
 Thr Ser Thr Leu Phe Leu Lys Leu Val Gly His Thr Lys Arg Leu Gly
 130 135 140
 Asp Phe Val Val Tyr Thr Ala Ala Asn Phe Arg Gly Asp Gly Lys Thr
 145 150 155 160
 Phe Glu Leu Gln Asn Ala Tyr Ala Thr Phe Leu Gly Phe Thr Leu Gly
 165 170 175
 Tyr Ser Tyr Gly Asn Phe Met Asp Leu Ala Ala Leu Pro Pro Thr Ile
 180 185 190
 Asp Phe Ala Gly Pro Asn Gly Ser Ala Phe Tyr Arg Thr Thr Gln Leu
 195 200 205
 Ser Tyr Met Cys Asp Lys Leu Lys Asn Trp Lys Phe Gly Val Gly Val
 210 215 220
 Glu Met Pro Ser Val Asp Gly Thr Thr Asn Gln Tyr Leu Thr Ile Asn
 225 230 235 240
 Thr Gln Arg Met Pro Asp Phe Thr Ala Ser Ala Gln Tyr Asn Trp Asn
 245 250 255
 Ala Asn Ser His Leu Lys Leu Ala Ala Ile Val Arg Ser Met Thr Tyr
 260 265 270

Ser Ser Ser Val Asp Asn Lys Ala His Ser Lys Ala Gly Tyr Gly Leu
 275 280 285
 Gln Ala Ser Thr Ser Phe Asn Val Thr Pro Lys Trp Gln Val Tyr Gly
 290 295 300
 Gln Val Asn Tyr Gly Lys Gly Ile Gly Gln Tyr Leu Asn Asp Leu Ser
 305 310 315 320
 Asn Leu Asn Val Asp Ile Val Pro Asn Pro Glu Lys Glu Gly Arg Met
 325 330 335
 Gln Thr Leu Pro Met Leu Gly Trp Phe Ala Gly Leu Gln Tyr Asn Ile
 340 345 350
 Ser Lys Asn Val Phe Val Ser Gly Thr Tyr Ser Leu Ser Arg Leu Tyr
 355 360 365
 Ser Glu His Thr Tyr Pro Ser Asp Glu Pro Asp Met Tyr Arg Lys Gly
 370 375 380
 Gln Tyr Leu Val Ala Asn Leu Phe Trp Asn Val Thr Ser Asn Leu Gln
 385 390 395 400
 Val Gly Ala Glu Tyr Leu Arg Gly Trp Arg Thr Asp Phe Ser Ser Asn
 405 410 415
 Thr Arg His Ala Asn Arg Met Asn Ala Leu Val Gln Tyr Ser Phe
 420 425 430

<210> 7042

<211> 343

<212> PRT

<213> B.fragilis

<400> 7042

Tyr Glu Met Lys Asp Arg Ile Ile Leu Ser Asn Val Lys Asn Ile Lys
 1 5 10 15
 Asp Ile Ile His Ala Ile Asp Glu Tyr Gln Lys Gly Val Ile Ala Val
 20 25 30
 Val Asp Asp Asp Asn Lys Leu Ile Gly Ile Val Thr Asp Gly Asp Ile
 35 40 45
 Arg Lys Ala Ile Leu Tyr Gly Glu Leu Ser Ile Glu Lys Ile Ile Asn
 50 55 60
 Lys Arg Pro Val Thr Phe Gln Tyr Gly Ser Asn Gln Arg Ser Ile Ile
 65 70 75 80
 Asn Lys Leu Leu Glu Ile Lys Ser Ser Leu Ile Pro Leu Ile Glu Lys
 85 90 95
 Asp Gly Thr Phe Val Asp Phe Tyr Phe Leu Gly Asn Asn Tyr Lys His
 100 105 110
 Tyr Asn Ser Thr Lys Val Val Ile Met Ala Gly Gly Leu Gly Ser Arg
 115 120 125
 Leu Gly Glu Leu Thr Glu Asn Thr Pro Lys Pro Met Leu Lys Ile Gly
 130 135 140
 Gly Tyr Pro Ile Leu Glu His Ile Leu Lys Ser Phe Arg Glu Cys Gly
 145 150 155 160
 Phe Val Asp Phe Ile Phe Cys Val Asn Tyr Lys Ser Glu Val Ile Gln
 165 170 175
 Glu Tyr Phe Gln Ala Gly Glu Lys Trp Asn Val Asn Ile Glu Tyr Val
 180 185 190
 Lys Glu Asn Lys Arg Leu Gly Thr Gly Gly Ala Leu Ser Leu Leu Asn
 195 200 205
 Ala Met Val Asp Gly Asp Phe Phe Val Ile Asn Gly Asp Val Leu Ser
 210 215 220
 Thr Leu Asn Tyr Asp Glu Phe Leu Tyr Lys His Lys Asn Asp Gln Ser
 225 230 235 240
 Val Ala Ser Met Cys Leu His Lys Met Asp Tyr Gln Ile Pro Tyr Gly
 245 250 255

Val Ile Lys Thr Asp Glu Lys Ser Thr Ile Val Asp Ile Val Glu Lys
 260 265 270
 Pro Thr Phe Tyr Tyr Tyr Ile Asn Thr Gly Ile Tyr Val Leu Asn Ser
 275 280 285
 Cys Val Leu Ser Tyr Ile Pro Arg Asp Thr Phe Tyr Asp Leu Pro Met
 290 295 300
 Leu Phe Lys Asp Leu Lys Glu Lys Ser Met Leu Ile Lys Gly Tyr Met
 305 310 315 320
 Thr Ser Asp Phe Trp Met Asp Ile Gly Arg Lys Glu Asp Tyr Trp Gly
 325 330 335
 Ile Lys Lys Asn Phe Glu Leu
 340

<210> 7043
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 7043

Leu Met Lys Asn Leu Val Ala Leu Phe Thr Val Phe Tyr Ser Gly Ala
 1 5 10 15
 Glu Cys Phe Leu Lys Asp Phe Leu Ser Ser Leu Lys Glu Gln Ser Tyr
 20 25 30
 Lys Glu Phe Asp Leu Ile Ile Val Asn Asp Gly Phe Glu Val Gly Glu
 35 40 45
 Phe Glu Asn Leu Leu Cys Asn Leu Asn Val Val Glu Ile Lys Phe Ser
 50 55 60
 Ser Thr Val Ser Lys Asn Arg Glu Tyr Gly Leu Asn Tyr Ile Lys Arg
 65 70 75 80
 Ala Gly Tyr Lys Tyr Leu Ile Leu Cys Asp Val Asp Asp Phe Phe Ser
 85 90 95
 Arg Lys Arg Val Glu Ile Ser Leu Asn Met Leu Arg Glu Phe Asp Val
 100 105 110
 Val Val Asn Asp Val Asp Ile Val Ser Asn Arg Asn Glu Ile Leu Ile
 115 120 125
 Asn Asn Tyr Phe Ser Arg Ser Leu Asn Ser Ser Thr Asn Ile Asp Leu
 130 135 140
 His Phe Ile Lys Glu Lys Asn Leu Leu Gly Phe Ser Asn Thr Ala Ile
 145 150 155 160
 Lys Thr Asp Leu Phe Asp Ser Ile Asn Phe Pro Thr Asn Leu Glu Ile
 165 170 175
 Val Asp Trp Tyr Phe Phe Thr Ile Ile Leu Lys Lys Glu Pro Lys Val
 180 185 190
 Gly Phe Ile His Gln Ala Leu Thr Tyr Tyr Arg Gln His Ser Asn Asn
 195 200 205
 Leu Ile Gly Ile Gly Asp Tyr Pro Ile Glu Phe Phe Lys Lys Met Leu
 210 215 220
 Asp Leu Lys Ile Ser His Tyr Ser Tyr Leu Ser Asp Ile Asp Leu Asp
 225 230 235 240
 Tyr Lys Ser Leu Tyr Ile Gln Tyr Leu Asp Met Lys Arg Lys Ser Asp
 245 250 255
 Met Asp Ile Ile Met Gly Ile Asp Lys Asn Lys Lys Ile Asn Lys Tyr
 260 265 270
 Pro Leu Trp Trp Glu Asn Ile Lys Leu
 275 280

<210> 7044
 <211> 238
 <212> PRT

<213> B.fragilis

<400> 7044

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Leu Met Ile Asp Phe Phe Ile Ser Ile Leu Leu Tyr Phe Tyr Ile Leu
1           5           10           15
Leu Phe Arg Arg Gly Ile Arg Thr Ala Phe Pro Cys Leu Val Ser Pro
          20           25           30
Leu Phe Val Phe Asn Lys Thr Lys Lys Val Thr Asp Val Ser Leu Gly
          35           40           45
Lys Ser Phe Ile Gly Arg Asp Val Met Ile Ser Asp Gly Cys His Phe
          50           55           60
Tyr Asp Thr Pro Ile Val Phe Gly Lys Val Lys Ile Gly Arg Tyr Thr
65           70           75           80
Ser Ile Asn Gly Pro Gly Thr Arg Ile Cys Ala Phe Ile His Glu Ile
          85           90           95
Asn Ile Gly Ala Phe Cys Ser Ile Ala Ser Asn Val Val Ile Gln Glu
          100          105          110
Tyr Asn His Cys Val Asn His Val Thr Thr Tyr Asn Ile Tyr His His
          115          120          125
Ile Leu Asn Leu Lys Asp Ser Ile Ser Ile Ser Asn Thr Ser Lys Gly
          130          135          140
Pro Ile Thr Ile Glu Asp Asp Val Trp Ile Gly Ser Asn Val Val Ile
145          150          155          160
Leu Ser Gly Val Lys Ile Gly Arg Gly Ser Val Ile Gly Ala Gly Ala
          165          170          175
Val Val Val Asn Asp Val Pro Pro Tyr Ser Val Ala Val Gly Asn Pro
          180          185          190
Ala Arg Ile Val Lys Lys Arg Phe Asp Asp Glu Thr Ile Ser Tyr Ile
          195          200          205
Glu Lys Thr Arg Trp Trp Thr Trp Ser Ile Glu Glu Ile Lys Arg Lys
          210          215          220
Glu Asp Phe Phe Arg Lys Glu Phe Ile Lys Ser Glu Lys Gly
225          230          235

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<210> 7045

<211> 647

<212> PRT

<213> B.fragilis

<400> 7045

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Gln Ile Ile Glu His Ala Asp Gly Ile Phe Thr Val Phe Gly Gln Gln
1           5           10           15
Gln Glu Arg Leu Val Ala Val Ser Ile Asp Gln Cys Leu Leu Leu Leu
          20           25           30
Cys Cys Gly Asp Asp Phe His Arg Ile Glu Ala Val Glu Thr Ala Gln
          35           40           45
Arg Phe Glu Thr Tyr Gln Leu Gly Leu Tyr Arg Leu Ser Gly Arg Ser
          50           55           60
Gly Phe Thr Gly Cys Phe Pro Leu Arg Ile Arg Leu Ile Arg Leu Leu
65           70           75           80
Arg Ile Val Tyr Phe Arg Ile Gly Pro Ser Arg Gly Val Val Gly Glu
          85           90           95
Val Val His Ile Ile Ile Ser Gly Ile Ser Ala Cys Val Lys Ser Asp
          100          105          110
Ala Ser Val Phe Thr Val Asp Phe His Arg Lys Tyr Ile Val Tyr Arg
          115          120          125
Phe Ala Gly Arg Cys Ile Asp His Asn Asn Pro Phe Leu Phe Gly Ile
          130          135          140
Gly Val Thr Ser Ala Pro Gly Asp Ile Ser Phe Arg Tyr Gly Gly Gly

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145		150		155		160
Glu Cys Ser Arg Asn Asn Gly Ala Met Val Pro Gln Cys Val Gly Cys						
	165		170		175	
Pro Val Val Phe Ala Val Lys Arg Gly Phe Gly Gly Arg Ser Leu Glu						
	180		185		190	
Ser Leu Pro Glu Gly Leu Thr Ser Leu Thr Val Pro Ile Lys Glu Phe						
	195		200		205	
Leu His Asn Val Tyr Leu Ile Thr Met Cys Lys Phe Thr Lys Asn His						
	210		215		220	
Leu Trp Ile Trp Gln Ile Gly Arg Phe Phe Ile Ile Asn Arg Phe Cys						
	225		230		235	
Pro Lys Ala Cys Val Val Ile Gly Tyr Ala Ile Ser Asp Val Ser Leu						
	245		250		255	
Arg Leu Ser Gly Arg Ile Phe Leu Trp Glu Lys Tyr Phe Leu Tyr Tyr						
	260		265		270	
Leu Cys Ala Leu Lys Met Asn Lys Pro Tyr Thr Met Asn Arg Lys Gln						
	275		280		285	
Ile Leu Cys Ile Ser Leu Leu Ala Phe Ser Leu Cys Ala Cys Gln Asp						
	290		295		300	
Asp Asp Thr Ala Asp Ile Leu Asp Ala Phe Gly Thr Pro Pro Ala Leu						
	305		310		315	
Thr Lys Met Thr Ala Gln Glu Phe Leu Asp Gln Gly Glu Gln Met Phe						
	325		330		335	
Glu Asp Gly Glu Ser Val Asp Glu Ile Val Ser Ala Asp Arg Ala Phe						
	340		345		350	
Tyr Val Asn Asn Pro Phe Asn Val Ser Met Ala Asp Gly Lys Leu Arg						
	355		360		365	
Leu Phe Asn Gly Met Ala His Asp Phe Lys Glu Val Ser Leu Trp Leu						
	370		375		380	
Thr Met Pro His Leu Arg Asp Thr Ile Gln Leu Met Gln Phe Glu Glu						
	385		390		395	
Val Pro Gly Phe Tyr Asn Ile Lys Leu Asp Ser Pro Leu Lys Met Gly						
	405		410		415	
Glu Val Val Tyr Ala Ser Lys Ser Gly Lys Pro Val Arg Val Asn Asn						
	420		425		430	
Leu Ala Leu Leu Ser Pro Asp Gln Tyr Glu Leu Leu Leu Ser Cys Asn						
	435		440		445	
Asp Ser Val Phe Asp Met Leu Lys Thr Ile Lys Met Lys Thr Arg Ile						
	450		455		460	
Gln Met Gly Lys Tyr Gly Ser Gly Asn Trp Gly Val Met Thr Ala Asn						
	465		470		475	
Ala Ala Arg Tyr Tyr Ala Thr Ser Ala Val Asn Met Ala Val Met Phe						
	485		490		495	
Ser Ser Glu Ile Phe Arg Asp Ser Leu Met Asn Tyr Lys Gly Ser Ile						
	500		505		510	
His Asn Asp Ala Gly Lys Glu Ile Asp Arg Glu Gly Leu Leu Asn Ser						
	515		520		525	
Ile Leu Asn Lys Gln Ser Leu Val Phe Gly Val Val Thr Gly Ser Gly						
	530		535		540	
Ile Ala Gly Leu Gly Gly Gly Asn Ala Leu Gly Leu Arg Glu Glu Tyr						
	545		550		555	
Leu Ala Gly Phe Phe Tyr Gln Asn Arg Val Ala Ile Asp Cys Asn Trp						
	565		570		575	
Val Leu His Val Trp Ile His Glu Leu Gly His Cys Leu Gly Tyr Gly						
	580		585		590	
His Ser Ser Ser Leu Cys Tyr Gly Ser Val Pro Asp Glu Ile Val Pro						
	595		600		605	
Lys Val Tyr Arg Tyr Met Met Lys His Arg Met Leu Pro Tyr Ile Ile						
	610		615		620	

Asn Pro Phe Lys Ser Tyr Asn Asp Tyr Asn Pro Gly Ile Asn Asp Ala
 625 630 635 640
 Asp Asn Pro Asp Ile Glu Leu
 645

<210> 7046
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 7046
 Ile Met Thr Glu Leu Lys Glu Gln Leu Ser Leu Leu Gly Arg Lys Thr
 1 5 10 15
 Glu Tyr Lys Gln Asp Tyr Ala Pro Glu Val Leu Glu Ala Phe Asp Asn
 20 25 30
 Lys His Pro Glu Asn Asp Tyr Trp Val Arg Phe Asn Cys Pro Glu Phe
 35 40 45
 Thr Ser Leu Cys Pro Ile Thr Gly Gln Pro Asp Phe Ala Glu Ile Arg
 50 55 60
 Ile Ser Tyr Leu Pro Asp Val Lys Met Val Glu Ser Lys Ser Leu Lys
 65 70 75 80
 Leu Tyr Leu Phe Ser Phe Arg Asn His Gly Ala Phe His Glu Asp Cys
 85 90 95
 Val Asn Ile Ile Met Lys Asp Leu Ile Arg Leu Met Asp Pro Lys Tyr
 100 105 110
 Ile Glu Val Thr Gly Ile Phe Thr Pro Arg Gly Gly Ile Ser Ile Tyr
 115 120 125
 Pro Tyr Ala Asn Tyr Gly Arg Pro Gly Thr Lys Tyr Glu Glu Met Ala
 130 135 140
 Thr His Arg Leu Met Asn His Glu
 145 150

<210> 7047
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 7047
 Phe Leu Gly Glu Leu Thr Gly Asn Ser Ser Ser Asn Lys Gln Glu Tyr
 1 5 10 15
 Gln Leu Leu Lys Asp Asn Leu Val Arg Ser Tyr Asn Lys Ala Leu Lys
 20 25 30
 Lys Asn Ala Pro Tyr Ser Ile Phe Ala Ile Lys Asn Gly Pro Lys Ser
 35 40 45
 His Ile Gly Arg His Leu Met Thr Ser Phe Leu Ser Met Lys Gly Leu
 50 55 60
 Thr Glu Leu Thr Asn Val Val Gly Asn Trp Ser Asp Lys Arg Ala Ser
 65 70 75 80
 Ala Val Ala Arg Thr Thr Tyr Thr His Gln Ile Thr Ala Ile Pro Asp
 85 90 95
 His Tyr Phe Ala Leu Val Ser Arg Tyr Tyr Ala Tyr Asp Pro Ile Ser
 100 105 110
 Lys Glu Met Ile Ala Leu Lys Asp Glu Thr Asn Pro Ile Glu Glu Trp
 115 120 125
 Gln His Ile Glu Gln Leu Lys Gly Ser Ala Glu Gly Ser Ile Arg Tyr
 130 135 140
 Pro Ala Trp Asn Gly Ile Ile Ser Gln Glu Val Leu Asp Tyr Leu Ser
 145 150 155 160
 Ser Tyr Ile Asn Arg Arg Ile

165

<210> 7048
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 7048

Phe Leu Gly Glu Leu Thr Gly Asn Ser Ser Ser Asn Lys Gln Glu Tyr
 1 5 10 15
 Gln Leu Leu Lys Asp Asn Leu Val Arg Ser Tyr Asn Lys Ala Leu Lys
 20 25 30
 Lys Asn Ala Pro Tyr Ser Ile Phe Ala Ile Lys Asn Gly Pro Lys Ser
 35 40 45
 His Ile Gly Arg His Leu Met Thr Ser Phe Leu Ser Met Lys Gly Leu
 50 55 60
 Thr Glu Leu Thr Asn Val Val Gly Asn Trp Ser Asp Lys Arg Ala Ser
 65 70 75 80
 Ala Val Ala Arg Thr Tyr Thr His Gln Ile Thr Ala Ile Pro Asp
 85 90 95
 His Tyr Phe Ala Leu Val Ser Arg Tyr Tyr Ala Tyr Asp Pro Ile Ser
 100 105 110
 Lys Glu Met Ile Ala Leu Lys Asp Glu Thr Asn Pro Ile Glu Glu Trp
 115 120 125
 Gln His Ile Glu Gln Leu Lys Gly Ser Ala Glu Gly Ser Ile Arg Tyr
 130 135 140
 Pro Ala Trp Asn Gly Ile Ile Ser Gln Glu Val Leu Asp Tyr Leu Ser
 145 150 155 160
 Ser Tyr Ile Asn Arg Arg Ile
 165

<210> 7049
 <211> 433
 <212> PRT
 <213> B.fragilis

<400> 7049

Met Phe Asn Trp Thr Tyr Leu Asp Gly Leu Ser Asn Tyr Asn Ile Ile
 1 5 10 15
 Ser Arg Tyr Ser Phe Asn Ile Ile Asn Phe Met Lys Ile Pro Phe Ser
 20 25 30
 Pro Pro Tyr Ile Asp Glu Ala Val Ile Asn Glu Val Val Asp Ser Leu
 35 40 45
 Arg Ser Gly Trp Ile Thr Ser Gly Pro Lys Val Lys Ala Leu Glu Glu
 50 55 60
 Glu Ile Lys Ser Phe Ser Gly Ala Lys Glu Val Leu Cys Val Asn Ser
 65 70 75 80
 Trp Thr Ser Gly Ala Ile Met Met Leu Arg Trp Leu Gly Val Lys Glu
 85 90 95
 Gly Asp Glu Val Ile Val Pro Ala Tyr Thr Tyr Ser Ala Thr Ala Leu
 100 105 110
 Ala Val Leu His Ala Gly Ala Lys Pro Val Met Val Asp Ser Gly Thr
 115 120 125
 Asp Phe Asn Ile Ser Val Glu Ala Val Arg Lys Ala Ile Thr Pro Lys
 130 135 140
 Thr Lys Ala Ile Ile Pro Val Asp Ile Ala Gly Phe Pro Cys Asp Tyr
 145 150 155 160
 Glu Arg Ile Met Ala Leu Val Gln Glu Pro Glu Met Val Lys Leu Phe
 165 170 175

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Arg Ser Glu Ser Pro Val Gln Glu Lys Leu Gly Arg Ile Leu Val Met
      180      185      190
Asn Asp Ala Ala His Ser Leu Gly Ala Arg Tyr Ser Asn Arg Gln Arg
      195      200      205
Thr Gly Cys Glu Thr Asp Val Ala Ile Phe Ser Leu His Ala Val Lys
      210      215      220
Asn Val Thr Thr Ala Glu Gly Gly Ala Ile Cys Leu Asn Leu Pro Lys
      225      230      235      240
Pro Phe Asp Asn Thr Glu Leu Tyr Lys Glu Leu Arg Met Thr Ser Leu
      245      250      255
Asn Cys Gln Thr Lys Asp Ala Phe Ser Lys Ser Lys Ala Gly Gly Trp
      260      265      270
Arg Tyr Asp Ile Val Gly Phe Gly Met Lys Ile Asn Met Ala Asp Val
      275      280      285
Asn Ala Ala Ile Gly Leu Ala Gln Ile Arg Glu Tyr Pro Glu Leu Leu
      290      295      300
Lys Glu Arg Lys Arg Val Phe Asn Ala Tyr Ser Asp Ala Phe Ser Ala
      305      310      315      320
Cys Asp Trp Ala Ile Val Pro Pro Ser Val Asp Gly Glu Lys Glu Ser
      325      330      335
Ser Tyr His Ile Tyr Ala Leu Arg Ile Lys Asp Phe Thr Glu Glu Gln
      340      345      350
Arg Asp Arg Met Ile Asp Glu Ile Ala Lys Ser Glu Val Ala Val Asn
      355      360      365
Val His Phe Ile Pro Met Pro Met Leu Ser Phe Phe Lys Ser Met Gly
      370      375      380
Tyr Asp Ile Lys Asp Tyr Pro Gln Ala Tyr Gln Asn Phe Lys Ser Glu
      385      390      395      400
Ile Ser Leu Pro Ile Tyr Pro Gln Leu Asp Ser Glu Lys Leu Asn Phe
      405      410      415
Ile Ile Glu Thr Val Lys Ala Ala Tyr Ala Thr Val Ile Ala Glu Asn
      420      425      430
Arg

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<210> 7050

<211> 481

<212> PRT

<213> B.fragilis

<400> 7050

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Phe Ile Asp Cys Met Tyr Lys Lys Gln Ser Phe Trp Ser Asn Ile Ile
1      5      10      15
Lys Gln Ser Ser Trp Tyr Tyr Leu Cys Ser Ala Leu Asn Asn Gly Leu
      20      25      30
Ala Ile Leu Leu Leu Pro Phe Leu Ser Arg Arg Leu Ser Thr Glu Glu
      35      40      45
Tyr Gly Ile Ile Gln Leu Ser Thr Gly Ile Gly Leu Phe Leu Pro Met
      50      55      60
Val Phe Ser Cys Gly Ile Asp Arg Ala Ile Tyr Arg Phe Phe Asn Glu
      65      70      75      80
Cys Arg Thr His Lys Ala Lys Lys Glu Leu Ile Ser Thr Val Tyr Trp
      85      90      95
Phe Val Val Ile Val Gly Met Val Phe Leu Thr Ile Phe Val Leu Ser
      100      105      110
Ser Ser Leu Trp Phe Lys Ser Val Val His Ile Ser Pro Tyr Pro Tyr
      115      120      125
Val Leu Leu Phe Ala Tyr Pro Tyr Leu Phe Ala Glu Leu Ser Thr Ile
      130      135      140

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Gly Gln Ser Tyr Phe Gln Gln Val Phe Asp Leu Lys Arg Met Thr Ile
 145 150 155 160
 Ile Glu Val Ile Gly Thr Ala Ile Asn Leu Leu Ser Ile Tyr Phe
 165 170 175
 Val Val Thr Trp Asp Asp Gly Ala Leu Ala Arg Leu Val Ala Ile Thr
 180 185 190
 Ile Ser Phe Phe Phe Lys Ser Ser Ile Tyr Ser Tyr Tyr Leu Leu Lys
 195 200 205
 Arg Asn Leu Leu Val Phe Arg Cys Asn Tyr Ile Lys Val Trp Glu Tyr
 210 215 220
 Val Lys Phe Ser Leu Pro Leu Leu Pro Asn Ser Ile Ser Leu Trp Leu
 225 230 235 240
 Ser Arg Thr Phe Asp Arg Ile Leu Ile Ser Tyr Tyr Cys Gly Thr Ala
 245 250 255
 Ile Ala Gly Val Tyr Ser Thr Ala Val Gln Val Ser Phe Val Leu Tyr
 260 265 270
 Phe Ile Gln Asp Ser Val Thr Gln Ala Phe Gly Pro Met Gln Ile Arg
 275 280 285
 Leu Phe Ile Gln Asn Lys Val Glu Ala Val Arg Cys Leu Lys Ile Met
 290 295 300
 Ser Lys Ile Phe Tyr Ile Ile Met Leu Val Ser Val Val Phe Leu Ser
 305 310 315 320
 Ser Phe Cys Lys Glu Ile Met Asn Phe Val Leu Asp Glu Lys Phe Val
 325 330 335
 Pro Pro Val Ile Val Val Ala Leu Leu Ser Ser Val Tyr Ile Tyr Gln
 340 345 350
 Ala Gln Tyr Arg Leu Phe Ser Asp Ile Leu Ile Tyr His Lys Lys Asn
 355 360 365
 Lys Tyr Phe Met Tyr Ala Gly Ile Ile Gln Ala Val Ile Ser Leu Leu
 370 375 380
 Ile Asn Ile Val Phe Ile Pro Lys Tyr Gly Tyr Val Val Ala Gly Trp
 385 390 395 400
 Ser Ser Leu Ile Ala Val Met Leu Tyr Thr Leu Ile Ile Ala Tyr Tyr
 405 410 415
 Ser Val Lys Ile Glu Asn Leu Ser Leu Asp Tyr Ser Phe Tyr Ile Lys
 420 425 430
 Tyr Thr Leu Ile Leu Met Leu Ala Leu Phe Leu Leu Leu Asn Pro Leu
 435 440 445
 Phe Asn Met Asp Met His Ile Leu Leu Lys Leu Leu Val Ser Gly
 450 455 460
 Ile Leu Val Phe Gly Val Arg Asp Val Phe Lys Leu Lys Lys Asn Ile
 465 470 475 480
 Val

<210> 7051

<211> 246

<212> PRT

<213> B.fragilis

<400> 7051

Phe Leu Met Cys Glu Leu Gly Tyr Phe Ile Ser Ser Tyr Arg Leu Ser
 1 5 10 15
 Pro Tyr Lys Phe Arg Phe Phe Pro Ile Ser Asn Tyr Arg Ile His Arg
 20 25 30
 Ser Gly Met Ile Phe Leu Leu Tyr Phe Cys Cys Lys Pro Lys Lys Asn
 35 40 45
 Ile Met Lys Lys Ile Leu Phe Ile Leu Phe Thr Val Gln Phe Ile Leu
 50 55 60

Ile Pro Arg Ile Thr Gly Ser Tyr Gly Ala Asn Ser Ile Gly Asn Asn
 65 70 75 80
 His Gly His Ser Val Thr Asn Gln Gly Lys Lys Thr Ile Lys Lys Asp
 85 90 95
 Ile Phe Gly Asp Thr Val Ile Glu Asp Asn His Gly Asn Arg Lys Thr
 100 105 110
 Ile Lys Lys Asp Ile Phe Gly Asp Thr Val Ile Glu Asp Asn Arg Gly
 115 120 125
 Asn Arg Lys Thr Ile Lys Lys Asp Ile Phe Gly Asp Thr Val Ile Glu
 130 135 140
 Asp Asn Arg Gly Asn Arg Lys Thr Ile Lys Lys Asp Ile Phe Gly Asp
 145 150 155 160
 Thr Val Ile Glu Asn Asn Cys Gly Asn Arg Lys Thr Ile Lys Lys Asp
 165 170 175
 Ile Phe Gly Asp Thr Val Ile Glu Asp Asn Arg Gly Asn Arg Lys Ser
 180 185 190
 Ile Lys Lys Asp Ile Phe Gly Asn Thr Val Ile Glu Asn Asn Lys Gly
 195 200 205
 Tyr Lys Lys Thr Ile Lys Thr Asp Ile Phe Gly Asn Lys Ile Ile Glu
 210 215 220
 Asp Asn His Gly Lys Lys Gln Ile Ile Lys Lys Asp Ile Phe Gly Asn
 225 230 235 240
 Val Ile Ile Glu Asn Tyr
 245

<210> 7052

<211> 236

<212> PRT

<213> B.fragilis

<400> 7052

Asn Phe Ile Leu Gly Gly Phe Asp Lys Met Ile Ala Ile Ile Pro Ala
 1 5 10 15
 Arg Gly Gly Ser Lys Gly Leu Pro Gly Lys Asn Ile Arg Lys Met Cys
 20 25 30
 Gly Lys Pro Leu Ile Ala Tyr Thr Ile Glu Cys Ala Leu Lys Ser Lys
 35 40 45
 Tyr Ile Asp Arg Val Ile Val Ser Thr Asp Asp Asp Glu Ile Ala Arg
 50 55 60
 Ile Ser Leu Lys Phe Gly Ala Glu Val Pro Phe Met Arg Pro Ser His
 65 70 75 80
 Leu Ala Ser Asp Thr Val Leu Ala Val Glu Asn Tyr Leu Tyr Thr Ile
 85 90 95
 Asp Arg Ile Glu Lys Glu Glu Asn Val Ile Ile Asp Arg Phe Ile Val
 100 105 110
 Leu Gln Pro Thr Ser Pro Leu Arg Ser Val Glu Asp Ile Asp Cys Ala
 115 120 125
 Val Glu Leu Phe Lys Lys Lys Asn Ala Asp Ser Val Val Ser Tyr Thr
 130 135 140
 Lys Glu Glu His Pro Ile Tyr Trp His Lys Asn Ile Asp Asn Asp Asn
 145 150 155 160
 Arg Leu Ile Asn Ile Phe Asp Asp Lys Ile Val Asn Arg Gln Glu Leu
 165 170 175
 Arg Thr Thr Tyr Tyr Pro Asn Gly Ala Ile Tyr Ile Phe Lys Ser Ser
 180 185 190
 Leu Ile Arg Asn Lys Lys Tyr Tyr Thr Asp Asn Ser Phe Ala Tyr Val
 195 200 205
 Met Pro Arg Asp Arg Ser Val Asp Ile Asp Phe Leu Glu Asp Phe Leu
 210 215 220

Tyr Ala Glu Tyr Leu Leu Lys Lys Cys Ser Met Lys
 225 230 235

<210> 7053
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7053
 Gly Ile Ile Leu Leu Cys Met Ser His Ser Tyr Asn Ser Leu Tyr Asn
 1 5 10 15
 Tyr Leu Cys Leu Leu Tyr Ser Gln Pro Thr Tyr Glu Asp Lys Lys Asp
 20 25 30
 Lys Gln Lys Ile Phe Arg Leu Tyr Asn Asp Leu Phe Ser Glu Gln Lys
 35 40 45
 Glu Tyr Pro Asn Ala Tyr Pro Cys Ala Ile Met Gly Asp Gly
 50 55 60

<210> 7054
 <211> 272
 <212> PRT
 <213> B.fragilis

<400> 7054
 Lys Ala Ile Arg Ser Ser Tyr Asn Lys Tyr Gln Ala Phe Val Asp Val
 1 5 10 15
 Tyr Gln Leu Phe Leu His Pro Ala Gly Lys Leu His Arg Pro His Leu
 20 25 30
 Phe Ser Val Phe Val Gln Gln His Asn His Val Ser Arg Leu Lys Gly
 35 40 45
 Phe Gly Tyr Gln Phe Ala Phe Leu Leu Phe Leu Leu Leu Gly Cys Gln
 50 55 60
 Ala Phe Arg Ile Phe Gln Phe Trp Asn His Leu His Ile Glu Arg Asn
 65 70 75 80
 Glu Val Phe Gly Thr Leu Tyr Val Ile Val Asp Cys Ser Asp Ile Met
 85 90 95
 Leu Leu Tyr Ser Pro Ser Tyr Asp Asp Lys Gly Cys Phe His Ser Ser
 100 105 110
 Ala Asn Ser Cys Leu Leu His Lys Asn Lys Lys Lys Ile Leu Phe Leu
 115 120 125
 Ala Leu Asn Thr Tyr Leu Cys Val Ser Ile Ile Leu Val Ile Met Lys
 130 135 140
 Lys Arg Val Leu Leu Trp Met Ala Gly Leu Val Phe Ala Val Thr Ser
 145 150 155 160
 Leu Phe Ala Gln Asp Ile Pro Val Gly Val Val Val Ala Phe Lys Lys
 165 170 175
 Gly Asn Ser Gln Glu Leu Asn Arg Tyr Leu Gly Glu Lys Val Asn Leu
 180 185 190
 Val Ile Gln Asn Arg Ser Glu Ser Val Asp Arg Gln Ala Ala Glu Gly
 195 200 205
 Thr Leu Ala Ala Phe Phe Ser Ser Asn Lys Val Ser Gly Phe Asn Val
 210 215 220
 Asn His Glu Gly Lys Arg Asp Glu Ser Ser Phe Ile Ile Gly Thr Leu
 225 230 235 240
 Thr Thr Ala Asn Gly Asn Phe Arg Ile Asn Cys Phe Phe Arg Arg Val
 245 250 255
 Gln Asn Lys Tyr Leu Ile Asn Gln Ile Arg Ile Asp Lys Thr Asn Glu
 260 265 270

<210> 7055
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 7055

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Lys Gly Lys Arg Ala Met Glu Lys Met Asn Ile Thr His Lys Ile Val
1      5      10      15
Ala Met Gln Pro Glu Leu Glu His Phe Ala Tyr Lys Leu Thr Ala Asp
      20      25      30
Arg Glu Ser Ala Asn Asp Leu Val Gln Asp Cys Leu Leu Lys Ala Leu
      35      40      45
Asp Asn Lys Glu Lys Phe Val His Thr Gln Asn Phe Lys Gly Trp Met
      50      55      60
Tyr Thr Ile Met Arg Asn Ile Phe Ile Asn Asn Tyr Arg Lys Ser Leu
      65      70      75      80
Arg Glu Val Asp Met Thr Asp Ser Thr Tyr Asn Leu Tyr Ala Gln Thr
      85      90      95
Met Thr Glu Gly Glu Glu Gly Asn Arg Phe Glu Thr Ile Tyr Asp Leu
      100     105     110
Lys Glu Leu Tyr Lys Val Ile Asn Ala Val Pro Glu Asp Leu Lys Lys
      115     120     125
Pro Phe Met Met Phe Val Ala Gly Phe Lys Tyr Arg Glu Ile Ala Glu
      130     135     140
Lys Met Asp Leu Pro Val Gly Thr Ile Lys Ser Arg Leu Phe Leu Ile
      145     150     155     160
Arg Lys Arg Leu Gln Gln Asp Leu Lys Asp Phe Ser
      165     170

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<210> 7056
 <211> 352
 <212> PRT
 <213> B.fragilis

<400> 7056

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Arg Phe Lys Arg Arg Lys Leu Ser Val Ser Ser Val Val Arg Lys Gln
1      5      10      15
Ser Ser Met Asn Leu Lys Phe Leu Tyr Leu Leu Leu Ile Ser Ala
      20      25      30
Leu Cys Ile Ser Cys Ser Lys Asp Glu Glu Pro Ser Asp Lys Gly Ser
      35      40      45
Thr Ser Pro Gln Glu Pro Val Tyr Thr Thr Phe Thr Asp Ala Gly Glu
      50      55      60
Val Val Val Pro Gly Val Leu Pro Ala Asn Phe Thr Pro Arg Ser Val
      65      70      75      80
Arg Val Lys Gly Asp Thr Leu Phe Val Ala Asn Thr Asn Ala Ala Asp
      85      90      95
Arg Ser Val Leu Leu Leu Asn Leu Thr Thr Gly Glu Leu Ile Gly Arg
      100     105     110
Ile Asp Ser Trp Val Arg Lys Gly Val Lys Glu Thr Phe Asn Ala Glu
      115     120     125
Ile Gly Asp Met Ala Val Ser Asp Arg Tyr Ile Phe Val Gly Met Tyr
      130     135     140
Asn Ser Arg Ile Asn Ile Phe Asp Arg Arg Thr Leu Gln Phe Val Asn
      145     150     155     160
Ala Ile Gly Arg Ser Asp Gly Lys Trp Gly Asp Asp Ile Tyr Ser Met
      165     170     175
Thr His Cys Tyr Gly Leu Arg Glu Cys Gly Glu Arg Leu Met Val Arg
      180     185     190

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Asp Lys Asn Thr Ile Arg Gly Tyr Trp Ile Tyr Glu Ala Val Thr Glu
 195 / 200 205
 Pro Ala Phe Arg Val Pro Trp Ile Gly Lys Val Lys Val Pro Glu Gly
 210 215 220
 Val Gly Tyr Asp Tyr Gln Ala Arg Ile His Gly Met Ala Glu Tyr Asp
 225 230 235 240
 Gly Arg Met Tyr Leu Thr Asp Trp Tyr Asn Lys Ser Val Gln Val Phe
 245 250 255
 Thr Pro Ser Lys Met Glu Ile Val Phe Gly Glu Glu Thr His Ile Thr
 260 265 270
 Ser Asp Ala Val Phe Lys Tyr Asp Asp Ile Gln Pro Leu Gly Leu Leu
 275 280 285
 Ala Tyr Gly Gly Glu Leu Leu Met Ser Val Gln Lys Ser Gly Lys Ile
 290 295 300
 Gln Arg Tyr Asp Pro Glu Thr Gly Asp Leu Leu Gly Val Leu Ala Glu
 305 310 315 320
 Phe Pro Gly Lys Glu Ile Gly Arg Met Glu Ile Ala Arg Gly Met Leu
 325 330 335
 Tyr Tyr Ile Asp Leu Lys Ala Gly Lys Leu Met Lys Ala Lys Gly Glu
 340 345 350

<210> 7057

<211> 283

<212> PRT

<213> B.fragilis

<400> 7057

Leu Met Lys Ser Cys Ser Met Leu Leu Pro Asp Thr Val Ala Gly Gly
 1 5 10 15
 Lys Thr Gly Ser Ile Leu Val Arg His Gly Pro Ser Thr His Ala Leu
 20 25 30
 Thr Ser Pro Phe Ala Glu Ala Asp Thr Val Gly Gly Lys Lys Leu Asn
 35 40 45
 Gln Met Lys Arg Ile Val Phe Leu Met Leu Ser Leu Gly Met Ala Val
 50 55 60
 Thr Leu His Ala Gln Trp Thr Ala Lys Asp Ser Val Asn Leu Gln Arg
 65 70 75 80
 Ile Leu Asn Gly Lys Glu Asp Ile Lys Leu Asn Met Asp Ala Val Lys
 85 90 95
 Gln Ile Asp Phe Asn Ser Ser Pro Thr Val Pro Lys Met Ser Lys Glu
 100 105 110
 Arg Pro Gly Leu Arg Leu Asp Glu Thr Leu Pro Gln Val Leu Glu Lys
 115 120 125
 Lys Lys Val Val Leu Thr Leu Arg Pro Tyr Thr Ala Asn Thr Lys Tyr
 130 135 140
 Asn Trp Asp Pro Ile Tyr Gln Lys Lys Ile Arg Val Asp Ala Asp Thr
 145 150 155 160
 Trp Arg Gly Asp Pro Phe Val Glu Leu Tyr Gln Thr Val Pro Ser Asn
 165 170 175
 Trp Ala Lys Asn Val Tyr Asp Lys Gly Ile Arg Ser Ser Tyr Glu Glu
 180 185 190
 Ile Arg Ser Ser Gly Leu Arg His Asn Leu Phe Gly Glu Arg Ala Asn
 195 200 205
 Gly Met Met Val Pro Thr Gln Ser Met Val His Thr Ser Ala Met Lys
 210 215 220
 Leu Gly Lys Ser Gly Val Thr Val Asn Gly Gly Thr Ile Gly Gly Leu
 225 230 235 240
 Asp Leu Met Thr Ile Phe Thr Lys Asp Phe Trp Asp Lys Lys Gly Arg
 245 250 255

Asn Arg Arg Ser Arg Thr Leu Glu Val Leu Lys Ala Tyr Gly Asp Ser
 260 265 270
 Thr Thr Val Leu Leu Pro Glu Pro Ile Val His
 275 280

<210> 7058
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 7058
 Cys Ser Phe Gly Ser Met Lys Pro Leu Ile Leu Val Gly Gly Gly Gly
 1 5 10 15
 His Cys Lys Ser Val Ile Asp Val Ala Glu Ser Met Arg His Ser Ile
 20 25 30
 Leu Gly Ile Leu Asp Leu Pro Lys Asn Val Gly His Ser Ile Leu Gly
 35 40 45
 Tyr Pro Val Leu Gly Thr Asp Asp Asp Ile Pro Leu Phe Val Asn Gln
 50 55 60
 Ala Asp Phe Ile Val Thr Val Gly Phe Ile Lys Glu Ser Ser Leu Arg
 65 70 75 80
 Leu Lys Ile His Asp Lys Ile Arg Thr Ser Gly Gly His Leu Gly Thr
 85 90 95
 Leu Ile Ala Ser Thr Ala Tyr Val Ser Arg His Ala Gln Ile Gly Ala
 100 105 110
 Gly Thr Val Val Met His His Ala Phe Val Asn Ala Gly Ala Arg Ile
 115 120 125
 Gly Ser Gly Cys Ile Ile Asn Thr Phe Val Asn Val Glu His Asp Ala
 130 135 140
 Leu Ile Gly Asp Asn Cys His Ile Ser Thr Gly Ala Met Val Asn Gly
 145 150 155 160
 Asp Cys Lys Val Gly Asp Cys Ser Phe Leu Gly Ser Gln Ser Val Met
 165 170 175
 Val Asn Gly Thr Ser Ile Ile Ser Gly Cys Ile Ile Gly Ala Gly Ser
 180 185 190
 Val Val Arg Lys Asp Ile Leu Glu Lys Gly Ile Tyr Ser Gly Asn Pro
 195 200 205
 Ala Ile Leu Lys Met Lys
 210

<210> 7059
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 7059
 Asn Lys Lys Gly Lys Ile Met Ser Leu Glu Asp Ala Ile Met Gly Gly
 1 5 10 15
 Ile Val Phe Lys Gly Lys Lys Glu Gly Pro Lys Lys Asp Glu Asn Lys
 20 25 30
 Val Lys Thr Lys Ala Lys Lys Thr Thr Tyr Ile Lys Gly Thr His Gly
 35 40 45
 Ser Gly Ala Ala Lys Met Lys Ala Glu Ile Arg Arg Lys Arg Ala Asn
 50 55 60
 Arg His Lys Arg
 65

<210> 7060
 <211> 443

<212> PRT

<213> B.fragilis

<400> 7060

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Arg Lys Ile Leu Asn Tyr Asn Ile Met Glu Lys Ile Val Tyr Ile Val
1      5      10      15
His Ala Val Asp Thr Glu Gly Pro Leu Tyr Glu Ser Thr Glu Ala Thr
20     25     30
Phe Glu Arg Leu Lys Ser Ser Phe Asn Ile Glu Leu Glu Pro Thr Phe
35     40     45
Ala Asn Leu Gln Lys Leu Arg His Arg Glu Ile Phe Leu Asn Gly Leu
50     55     60
Glu Asp Lys Ile Val Glu Phe Leu Asp Pro Ser Leu Gln Asn Tyr Asn
65     70     75     80
Asp Ser Trp Asp Lys Ile Asp Leu Met Leu Ser Lys Ile Leu Ser Asn
85     90     95
Asp Phe Arg Phe Lys Phe Cys Asp Ser Phe Ser Gly Gly Trp Val Tyr
100    105    110
Asn Trp Phe Cys Leu Asp His Val Gly Tyr Asp Tyr Asn Pro Arg Arg
115    120    125
Arg Asp Met Gly Tyr His Asn Ile His Asp Arg Tyr Ile Glu Leu Leu
130    135    140
Asp Lys Tyr Gly Lys Tyr Lys Asp Asp Ile Gln Trp His Phe His Pro
145    150    155    160
Met Ser His Tyr Lys Glu Ala His Arg Ala Gly Lys Ser Tyr Glu His
165    170    175
Ser Glu Thr Leu Tyr Gln Ile Leu Ser Arg Arg Ile Ile Asp Arg Asn
180    185    190
Phe Phe Pro Ser Val Phe Arg Ala Gly Cys Val Thr Glu Arg Pro Asp
195    200    205
Ala Asn Trp Phe Leu Glu Gln Trp Ile Pro Phe Asp Cys Ser Asn Phe
210    215    220
Ala Val Glu Asn Glu Asn Lys Glu Gln Tyr Arg Asp Gln Arg Asn Gly
225    230    235    240
Gln Ala Gly Asp Trp Arg Arg Ala Pro Ser Asp Trp Arg Ile Tyr His
245    250    255
Pro Asp Phe Tyr Asp Tyr Gln Lys Glu Gly Cys Cys His Arg Ser Ile
260    265    270
Gly Arg Phe Leu Asn Ile Val Ser Arg Tyr Gly Asn Ile Thr Ser Tyr
275    280    285
Glu Ile Glu Lys Ala Phe Gln Arg Ala Asn Glu Gly Leu Pro Thr Leu
290    295    300
Leu Gly Ile Phe Asn His Asp Phe Arg Asn Met Gly Asn Glu Ile Glu
305    310    315    320
Tyr Phe Cys Asp Leu Leu Tyr Asp Ile Ser Arg Lys Tyr Asn Asn Val
325    330    335
Ser Phe Lys Phe Ala Thr Ala Lys Glu Ala Phe Asn Ala Val Leu Gln
340    345    350
Asn Lys Leu Ser Glu Phe Asp Leu Asn Val Arg Leu Lys Gly Asn Glu
355    360    365
Leu Tyr Val Asp Thr Ile Lys Gly Cys Val Phe Gly Pro Gln Pro Tyr
370    375    380
Leu Ala Ile Lys Thr Lys Ser Gly Lys Tyr Ile His Asp Asn Phe Asp
385    390    395    400
Phe Gly Leu Asp Gly Lys Ser Trp Ser Tyr Val Phe Asp Glu Asn Met
405    410    415
Ile Lys Phe Glu Asp Val Asp Thr Ile Gly Val Ala Ala Asn Asp Met
420    425    430
Cys Gly Gln Val Ser Leu Lys Cys Ile Lys Ala

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435

440

<210> 7061
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 7061

Val	Val	Phe	Phe	Ala	Phe	Val	Phe	Thr	Leu	Phe	Ser	Ser	Phe	Phe	Gly
1				5					10					15	
Pro	Ser	Phe	Phe	Pro	Leu	Lys	Thr	Ile	Pro	Pro	Ile	Ile	Ala	Ser	Ser
			20					25					30		
Lys	Leu	Ile	Ile	Phe	Pro	Phe	Leu	Phe	Tyr	Ile	Phe	Arg	Gly	Gln	Arg
		35					40					45			
Tyr	Ser	Phe	Ser	Val	Asn	Ser	Leu	Ser	Leu	Pro	Ala	Val	Thr	Thr	Lys
	50					55					60				
Asn	Gln	Ser	Met	Asn	Thr	Ser	Leu	Leu	Pro	Ala	Glu	Lys	Asp	Pro	Met
65					70					75					80
Gly	Ala	Ala	Ile	Ala	Asp	Phe	Tyr	His	Arg	Gln	Lys	Ala	Asp	Arg	Leu
				85					90					95	
Arg	Val	Phe	Ser	Ser	Gln	Phe	Asp	Glu	Asp	Glu	Ile	Pro	Val	Lys	Gln
			100					105						110	
Leu	Phe	Arg	Lys	Ala	Gly	Gln	Met	Pro	Leu	Leu	Glu	Arg	Thr	Ala	Leu
		115					120					125			
Ala	Met	Ala	Thr	Gly	Thr	Ile	Leu	Asp	Val	Gly	Ala	Gly	Ser	Gly	Cys
	130					135					140				
His	Ala	Leu	Ala	Leu	Gln	Glu	Ser	Gly	Lys	Glu	Val	Ser	Ala	Ile	Asp
145					150					155					160
Ile	Ser	Pro	Leu	Ser	Val	Glu	Val	Met	Lys	Leu	Arg	Gly	Val	Lys	Asp
			165						170					175	
Ala	Arg	Gln	Val	Asn	Leu	Phe	Asp	Glu	Arg	Phe	Ala	Ala	Thr	Phe	Asp
			180					185					190		
Thr	Ile	Leu	Met	Leu	Met	Asn	Gly	Ser	Gly	Ile	Ile	Gly	Arg	Leu	Glu
	195						200					205			
Asn	Met	Pro	Leu	Phe	Phe	Arg	Lys	Met	Lys	Gln	Leu	Leu	Arg	Pro	Asp
	210					215					220				
Gly	Cys	Ile	Leu	Met	Asp	Ser	Ser	Asp	Leu	Arg	Tyr	Leu	Phe	Glu	Asp
225					230					235					240
Glu	Asp	Gly	Ser	Phe	Leu	Ile	Asp	Leu	Ala	Gly	Asp	Tyr	Tyr	Gly	Glu
				245					250					255	
Ile	Asp	Phe	Arg	Met	Gln	Tyr	Lys	Asp	Ile	Gln	Gly	Asp	Pro	Phe	Asp
			260					265					270		
Trp	Leu	Tyr	Ile	Asp	Phe	Gln	Thr	Leu	Ser	Ala	Tyr	Ala	Ala	Asp	Asn
		275					280					285			
Gly	Phe	Lys	Ala	Glu	Met	Ile	Lys	Glu	Gly	Lys	His	Tyr	Asp	Tyr	Leu
	290					295					300				
Ala	Arg	Leu	Thr	Val	Ala	Leu									
305					310										

<210> 7062
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 7062

Asn	Leu	Phe	Ile	Lys	Glu	Arg	Ile	Tyr	Ile	Met	Lys	Lys	Val	Val	His
1				5					10					15	
Arg	Ser	Asp	Thr	Arg	Gly	Arg	Ser	Val	Tyr	Asp	Trp	Leu	Asp	Ser	His
			20					25					30		

His Ser Phe Ser Phe Asp Glu Tyr Tyr Asn Pro Glu Arg Val His Phe
 35 40 45
 Gly Ala Leu Arg Val Leu Asn Asp Asp Arg Val Ala Pro Gly Glu Gly
 50 55 60
 Phe Gln Thr His Pro His Lys Asn Met Glu Ile Val Ser Ile Pro Leu
 65 70 75 80
 Lys Gly Leu Leu Ala His Gly Asp Ser Lys Lys Asn Ser Arg Thr Ile
 85 90 95
 Thr Val Gly Asp Ile Gln Val Met Ser Ala Gly Thr Gly Ile Tyr His
 100 105 110
 Ser Glu Met Asn Gly Ser Lys Ser Glu Pro Val Glu Phe Leu Gln Ile
 115 120 125
 Trp Ile Ile Pro Lys Glu Arg Asn Thr His Pro Leu Tyr Gln Asp Tyr
 130 135 140
 Asp Ile Arg Gly Leu Leu Lys Lys Asp Glu Leu Ala Phe Ile Leu Ser
 145 150 155 160
 Pro Asp Gly Ser Thr Pro Ala Lys Leu Leu Gln Asp Thr Trp Phe Ser
 165 170 175
 Met Gly Glu Ile Gly Ala Gly Lys Thr Val Glu Tyr Thr Leu His Gly
 180 185 190
 Thr Asp Met Gly Val Tyr Val Phe Leu Ile Glu Gly Glu Val Lys Ile
 195 200 205
 Asp Asp Val Ile Leu Thr Arg Arg Asp Gly Leu Gly Ile Ser Glu Ile
 210 215 220
 Lys Asn Phe Glu Ile Glu Thr Leu Lys Asp Ser Lys Ile Leu Leu Ile
 225 230 235 240
 Glu Val Pro Met

<210> 7063

<211> 198

<212> PRT

<213> B.fragilis

<400> 7063

Ile Ser Phe Leu Ile Arg Phe Phe Asp Ile Val Phe Ser Leu Leu Gly
 1 5 10 15
 Ile Leu Leu Leu Ser Pro Val Phe Leu Leu Tyr Ile Ala Ile Cys
 20 25 30
 Leu Glu Ser Lys Gly Gly Gly Phe Tyr Lys Gln Leu Arg Val Gly Arg
 35 40 45
 Tyr Gly Gly Asp Phe Tyr Val Tyr Lys Phe Arg Ser Met Arg Val Gly
 50 55 60
 Ala Asp Lys Lys Gly Leu Ile Thr Val Gly Gly Arg Asp Pro Arg Ile
 65 70 75 80
 Thr Arg Thr Gly Tyr Leu Ile Arg Lys Tyr Lys Leu Asp Glu Leu Pro
 85 90 95
 Gln Leu Phe Asn Val Leu Lys Gly Asp Met Ser Leu Val Gly Pro Arg
 100 105 110
 Pro Glu Val Arg Lys Tyr Val Asp Leu Tyr Thr Asp Glu Gln Lys Lys
 115 120 125
 Val Leu Ser Val Arg Pro Gly Ile Thr Asp Tyr Ala Ser Ile Glu Tyr
 130 135 140
 Val Asp Glu Asn Met Ile Leu Gly Glu Ala Ser Asp Pro Asp Arg Ala
 145 150 155 160
 Tyr Ile Glu Gln Ile Met Pro Asp Lys Ile Arg Tyr Asn Met Lys Tyr
 165 170 175
 Ile Cys Asn Arg Ser Val Lys Glu Tyr Phe Lys Ile Ile Phe Leu Thr
 180 185 190

Phe Trp Ser Ile Ile Arg
195

<210> 7064

<211> 372

<212> PRT

<213> B.fragilis

<400> 7064

Ser	Asn	Val	Met	Ile	Ile	Gly	Val	Pro	Lys	Glu	Ile	Lys	Asn	Asn	Glu
1				5					10					15	
Asn	Arg	Val	Gly	Met	Thr	Pro	Ser	Gly	Val	Ala	Glu	Leu	Val	Lys	Arg
			20					25					30		
Gly	His	Thr	Val	Tyr	Ile	Gln	His	Thr	Ala	Gly	Glu	Asn	Ser	Gly	Phe
		35					40					45			
Gln	Asp	Glu	Ala	Tyr	Thr	Ala	Val	Gly	Ala	Gln	Ile	Leu	Pro	Thr	Met
	50				55						60				
Glu	Glu	Thr	Tyr	Ala	Met	Ala	Gln	Met	Ile	Val	Lys	Val	Lys	Glu	Pro
65					70					75					80
Ile	Ala	Pro	Glu	Tyr	Arg	Leu	Ile	Arg	Lys	Gly	Gln	Val	Val	Phe	Thr
				85					90					95	
Tyr	Phe	His	Phe	Ala	Ser	Asp	Arg	Glu	Leu	Thr	Leu	Ala	Met	Ile	Glu
			100					105					110		
Asn	Gly	Ser	Val	Cys	Leu	Ala	Tyr	Glu	Thr	Val	Glu	Lys	Ala	Asp	His
		115					120					125			
Ser	Leu	Pro	Leu	Leu	Ile	Pro	Met	Ser	Glu	Val	Ala	Gly	Arg	Met	Ala
	130					135					140				
Ile	Gln	Glu	Gly	Ala	Arg	Phe	Leu	Glu	Lys	Pro	Gln	Gly	Gly	Lys	Gly
145					150					155					160
Ile	Leu	Pro	Gly	Gly	Val	Pro	Gly	Val	Lys	Pro	Ala	Lys	Val	Leu	Ile
				165					170					175	
Leu	Gly	Gly	Gly	Ile	Val	Gly	Ser	Asn	Ala	Ala	Gln	Met	Ala	Ala	Gly
			180					185					190		
Leu	Gly	Ala	Asp	Val	Thr	Ile	Ala	Asp	Ile	Asn	Leu	Ser	Arg	Leu	Arg
	195						200					205			
Tyr	Leu	Ser	Glu	Thr	Leu	Pro	Lys	Asn	Val	Lys	Thr	Leu	Tyr	Ala	Ser
	210					215					220				
Glu	Val	Arg	Leu	Lys	Lys	Glu	Leu	Pro	Asp	Val	Asp	Leu	Val	Val	Gly
225					230					235					240
Ser	Val	Leu	Ile	Pro	Gly	Asp	Lys	Ala	Pro	His	Leu	Ile	Thr	Arg	Asp
				245					250					255	
Met	Leu	Lys	Met	Met	Gln	Pro	Gly	Thr	Val	Leu	Val	Asp	Val	Ala	Ile
		260					265						270		
Asp	Gln	Gly	Gly	Cys	Phe	Glu	Thr	Ser	His	Pro	Thr	Thr	His	Ser	Glu
		275					280					285			
Pro	Thr	Tyr	Val	Val	Asp	Gly	Ile	Val	His	Tyr	Ala	Val	Ala	Asn	Ile
	290					295					300				
Pro	Gly	Ala	Val	Pro	Tyr	Thr	Ser	Thr	Leu	Ala	Leu	Thr	Asn	Ala	Thr
305					310					315					320
Leu	Pro	Tyr	Val	Ile	Ala	Leu	Ala	Asn	Lys	Gly	Trp	Arg	Lys	Ala	Cys
				325					330					335	
Lys	Lys	Asp	Pro	Ala	Leu	Ala	Leu	Gly	Leu	Asn	Val	Val	Glu	Gly	Lys
		340					345						350		
Val	Val	Tyr	Arg	Ala	Ile	Ala	Asp	Val	Phe	Gly	Leu	Lys	Tyr	Glu	Gln
		355				360						365			
Leu	Asn	Leu	Glu												
		370													

<210> 7065

<211> 250
 <212> PRT
 <213> B.fragilis

<400> 7065

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Ile Gly Tyr Met Lys His Ile Phe Asn Lys Glu Gln Cys Gln Lys Ala
1           5           10           15
Thr Phe Ile Leu Glu Ser Pro Leu Ala Lys Leu Ser Glu Leu Tyr Ser
          20           25           30
Ser Glu Ile Lys Asp Leu Ala Val Val Trp Cys Tyr Tyr Ser Gly Arg
          35           40           45
Ile Glu Gly Asn Thr Tyr Thr Tyr Val Glu Thr Glu Ala Leu Leu Lys
          50           55           60
Asp Gly Ile Thr Ser Glu Lys Lys Tyr Glu Asp Ala Lys Met Leu Lys
65           70           75           80
Asn Leu Tyr Asn Thr Phe Ile Ser Glu Leu Glu Tyr Ile His Gln Glu
          85           90           95
Lys Asn Lys Glu Ile Ile Asp Glu Arg Thr Leu Phe Arg Leu His Gln
          100          105          110
Ser Ile Ser Thr Gly Leu Val Ser Asn Glu Glu Ser Gly Phe Leu Arg
          115          120          125
Thr Arg Ala Val Arg Ile Ser Gly Thr Asp Tyr Ala Pro Pro Lys Asp
          130          135          140
Leu Gln Glu Ile Lys Ser Lys Leu Gly Glu Ile Leu Tyr Glu Gln Asp
145          150          155          160
Val Tyr Thr Asn Pro Leu Glu Lys Ala Val Phe Leu His Cys Asn Ile
          165          170          175
Ala Arg Leu Gln Pro Phe Ile Asp Gly Asn Lys Arg Thr Ser Arg Met
          180          185          190
Ile Glu Ser Val Val Met Met Asn Ala Asp Ile Ile Pro Val Tyr Ser
          195          200          205
Ala Lys Asp Ala Asp Ile Leu Asn Tyr Arg Lys Gly Leu Ile Arg Phe
          210          215          220
Tyr Glu Thr Gly Asp Tyr Thr Lys Tyr Ser Asp Tyr Phe Leu Asn Arg
225          230          235          240
Gln Leu Glu Arg Ile Lys Glu Ile Asp Ile
          245          250

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<210> 7066
 <211> 608
 <212> PRT
 <213> B.fragilis

<400> 7066

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Ile Arg Asp Met Arg Lys Leu Leu Tyr Val Ile Leu Leu Leu Leu Phe
1           5           10           15
Arg Leu Leu Met Phe Pro Gly Ala Val Cys Ala Glu Ile Leu Ser Leu
          20           25           30
Pro Asp Ser Leu Ile Thr Asp Asp Asn Val Tyr Lys Tyr Thr Phe Ser
          35           40           45
Asp Phe Asp Lys Ala Gln Gln Val Met Glu Gln Leu Arg Lys Arg Lys
          50           55           60
Ser Leu Ser Met Phe Arg Met Asp Val Val Glu Gly Asp Leu Tyr Phe
65           70           75           80
Asn Val Gly Gln Tyr Tyr Lys Ala Leu Lys Phe Tyr Lys Arg Ala Leu
          85           90           95
Asp Ser Asp Ser Val Arg Asn Asn Asp Lys Asn Tyr Met Glu Gln Val
          100          105          110
His Arg Met Ile Ser Cys Tyr Asp Cys Leu His Asn Glu Asn Lys Lys

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115	120	125
Ser Leu Tyr Val Tyr Leu Leu Lys Arg Ala Glu Gln Cys Gly Asp		
130	135	140
Lys Ala Met Gln Ser Val Ala Leu Phe Asn Met Gly Lys Met Leu Tyr		
145	150	155
Tyr Gln Gly Asn Lys Glu Lys Gly Tyr Glu Tyr Leu Glu Gln Ala Ile		160
	165	170
Glu Met Met Ser Lys Thr Asp Tyr Arg Tyr Lys Tyr Asp Asn Leu Arg		175
	180	185
Tyr Asp Tyr Asn Thr Leu Leu Ile Phe Gln Lys Ser Asp Arg Arg Asn		190
	195	200
Glu Glu Ala Leu Arg Thr Leu Ala Ala Leu Glu Lys Val Val Thr Glu		205
	210	215
Glu Thr Gly Ser Glu Thr Pro Met Glu Gly Leu Ser Ala Lys Glu Lys		220
225	230	235
Lys Ala Met Tyr Ala His Tyr Ala Val Val Leu Phe Arg Leu Gly Gln		240
	245	250
Ala Glu Glu Ala Glu Arg Tyr Tyr Arg Lys Phe Leu Ala Ala Ser Glu		255
	260	265
Glu Tyr Asp Arg Asp Asp Tyr Leu Ile Met Pro Tyr Leu Phe Asp Arg		270
	275	280
Lys Met Tyr Asp Gln Val Ile Arg Met Asn Ala Ala Arg Glu Lys Met		285
290	295	300
Tyr Ile Met Arg Gly Asp Thr Val Asn Tyr Tyr Met Thr Thr Ile Lys		305
305	310	315
Arg Ser Leu Gly Trp Ala Tyr Arg Asp Lys Gly Asp Tyr Arg Thr Ala		320
	325	330
Ala Arg Tyr Phe Glu Gln Leu Ala Val Leu Arg Asp Ser Ile Lys Asn		335
	340	345
Arg Glu Gln Lys Ser Ala Ala Leu Glu Leu Ala Ala Val Tyr Glu Thr		350
	355	360
Asn Glu Lys Asp Leu Phe Ile Gln Gln Gln Ala Ala Asp Met Gln Lys		365
370	375	380
Arg Asn Leu Leu Leu Val Phe Thr Leu Cys Ile Val Phe Leu Leu Gly		385
385	390	395
Val Leu Leu Trp Arg Thr Ile Arg His Asn Arg Ile Ile Arg Arg Lys		400
	405	410
Asn Lys Ala Met Val Gly Thr Ile Glu Asp Leu Leu Ile His Lys Glu		415
	420	425
Glu Leu Tyr Arg Lys Lys Glu Glu Asn Leu Ile Leu Lys Glu Gln Leu		430
	435	440
Glu Arg Glu Gln Asn Leu Arg Met Ser Ala Gly Gly Gly Ser Leu Ser		445
	450	455
Thr Asp Lys Asp Gly Lys Ala Glu Thr Thr Val Val Pro Glu Pro Gln		460
465	470	475
Ala Gly Asp Gly Asn Asp Ile His Asp Arg Ile Leu Phe Asp Lys Leu		480
	485	490
Glu His Glu Ile Ile Ser Arg Gln Leu Tyr Leu Gln Pro Asp Phe Ser		495
	500	505
Arg Glu Glu Leu Ile Lys Thr Ile Tyr Ile Pro Lys Asn Lys Phe Ala		510
	515	520
Pro Leu Phe Lys Gln Tyr Ala Gly Met Ser Phe Ser Lys Tyr Ile Asn		525
530	535	540
Asn Leu Arg Leu Glu Tyr Ala Ala Lys Met Leu Lys Asn His Pro Asp		545
545	550	555
Tyr Thr Val Asp Thr Ile Ala Gln Glu Cys Gly Met Ser Thr Gln Ser		560
	565	570
Leu Tyr Arg Leu Phe Ser Gly Lys Tyr Gly Val Thr Pro Thr Asp Phe		575
	580	585
		590

Gln Val Gly Val Gln His Ile Asn Asn Lys Asn Ile Thr Glu Asp Lys
 595 600 605

<210> 7067

<211> 261

<212> PRT

<213> B.fragilis

<400> 7067

Ser Tyr Thr Ile Lys Thr Glu Met Lys Ile Ser Ile Ile Thr Val Thr
 1 5 10 15
 Phe Asn Ser Glu Lys Thr Ile Asn Asp Thr Ile Gln Ser Val Leu Met
 20 25 30
 Gln Ser Tyr Ser Asn Ile Glu Tyr Ile Ile Ile Asp Gly Lys Ser Asn
 35 40 45
 Asp Ser Thr Leu Gly Ile Val Lys Glu Tyr Ile Pro Leu Phe Ser Gly
 50 55 60
 Arg Leu Lys Tyr Ile Ser Glu Lys Asp Ser Gly Ile Tyr Asp Ala Met
 65 70 75 80
 Asn Lys Gly Ile Lys Leu Ala Ser Gly Asp Ile Ile Gly Ile Ile Asn
 85 90 95
 Ser Asp Asp Phe Tyr Lys Ser Asn Asn Val Ile Ala Ser Val Ala Asn
 100 105 110
 Ala Phe Asn Asp Asn Ser Ile Glu Val Val Phe Gly Asn Ile Gln Phe
 115 120 125
 Val Asn Pro Asn Asn Lys Thr Arg Ile Val Arg Lys Tyr Ser Gly Lys
 130 135 140
 Gly Phe Arg Pro Trp Met Phe Arg Trp Gly Ile Met Pro Pro His Pro
 145 150 155 160
 Ser Phe Phe Thr Arg Lys Ser Cys Tyr Glu Lys Tyr Gly Met Tyr Asn
 165 170 175
 Ser Thr Phe Asn Ile Ser Gly Asp Tyr Asp Leu Met Val Arg Phe Leu
 180 185 190
 Leu Val Lys Lys Leu Lys Tyr Lys Tyr Met Asp Leu Asp Met Val Ile
 195 200 205
 Met Arg Leu Gly Gly Ala Ser Thr Lys Ser Ile Arg Ser Leu Leu Ile
 210 215 220
 Asn Asn Asn Tyr Asn Val Ile Arg Ala Cys Arg Glu Asn Gly Val Tyr
 225 230 235 240
 Thr Asn Ile Phe Met Val Ser Leu Arg Tyr Ile Lys Lys Ile Ser Glu
 245 250 255
 Leu Ile Phe Lys Val
 260

<210> 7068

<211> 490

<212> PRT

<213> B.fragilis

<400> 7068

Ala Asn Tyr Met Lys Gln Tyr Ile Val Ala Leu Met Leu Ala Cys Ser
 1 5 10 15
 Ile Gln Gly His Ser Gln Asp Val Lys Gln Ala Thr Phe Val Pro Pro
 20 25 30
 Phe Asp Phe Thr Leu Thr Leu Ser Gly Asn Phe Gly Glu Ile Arg Ala
 35 40 45
 Asn His Phe His Gly Gly Leu Asp Phe Lys Thr Gln Gly Val Ile Gly
 50 55 60
 Lys Pro Val Arg Ala Leu Ala Asp Gly Tyr Ile Ser Arg Ile Arg Val

65					70					75				80
Thr	Asn	Gly	Ser	Gly	His	Val	Leu	Asp	Val	Tyr	Asn	Asn	Gly	Tyr
				85					90				95	
Thr	Thr	Ile	Asn	Arg	His	Leu	Ser	Gly	Phe	Met	Pro	Asp	Ile	Ala
			100					105					110	Arg
Arg	Val	Glu	Lys	Leu	Gln	Tyr	Glu	Lys	Glu	Asp	Trp	Glu	Val	Glu
		115					120					125		Ile
Val	Pro	Glu	Pro	Gly	Glu	Tyr	Pro	Val	Lys	Ala	Gly	Gln	Gln	Ile
	130					135					140			Ala
Trp	Ser	Gly	Asn	Thr	Gly	Tyr	Ser	Phe	Gly	Pro	His	Leu	His	Leu
145					150					155				160
Val	Met	Glu	Thr	Ala	Thr	Gly	Glu	Ser	Ile	Asp	Pro	Met	Pro	Phe
				165					170					175
Lys	Ser	Lys	Ile	Lys	Asp	Asn	Thr	Ala	Pro	Arg	Ala	Glu	Gly	Ile
			180					185					190	Met
Leu	Phe	Pro	Gln	Pro	Gly	Ser	Gly	Val	Val	Gly	Gly	Ser	Pro	Glu
	195						200					205		Arg
Gln	Ser	Phe	Pro	Ile	Asn	Thr	Ala	Arg	Pro	Ile	Glu	Ala	Trp	Gly
	210					215					220			Val
Ile	Gly	Ser	Gly	Ile	Lys	Ala	Tyr	Asp	Tyr	Met	Asp	Gly	Val	His
225					230				235					240
Arg	Tyr	Gly	Val	His	Thr	Val	Val	Leu	Arg	Val	Asp	Gly	Thr	Glu
				245					250					255
Phe	Arg	Ser	Val	Val	Asp	Arg	Phe	Ser	Gln	Asp	Glu	Asn	Arg	Met
			260					265					270	Ile
Asn	Ser	Trp	Thr	Cys	Gly	Gln	Tyr	Met	Lys	Ser	Phe	Ile	Asp	Pro
	275						280					285		Gly
Asn	Thr	Leu	Arg	Met	Leu	Arg	Ala	Ser	Asn	Asp	Asn	Arg	Gly	Leu
	290					295				300				Val
Thr	Ile	Asp	Glu	Glu	Arg	Asp	Tyr	Lys	Phe	Glu	Tyr	Glu	Leu	Lys
305					310					315				320
Ala	Phe	Gly	Asn	Thr	Ser	Arg	Tyr	Arg	Phe	Thr	Val	Arg	Gly	Lys
				325					330					335
Gln	Pro	Ile	Gln	Pro	Leu	Gly	His	Arg	Glu	Lys	Tyr	Phe	Phe	Ala
			340					345					350	Trp
Asp	Lys	Thr	Asn	Phe	Leu	Gln	Glu	Pro	Gly	Leu	Thr	Leu	Thr	Val
	355						360					365		Pro
Arg	Gly	Met	Leu	Tyr	Asp	Asn	Val	Pro	Leu	Asn	Tyr	Glu	Val	His
	370					375					380			Ser
Asp	Ser	Gly	Ala	Ile	Ala	Tyr	Thr	Tyr	Gln	Leu	Asn	Asp	Glu	Lys
385					390				395					400
Pro	Leu	His	Gly	Gly	Cys	Glu	Leu	Arg	Ile	Gly	Leu	Arg	Arg	Gln
			405						410					415
Val	Ala	Asp	Ser	Thr	Lys	Tyr	Tyr	Val	Ala	Arg	Val	Thr	Pro	Lys
			420					425					430	Gly
Ser	Met	Tyr	Ser	Ala	Gly	Gly	Thr	Tyr	Glu	Asp	Gly	Phe	Met	Lys
	435						440					445		Thr
Arg	Ile	Arg	Glu	Leu	Gly	Thr	Tyr	Thr	Val	Ala	Val	Asp	Thr	Val
	450					455					460			Pro
Pro	Glu	Ile	Thr	Pro	Val	Gly	Lys	Asn	Thr	Trp	Gly	Arg	Asn	Gly
465					470					475				Lys
Ser	Ser	Pro	Arg	Gly	Trp	Lys	Asp	Gln	Arg					
				485					490					

<210> 7069

<211> 282

<212> PRT

<213> B.fragilis

<400> 7069

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Ile Lys Pro Met Asn Glu Leu Ile Asp Arg Leu Ile Asp Leu Ala Phe
1      5      10      15
Ala Glu Asp Ile Gly Asp Gly Asp His Thr Thr Leu Ser Cys Ile Pro
20      25      30
Ala Thr Ala Met Gly Lys Ser Lys Leu Leu Ile Lys Glu Ala Gly Val
35      40      45
Leu Ala Gly Ile Glu Ile Ala Lys Glu Ile Phe His Arg Phe Asp Pro
50      55      60
Thr Met Lys Val Glu Val Phe Ile Asn Asp Gly Ala Glu Val Lys Pro
65      70      75      80
Gly Asp Val Ala Met Ile Val Glu Gly Lys Ile Gln Ser Leu Leu Gln
85      90      95
Thr Glu Arg Leu Met Leu Asn Val Met Gln Arg Met Ser Gly Ile Ala
100     105     110
Thr Met Thr Arg Lys Tyr Val Lys Gln Leu Glu Gly Thr Lys Thr Arg
115     120     125
Val Leu Asp Thr Arg Lys Thr Thr Pro Gly Leu Arg Met Leu Glu Lys
130     135     140
Ala Ala Val Lys Ile Gly Gly Val Asn His Arg Ile Gly Leu Phe
145     150     155     160
Asp Met Ile Leu Leu Lys Asp Asn His Val Asp Phe Ala Gly Gly Ile
165     170     175
Asp Lys Ala Ile Asn Arg Ala Lys Glu Tyr Cys Lys Glu Lys Gly Lys
180     185     190
Asp Leu Lys Ile Glu Ile Glu Val Arg Asn Phe Asp Glu Leu Arg Gln
195     200     205
Val Leu Ser Ile Gly Gly Val Asp Arg Ile Met Leu Asp Asn Phe Thr
210     215     220
Pro Glu Asn Thr Lys Lys Ala Val Glu Met Ile Gly Gly Lys Tyr Glu
225     230     235     240
Thr Glu Ser Ser Gly Gly Ile Thr Phe Asp Thr Leu Arg Asp Tyr Ala
245     250     255
Glu Cys Gly Val Asp Phe Ile Ser Val Gly Ala Leu Thr His Ser Val
260     265     270
Lys Gly Leu Asp Met Ser Phe Lys Ala Cys
275     280

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<210> 7070

<211> 230

<212> PRT

<213> B.fragilis

<400> 7070

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Lys Thr Gly Ile Met Lys Glu Lys Val Ser Val Pro Phe Met Leu Leu
1      5      10      15
Gly Ile Leu Phe Asn Val Cys Leu Ile Ala Ala Asn Leu Leu Glu Thr
20      25      30
Lys Val Ile Gln Val Gly Ser Ile Thr Val Thr Ala Gly Leu Leu Val
35      40      45
Phe Pro Ile Ser Tyr Ile Ile Asn Asp Cys Ile Ala Glu Val Trp Gly
50      55      60
Phe Lys Lys Ala Arg Leu Ile Ile Trp Ser Gly Phe Ala Met Asn Phe
65      70      75      80
Phe Val Val Ala Leu Gly Leu Ile Ala Val Ala Leu Pro Ala Ala Pro
85      90      95
Phe Trp Glu Gly Glu Gln His Phe Asp Phe Val Phe Gly Met Ala Pro
100     105     110
Arg Ile Val Val Ala Ser Leu Leu Ala Phe Leu Val Gly Ser Phe Leu

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115	120	125
Asn Ala Tyr Val Met Ser Lys Met Lys Val Ala Ser Gly Gly Arg Asn		
130	135	140
Phe Ser Ala Arg Ala Ile Trp Ser Thr Val Val Gly Glu Thr Ala Asp		
145	150	155
Ser Leu Ile Phe Phe Pro Ile Ala Phe Gly Gly Leu Ile Ala Trp Pro		
165	170	175
Glu Leu Leu Val Met Met Gly Thr Gln Ile Val Leu Lys Ser Leu Tyr		
180	185	190
Glu Val Ile Ile Leu Pro Ile Thr Ile Arg Val Val Lys Ala Val Lys		
195	200	205
Arg Ile Asp Gly Ser Asp Val Tyr Asp Thr Asp Ile Ser Tyr Asn Val		
210	215	220
Leu Lys Val Lys Asp Ile		
225	230	

<210> 7071

<211> 132

<212> PRT

<213> B.fragilis

<400> 7071

Lys Thr Asn Leu Glu Thr Met Glu Ile Lys Ser Arg Phe Asp His Phe		
1	5	10
Asn Ile Asn Val Thr Asp Leu Glu Arg Ser Ile Ala Phe Tyr Glu Lys		
20	25	30
Ala Leu Gly Leu Lys Glu His His Arg Lys Glu Ala Ala Asp Gly Ser		
35	40	45
Phe Ile Leu Val Tyr Leu Thr Asp Asn Thr Thr Gly Phe Leu Leu Glu		
50	55	60
Leu Thr Trp Leu Arg Asp His Thr Glu Ala Tyr Glu Leu Gly Glu Asn		
65	70	75
Glu Ser His Leu Cys Phe Arg Val Ala Gly Asp Tyr Asp Ala Val Arg		
85	90	95
Gln Tyr His Lys Glu Met Asp Cys Val Cys Phe Glu Asn Thr Ser Met		
100	105	110
Gly Leu Tyr Phe Ile Asn Asp Pro Asp Asp Tyr Trp Ile Glu Ile Leu		
115	120	125
Pro Glu Arg Leu		
130		

<210> 7072

<211> 61

<212> PRT

<213> B.fragilis

<400> 7072

Phe Tyr Asp Leu Lys Phe Asp Thr Met Phe Leu Ser Val His Met Ile		
1	5	10
Tyr Leu Leu Asp Val Pro Pro Tyr Asn Glu Thr Leu Asp Gly Asn Ala		
20	25	30
Thr Glu Tyr His Leu Tyr Ile Cys His Ile Tyr Pro Ile Ile Gln Cys		
35	40	45
Asn Asp His Val Tyr Tyr Asp Ile Pro Tyr Arg Val Phe		
50	55	60

<210> 7073

<211> 92

<212> PRT

<213> B.fragilis

<400> 7073

Ala Thr Cys Phe Ile Leu Phe Leu Glu Asp Thr Leu Arg Gln Leu Leu
 1 5 10 15
 Ala Arg Ser Arg Tyr Leu Leu Phe Lys Ala Pro Gly Lys Trp Thr Asp
 20 25 30
 Ser Gln Lys Arg Arg Ala Gly Ile Leu Phe Lys Gln Phe Pro Asp Ile
 35 40 45
 Lys Ala Val Cys Tyr Tyr Ala Leu Arg Trp Gly Lys Ile Phe Thr Asp
 50 55 60
 Tyr Ile Asp Lys Asp Val Ala Cys Ala Lys Asn Leu Glu Val Gly Val
 65 70 75 80
 Lys Asn Arg Thr Phe Ile Met Glu Val Cys Cys Ile
 85 90

<210> 7074

<211> 147

<212> PRT

<213> B.fragilis

<400> 7074

Lys Glu Ile Val Met Ser Gln Leu Tyr Phe Ser Ser Lys Lys Arg Asn
 1 5 10 15
 Asn Gly Ser Ile Leu Gln Ile Arg Gly His Tyr Tyr Ala Asn Asn Arg
 20 25 30
 Asn Asp Cys Phe Gln Pro Ile Gly Gln Leu Ser Pro Ile Ser Phe Ser
 35 40 45
 Ala Val Lys Gly Asn Gln Leu Leu Ile Thr Leu Asn Val Pro Asp Thr
 50 55 60
 Trp Cys Asp Lys Ala Gly Asp Gly Ala Trp Phe Ala Ile Ser Val Asn
 65 70 75 80
 Asp Glu Ile Lys Ser Arg Gly Val Tyr Tyr Ser Gly Lys Asp Gly Gln
 85 90 95
 Arg Val Pro Ile Thr Leu Gln Thr Val Val Asp Val Glu Glu Asp His
 100 105 110
 Ser Tyr Ile Ile Lys Gly Leu Trp Cys Asn Glu Ser Gly Thr Glu Asn
 115 120 125
 Arg Asn Cys Asn Ile Gly Glu Phe Ser Glu Thr Val Leu Thr Val Leu
 130 135 140
 Val Leu Asp
 145

<210> 7075

<211> 85

<212> PRT

<213> B.fragilis

<400> 7075

Gly Ala Phe Phe Phe Lys Ala Leu Leu Tyr Asp Leu Thr Lys Leu Ser
 1 5 10 15
 Phe Asn Asn Trp Tyr Ser Cys Leu Leu Glu Glu Leu Pro Val Asn
 20 25 30
 Ser Pro Arg Asn Tyr Ser Ile Lys Ile Ser Leu His Tyr Glu Glu Gln
 35 40 45
 His Ile Thr Ala Val Trp Val Tyr Leu Thr Val Lys Phe Glu Glu His
 50 55 60
 Trp Lys Pro Val Asp Val Glu Val Glu Phe Arg Cys Lys Phe Lys Glu
 65 70 75 80

His Val Glu Lys Gly Lys Asn Leu Asp Gln Lys Met
 405 410

<210> 7077

<211> 501

<212> PRT

<213> B.fragilis

<400> 7077

Met Arg Lys Leu Phe Leu Ile Ser Ile Gly Leu Leu Ile Val Ser Thr
 1 5 10 15
 Ser Thr Phe Ala Gly Gly Leu Leu Thr Asn Thr Asn Gln His Val Leu
 20 25 30
 Phe Leu Arg Met Leu Ala Arg Asp Ala Ser Thr Gln Ile Asp Ala Val
 35 40 45
 Tyr Ser Asn Pro Ala Gly Val Ala Phe Met Glu Asn Gly Phe His Leu
 50 55 60
 Ser Leu Asn Gly Gln Ser Ala Phe Gln Thr Arg Thr Ile Thr Ser Thr
 65 70 75 80
 Phe Ala Pro Phe Ala Gly Phe Gly Gly Asn Ala Thr Lys Val Tyr Lys
 85 90 95
 Gly Glu Ala Ser Ala Pro Phe Ile Pro Ser Val Phe Ala Val Tyr Lys
 100 105 110
 Lys Asp Lys Trp Ala Phe Ser Gly Asn Phe Ala Val Thr Gly Gly Gly
 115 120 125
 Gly Lys Ala Thr Phe Asn Glu Gly Leu Gly Ser Phe Glu Ser Leu Val
 130 135 140
 Ser Val Val Pro Gly Met Leu Val Ala Ala Gly Asn Glu Met Val Asp
 145 150 155 160
 Lys Gly Val Leu Pro Ile Asn Ile Phe Asn Gly Thr Asn Lys Tyr Ser
 165 170 175
 Val Asp Ser Tyr Met Arg Gly Lys Gln Met Ile Phe Gly Leu Gln Leu
 180 185 190
 Gly Ala Thr Tyr Arg Ile Thr Asp Tyr Leu Ser Ala Phe Ala Gly Val
 195 200 205
 Arg Met Asn Tyr Val Ser Asn Gly Tyr Glu Gly His Ile Arg Asn Ile
 210 215 220
 Glu Ala Asn Ile Gly Gly Glu Met Val Asn Val Asn Lys Tyr Phe
 225 230 235 240
 Ser Asp Tyr Ala Lys Gln Ala Arg Thr Ala Ala Asp Ala Tyr Leu Ala
 245 250 255
 Ala Asn Asp Leu Ala Asn Tyr Ala Lys Tyr Asp Ala Ile Ala Lys Glu
 260 265 270
 Ala Thr Lys Val Ala Gly Leu Thr Ala Asp Lys Glu Leu Asp Cys Asp
 275 280 285
 Gln Thr Gly Trp Gly Val Thr Pro Ile Leu Gly Leu Asp Phe Lys Met
 290 295 300
 Asn Lys Trp Asn Ile Gly Val Lys Tyr Glu Phe Asn Thr Lys Leu Asn
 305 310 315 320
 Val Glu Asn Lys Thr Arg Ile Asp Asn Thr Gly Leu Phe Ala Asn Gly
 325 330 335
 Val Asn Thr Pro His Asp Ile Pro Ala Leu Leu Thr Val Gly Val Ser
 340 345 350
 Tyr Glu Ile Leu Pro Val Leu Arg Ala Ser Val Gly Tyr His His Phe
 355 360 365
 Phe Asp Thr Asn Ala Arg Met Ala Asp Ala Lys Asp Pro Val Thr Gly
 370 375 380
 Gln Thr Met Gly Lys Gln His Phe Ile Lys Gln Gly Thr Asn Glu Tyr
 385 390 395 400

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Leu Gly Gly Ile Glu Trp Asp Val Cys Lys Trp Ala Gln Val Ser Ala
 405 410 415
 Gly Met Gln Arg Thr Lys Tyr Gly Val Gly Asp Asn Tyr Gln Ser Asp
 420 425 430
 Met Ser Phe Ala Val Ser Ser Tyr Ser Tyr Gly Phe Gly Ala Gly Phe
 435 440 445
 Asp Ile Ala Lys Asn Leu Lys Leu Asn Val Ala Tyr Phe Trp Thr Asp
 450 455 460
 Tyr Asp Lys Tyr Thr Lys Glu Thr Pro Asn Tyr Gly Gly Thr Gly Ile
 465 470 475 480
 Ala Gly Lys Asp Val Phe Thr Arg Thr Asn Lys Val Phe Gly Ile Gly
 485 490 495
 Leu Asp Tyr Lys Phe
 500

<210> 7078

<211> 406

<212> PRT

<213> B.fragilis

<400> 7078

Lys Ile Pro Ser Gln Phe Arg Thr Arg Gly Glu Arg Lys Glu Ser Gly
 1 5 10 15
 Ser Glu Asn Val Met Phe Thr Ser Met Tyr Asn Asn Ile Thr Phe
 20 25 30
 Ile His Asn Leu Phe Gly Thr Asp Glu Phe Val Pro Leu His Ala Pro
 35 40 45
 Leu Phe Ile Gly Asn Glu Lys Lys Tyr Leu Ala Glu Cys Ile Asp Thr
 50 55 60
 Thr Phe Val Ser Ser Val Gly Lys Phe Val Asp Arg Phe Glu Glu Gln
 65 70 75 80
 Val Ala Ser Tyr Thr Gly Ser Lys Arg Ala Val Val Cys Val Ser Gly
 85 90 95
 Thr Asn Ala Leu His Met Gly Met Leu Leu Val Gly Val Glu Arg Asp
 100 105 110
 Asp Glu Val Leu Thr Gln Ala Leu Thr Phe Ile Ala Thr Cys Asn Ala
 115 120 125
 Ile Ser Tyr Ile Gly Ala His Pro Val Phe Leu Asp Val Asp Arg Asp
 130 135 140
 Thr Leu Gly Leu Ser Pro Leu Ala Val Lys Arg Trp Leu Ser Gly His
 145 150 155 160
 Ala Glu Val Arg Asn Gly Gln Cys Tyr Asn Lys Lys Thr Gly Arg Arg
 165 170 175
 Ile Lys Ala Cys Val Pro Met His Thr Phe Gly His Pro Met Lys Ile
 180 185 190
 Asp Glu Leu Ser Ala Val Cys Asn Glu Tyr His Ile Glu Leu Val Glu
 195 200 205
 Asp Ala Ala Glu Ser Ile Gly Ser Phe Tyr Lys Gly Arg His Thr Gly
 210 215 220
 Thr Phe Gly Arg Val Gly Ala Ile Ser Phe Asn Gly Asn Lys Thr Ile
 225 230 235 240
 Thr Thr Gly Gly Gly Gly Met Leu Leu Phe Gln Asp Glu Glu Leu Gly
 245 250 255
 Lys Phe Ala Lys His Leu Thr Thr Gln Ala Lys Val Pro His Arg Trp
 260 265 270
 Ala Phe Val His Asp His Ile Gly Tyr Asn Tyr Arg Met Pro Asn Ile
 275 280 285
 Asn Ala Ala Leu Gly Cys Ala Gln Met Glu Asn Leu Asp Arg Tyr Val
 290 295 300

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Ser Asn Lys Arg Glu Thr Ala Glu Arg Tyr Arg Glu Phe Phe Ser Arg
305          310          315          320
Ile Pro Asp Val Glu Phe Val Val Glu Pro Ala Asn Ser Arg Ser Asn
          325          330          335
Tyr Trp Leu Asn Ala Val Leu Leu Lys Asp Arg Arg Ala Gln Gln Ser
          340          345          350
Phe Leu Glu Tyr Thr Asn Asp His Gly Val Met Thr Arg Pro Val Trp
          355          360          365
Glu Leu Met Asn Arg Leu Glu Met Phe Arg Gly Cys Glu Thr Asp Gly
          370          375          380
Leu Glu Asn Thr Val Trp Leu Glu Glu Arg Ile Val Asn Ile Pro Ser
385          390          395          400
Ser Val Arg Leu Gly Val
          405

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<210> 7079
 <211> 77
 <212> PRT
 <213> B.fragilis

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<400> 7079
Leu Leu Arg Thr Glu Glu Leu Val Leu Lys Lys Tyr Leu Glu Asp Lys
1          5          10          15
Glu Gly Asp Met Ser Thr Ile Lys Ile Lys Gln Val Lys Ser Arg Ile
          20          25          30
Gly Ala Pro Ala Asp Gln Lys Arg Thr Leu Asp Ala Leu Gly Leu Arg
          35          40          45
Lys Leu Asn Arg Val Val Glu His Glu Ser Thr Pro Ser Ile Leu Gly
          50          55          60
Met Val Asp Lys Val Lys His Leu Val Ala Ile Val Lys
65          70          75

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<210> 7080
 <211> 113
 <212> PRT
 <213> B.fragilis

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<400> 7080
Arg Leu Leu Thr Val Arg Val Val Ile Leu Val Ser Ser Arg Leu Glu
1          5          10          15
Thr Val Trp Val Thr Met Leu Lys Cys Ala Ser Ser Asn Ser Leu Thr
          20          25          30
Thr Thr Lys Thr Trp Leu Lys Arg Lys Leu Leu Arg Lys Gln Leu Val
          35          40          45
Leu Val Val Gln Arg Lys Leu Leu Lys Leu Leu Leu Leu Pro Lys Tyr
          50          55          60
Leu Gln Leu Lys Asn Arg Lys Leu Asn Gln Gln Asn Asn Ser Thr Ile
65          70          75          80
Ile Leu Ile Asp Ile Lys Lys Ala Ala Leu Lys Arg Val Ala Phe Phe
          85          90          95
Val Asp Phe Thr Lys Asp Thr Leu Lys Thr Phe Glu Gly Glu Gln Ser
          100          105          110
Asp

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<210> 7081
 <211> 616
 <212> PRT
 <213> B.fragilis

<400> 7081

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Ile Tyr Tyr Phe Cys Gly Ser Asn Asn Gln Gly Asn Met Glu Gln Leu
1      5      10      15
Asn Leu Ile Ile Asp Thr Tyr Gln Arg Ile Ile Leu Glu Ser Glu Ser
20      25      30
Lys Leu Ala Lys Val Lys Gln His Ile Tyr Arg Ile Gly Thr Leu Arg
35      40      45
Leu Ile Leu Phe Ala Ala Gly Ile Ala Gly Ile Ile Tyr Phe Trp Asp
50      55      60
Glu Gly Arg Leu Val Ile Gly Gly Ile Ala Ala Ile Thr Phe Ile Pro
65      70      75      80
Phe Ile Leu Leu Val Lys Leu His Asn Arg Leu Phe His Gln Lys Asp
85      90      95
Tyr Leu Glu Lys Lys Ile Glu Ile Asn Arg Gln Glu Leu Gln Ala Leu
100     105     110
Thr Tyr Asp Thr Ser Ala Phe Asp Asn Gly Glu Glu Phe Ile Asn Pro
115     120     125
Ser His Leu Tyr Thr Tyr Asp Leu Asp Val Phe Gly Glu His Ser Leu
130     135     140
Phe Gln Tyr Ile Asn Arg Thr Ala Thr Gln Pro Gly Lys Lys Arg Leu
145     150     155     160
Ala Glu Trp Met Asn Met His Leu Lys Ser Lys Ala Glu Ile Glu Lys
165     170     175
Arg Gln Glu Ala Val Arg Glu Leu Ala Pro Glu Leu Glu Met Arg Gln
180     185     190
His Phe Arg Val Leu Gly Leu Leu His Lys Gly Lys Thr Ala Asp Glu
195     200     205
Glu Glu Ile Arg Asn Trp Ala Ser Ser Pro Glu Tyr Tyr Arg Lys Lys
210     215     220
Trp Tyr Phe Arg Thr Leu Ala Ile Leu Ile Pro Thr Ala Asn Ala Val
225     230     235     240
Cys Ile Gly Leu Ala Ile Ala Gly Ile Ile Ser Phe Thr Thr Trp Gly
245     250     255
Ile Val Phe Ala Ser Ile Gly Leu Phe Ser Ser Ser Phe Ser Lys Gly
260     265     270
Ile Ser Arg Met Gln Ser Val Tyr Gly Lys Lys Met Leu Ile Leu Thr
275     280     285
Thr Tyr Ala Arg Leu Ile His Ile Ile Glu Glu Lys Lys Met Arg Cys
290     295     300
Ser Ala Leu Lys Glu Ile Lys Glu Leu Val Gly Gly Glu Lys Gln Thr
305     310     315     320
Ala Ser Gln Ala Val Lys Arg Leu Thr Glu Leu Met Asn Ala Leu Asp
325     330     335
Gln Arg Asn Asn Met Leu Met Gln Phe Val Leu Asn Gly Leu Phe Phe
340     345     350
Trp Glu Leu Arg Gln Val Met Lys Ile Glu Ala Trp Lys Glu Asn Tyr
355     360     365
Ala Ala His Leu Pro Asp Trp Leu Glu Ala Ile Gly Glu Met Asp Ala
370     375     380
Tyr Cys Ser Leu Ala Cys Phe Ala Tyr Asn His Pro Gly Tyr Val Phe
385     390     395     400
Pro Glu Ile Ala Ser Lys Pro Phe Cys Val Glu Ala Glu Ala Leu Gly
405     410     415
His Pro Leu Met Asn Arg Asn Lys Cys Val Arg Asn Asp Ile Arg Ile
420     425     430
Ala Lys Arg Pro Phe Phe Ile Ile Ile Thr Gly Ala Asn Met Ala Gly
435     440     445
Lys Ser Thr Tyr Leu Arg Thr Ile Gly Val Ser Tyr Leu Leu Ala Cys

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450		455		460
Ile Gly Ala Pro Val Trp	Ala Glu Lys Met Lys	Leu Tyr Pro Ala Gln		
465		470	475	480
Leu Val Thr Ser Leu Arg Thr Thr Asp Ser	Leu Ala Asp Asn Glu Ser			
	485	490	495	
Tyr Phe Phe Ala Glu Leu Lys Arg Leu Lys	Leu Ile Ile Asp Lys Leu			
	500	505	510	
Asn Ser Gly Glu Glu Leu Phe Ile Ile Leu Asp	Glu Ile Leu Lys Gly			
	515	520	525	
Thr Asn Ser Met Asp Lys Gln Lys Gly Ser Phe	Ala Leu Ile Lys Gln			
	530	535	540	
Phe Met Ala Leu Gln Ala Asn Gly Ile Ile Ala	Thr His Asp Leu Leu			
545		550	555	560
Leu Gly Ser Leu Ile Asp Leu Phe Pro Lys Asp	Ile His Asn Tyr Cys			
	565	570	575	
Phe Glu Ala Asp Ile Thr Asn Asn Glu Leu Thr	Phe Ser Tyr Lys Leu			
	580	585	590	
Arg Asp Gly Ile Ala Gln Asn Met Asn Ala Cys	Phe Leu Met Lys Lys			
	595	600	605	
Met Gly Ile Ala Val Ile Asp Asp				
610	615			

<210> 7082
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 7082
Glu Asp Lys Ala Met Ser Arg Ile Gly Lys Leu Pro Ile Ser Ile Pro
1 5 10 15
Ala Gly Val Thr Val Thr Leu Lys Asp Asp Val Val Thr Val Lys Gly
20 25 30
Pro Lys Gly Glu Leu Ser Gln Tyr Val Asn Pro Ala Ile Asn Val Ala
35 40 45
Ile Glu Asp Gly His Ile Thr Leu Thr Glu Asn Glu Asn Ala Met Leu
50 55 60
Asp Asn Pro Lys Gln Lys His Ala Phe His Gly Leu Tyr Arg Ser Leu
65 70 75 80
Val His Asn Met Val Val Gly Val Ser Glu Gly Tyr Lys Lys Glu Leu
85 90 95
Glu Leu Val Gly Val Gly Tyr Arg Ala Ser Asn Gln Gly Asn Ile Ile
100 105 110
Glu Leu Ala Leu Gly Tyr Thr His Asn Ile Phe Ile Gln Leu Pro Pro
115 120 125
Glu Val Lys Val Glu Thr Lys Ser Glu Arg Asn Lys Asn Pro Leu Ile
130 135 140
Leu Leu Glu Ser Cys Asp Lys Gln Leu Leu Gly Gln Val Cys Ser Lys
145 150 155 160
Ile Arg Ser Phe Arg Lys Pro Glu Pro Tyr Lys Gly Lys Gly Ile Lys
165 170 175
Phe Val Gly Glu Glu Ile Arg Arg Lys Ser Gly Lys Ser Ala Gly Ala
180 185 190
Lys

<210> 7083
 <211> 203
 <212> PRT
 <213> B.fragilis

<400> 7083

Lys Glu Met Ala Arg Tyr Pro Gly Pro Lys Ser Arg Ile Ala Arg Lys
 1 5 10 15
 Phe Gly Glu Gly Ile Phe Gly Ala Asp Lys Val Leu Ser Lys Lys Asn
 20 25 30
 Tyr Pro Pro Gly Gln His Gly Asn Ser Arg Lys Arg Lys Thr Ser Glu
 35 40 45
 Tyr Gly Ile Gln Leu Arg Glu Lys Gln Lys Ala Lys Tyr Thr Tyr Gly
 50 55 60
 Val Leu Glu Lys Gln Phe Arg Asn Leu Phe Glu Lys Ala Ala Thr Ala
 65 70 75 80
 Lys Gly Ile Thr Gly Glu Val Leu Leu Gln Met Leu Glu Gly Arg Leu
 85 90 95
 Asp Asn Ile Val Phe Arg Leu Gly Ile Ala Pro Thr Arg Ala Ala Ala
 100 105 110
 Arg Gln Leu Val Gly His Lys His Ile Thr Val Asp Gly Gln Val Val
 115 120 125
 Asn Ile Pro Ser Tyr Ala Val Lys Pro Gly Gln Leu Ile Gly Val Arg
 130 135 140
 Glu Arg Ser Lys Ser Leu Glu Val Ile Ala Asn Ser Leu Ala Gly Phe
 145 150 155 160
 Asn His Ser Lys Tyr Ala Trp Leu Glu Trp Asp Glu Ala Ser Lys Val
 165 170 175
 Gly Lys Leu Leu His Ile Pro Glu Arg Ala Asp Ile Pro Glu Asn Ile
 180 185 190
 Lys Glu His Leu Ile Val Glu Leu Tyr Ser Lys
 195 200

<210> 7084

<211> 162

<212> PRT

<213> B.fragilis

<400> 7084

Lys Met Arg His Asn Lys Lys Phe Asn His Leu Gly Arg Thr Ala Ser
 1 5 10 15
 His Arg Ser Ala Met Leu Ser Asn Met Ala Cys Ser Leu Ile Lys His
 20 25 30
 Lys Arg Ile Thr Thr Thr Val Ala Lys Ala Lys Ala Leu Lys Lys Phe
 35 40 45
 Val Glu Pro Leu Ile Thr Lys Ser Lys Glu Asp Thr Thr Asn Ser Arg
 50 55 60
 Arg Val Val Phe Ser Asn Leu Gln Asp Lys Leu Ala Val Thr Glu Leu
 65 70 75 80
 Phe Lys Glu Ile Ser Val Lys Ile Ala Asp Arg Pro Gly Gly Tyr Thr
 85 90 95
 Arg Ile Ile Lys Thr Gly Asn Arg Leu Gly Asp Asn Ala Glu Met Cys
 100 105 110
 Phe Ile Glu Leu Val Asp Tyr Asn Glu Asn Met Ala Lys Glu Lys Val
 115 120 125
 Ala Lys Lys Ala Thr Arg Thr Arg Arg Ser Lys Lys Thr Thr Glu Ala
 130 135 140
 Ala Pro Ala Ala Glu Val Pro Ala Thr Glu Glu Pro Lys Ala Glu Ser
 145 150 155 160
 Ala Glu

<210> 7085

<211> 335
 <212> PRT
 <213> B.fragilis

<400> 7085

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Ile Ile Ile Asn Phe Met Ala Ile Leu Ala Phe Gln Lys Pro Asp Lys
1           5           10           15
Val Leu Met Leu Glu Ala Asp Ala Lys Phe Gly Lys Phe Glu Phe Arg
          20           25           30
Pro Leu Glu Pro Gly Phe Gly Ile Thr Val Gly Asn Ala Leu Arg Arg
          35           40           45
Ile Leu Leu Ser Ser Leu Glu Gly Phe Ala Ile Thr Thr Ile Arg Ile
          50           55           60
Glu Gly Val Glu His Glu Phe Ser Ser Val Pro Gly Val Lys Glu Asp
65           70           75           80
Val Thr Asn Ile Ile Leu Asn Leu Lys Gln Val Arg Phe Lys Gln Val
          85           90           95
Val Glu Glu Phe Glu Ser Glu Lys Val Ser Ile Thr Ile Glu Asn Ser
          100          105          110
Ser Glu Phe Lys Ala Gly Asp Ile Gly Lys Tyr Leu Thr Gly Phe Glu
          115          120          125
Val Leu Asn Pro Glu Leu Val Ile Cys His Leu Asp Ser Lys Ala Thr
          130          135          140
Met Gln Ile Asp Ile Thr Ile Asn Lys Gly Arg Gly Tyr Val Pro Ala
145          150          155          160
Asp Glu Asn Arg Glu Tyr Cys Thr Asp Val Asn Val Ile Pro Ile Asp
          165          170          175
Ser Ile Tyr Thr Pro Ile Arg Asn Val Lys Tyr Ala Val Glu Asn Phe
          180          185          190
Arg Val Glu Gln Lys Thr Asp Tyr Glu Lys Leu Val Leu Glu Ile Thr
          195          200          205
Thr Asp Gly Ser Ile His Pro Lys Glu Ala Leu Lys Glu Ala Ala Lys
          210          215          220
Ile Leu Ile Tyr His Phe Met Leu Phe Ser Asp Glu Lys Ile Thr Leu
225          230          235          240
Glu Ser Asn Asp Val Asp Gly Asn Glu Glu Phe Asp Glu Glu Val Leu
          245          250          255
His Met Arg Gln Leu Leu Lys Thr Lys Leu Val Asp Met Asp Leu Ser
          260          265          270
Val Arg Ala Leu Asn Cys Leu Lys Ala Ala Asp Val Glu Thr Leu Gly
          275          280          285
Asp Leu Val Gln Phe Asn Lys Thr Asp Leu Leu Lys Phe Arg Asn Phe
          290          295          300
Gly Lys Lys Ser Leu Thr Glu Leu Asp Asp Leu Leu Glu Ser Leu Asn
305          310          315          320
Leu Ser Phe Gly Thr Asp Ile Ser Lys Tyr Lys Leu Asp Lys Glu
          325          330          335

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<210> 7086
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 7086

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Ile Tyr Cys Leu Asn Ile Val Arg Val Val Leu Ile Asn Leu Ile Ile
1           5           10           15
Phe Tyr Met Thr Asp Pro Ile Ala Asp Tyr Leu Thr Arg Leu Arg Asn
          20           25           30
Ala Ile Asn Ala Lys His Arg Val Val Glu Val Pro Ala Ser Asn Leu

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      35              40              45
Lys Lys Glu Ile Thr Lys Ile Leu Phe Glu Lys Gly Tyr Ile Leu Asn
  50              55              60
Tyr Lys Phe Val Glu Asp Gly Pro Gln Gly Thr Ile Lys Val Ala Leu
  65              70              75              80
Lys Tyr Asp Ser Val Asn Lys Val Asn Ala Ile Lys Lys Leu Glu Arg
      85              90              95
Ile Ser Ser Pro Gly Met Arg Gln Tyr Thr Gly Tyr Lys Asp Met Pro
      100              105              110
Arg Val Ile Asn Gly Leu Gly Ile Ala Ile Ile Ser Thr Ser Lys Gly
      115              120              125
Val Met Thr Asn Lys Glu Ala Ala Glu Leu Lys Ile Gly Gly Glu Val
      130              135              140
Leu Cys Tyr Val Tyr
145

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<210> 7087
<211> 186
<212> PRT
<213> B.fragilis

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<400> 7087
Val Met Ser Asn Thr Ala Ser Leu Lys Lys Glu Tyr Ala Glu Arg Ile
  1              5              10              15
Ala Pro Ala Leu Lys Ser Gln Phe Gln Tyr Ser Ser Thr Met Gln Ile
      20              25              30
Pro Val Leu Lys Lys Ile Val Ile Asn Gln Gly Leu Gly Met Ala Val
      35              40              45
Ala Asp Lys Lys Ile Ile Glu Val Ala Ile Asn Glu Met Thr Ala Ile
      50              55              60
Thr Gly Gln Lys Ala Val Ala Thr Ile Ser Arg Lys Asp Ile Ala Asn
      65              70              75              80
Phe Lys Leu Arg Lys Lys Met Pro Ile Gly Val Met Val Thr Leu Arg
      85              90              95
Arg Glu Arg Met Tyr Glu Phe Leu Glu Lys Leu Val Arg Val Ala Leu
      100              105              110
Pro Arg Ile Arg Asp Phe Lys Gly Ile Glu Thr Lys Phe Asp Gly Lys
      115              120              125
Gly Asn Tyr Thr Leu Gly Ile Gln Glu Gln Ile Ile Phe Pro Glu Ile
      130              135              140
Asn Ile Asp Ser Ile Thr Arg Ile Leu Gly Met Asn Ile Thr Phe Val
      145              150              155              160
Thr Ser Ala Gln Thr Asp Glu Glu Gly Tyr Ala Leu Leu Lys Glu Phe
      165              170              175
Gly Leu Pro Phe Lys Asn Ala Lys Lys Asp
      180              185

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<210> 7088
<211> 100
<212> PRT
<213> B.fragilis

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<400> 7088
Ile Met Ala Lys Glu Ser Met Lys Ala Arg Glu Ile Lys Arg Ala Lys
  1              5              10              15
Leu Val Ala Lys Tyr Ala Glu Lys Arg Ala Ala Leu Lys Gln Ile Val
      20              25              30
Arg Thr Gly Asp Pro Ala Glu Ala Phe Glu Ala Ala Gln Lys Leu Gln
      35              40              45

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3553

Glu Leu Pro Lys Asn Ser Asn Pro Ile Arg Met His Asn Arg Cys Lys
 50 55 60
 Leu Thr Gly Arg Pro Lys Gly Tyr Ile Arg Gln Phe Gly Val Ser Arg
 65 70 75 80
 Ile Gln Phe Arg Glu Met Ala Ser Asn Gly Leu Ile Pro Gly Val Lys
 85 90 95
 Lys Ala Ser Trp
 100

<210> 7089
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 7089
 Tyr Met Ala Lys Gln Ser Ala Ile Glu Gln Asp Gly Val Ile Val Glu
 1 5 10 15
 Ala Leu Ser Asn Ala Met Phe Arg Val Glu Leu Glu Asn Gly His Glu
 20 25 30
 Ile Thr Ala His Ile Ser Gly Lys Met Arg Met His Tyr Ile Lys Ile
 35 40 45
 Leu Pro Gly Asp Lys Val Arg Val Glu Met Ser Pro Tyr Asp Leu Ser
 50 55 60
 Lys Gly Arg Ile Val Phe Arg Tyr Lys
 65 70

<210> 7090
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 7090
 Leu Phe Val Glu Tyr Lys Thr Asn Tyr Asn Met Asn Leu Ser Asn Leu
 1 5 10 15
 Lys Pro Ala Glu Gly Ser Thr Lys Thr Arg Lys Arg Ile Gly Arg Gly
 20 25 30
 Pro Gly Ser Gly Leu Gly Gly Thr Ser Thr Arg Gly His Lys Gly Ala
 35 40 45
 Lys Ser Arg Ser Gly Tyr Ser Lys Lys Ile Gly Phe Glu Gly Gly Gln
 50 55 60
 Met Pro Leu Gln Arg Arg Val Pro Lys Phe Gly Phe Lys Asn Ile Asn
 65 70 75 80
 Arg Ile Glu Tyr Lys Ala Ile Asn Leu Glu Thr Ile Gln Lys Leu Ala
 85 90 95
 Glu Ala Lys Lys Leu Glu Lys Val Gly Val Asn Asp Phe Ile Glu Ala
 100 105 110
 Gly Phe Ile Ser Ser Ser Gln Leu Val Lys Val Leu Gly Asn Gly Thr
 115 120 125
 Leu Thr Ala Lys Leu Ser Val Glu Ala His Ala Phe Ser Lys Ser Ala
 130 135 140
 Val Ala Ala Ile Glu Ala Ala Gly Gly Asn Val Val Lys Leu
 145 150 155

<210> 7091
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 7091

Thr Val Gly Leu Asn Asn Leu Leu Tyr Leu Gln Ala Asp Met Ala Lys
 1 5 10 15
 Phe Ile Lys Ile Ile Leu Phe Met Leu Phe Ala Val Ala Leu His Ser
 20 25 30
 Val Ala Asn Asp Tyr Phe Ala Glu Lys Gln Ala Glu Gln Asp Ile Tyr
 35 40 45
 Met Ala Met Ser Thr Met Lys Gly Asp Thr His Glu Thr Val Ser Ser
 50 55 60
 Pro Gln Thr Pro Tyr Phe Pro Asp Ala Glu Leu Ala Gly Thr Gly Ile
 65 70 75 80
 Gln Thr His Gln Ile Ala Met Ser Arg Ile Gln Arg Ile Gln Ala Ala
 85 90 95
 Glu Ser Ile Phe Ser Leu Lys Ala Leu Ala Gln Arg Leu Ala Asp Arg
 100 105 110
 Asp Ala Val Leu Ser Gln His Trp Gly Lys Leu Tyr Glu Thr Thr Thr
 115 120 125
 Ser Tyr Trp Trp His Pro Val Ser Glu Tyr Tyr Val Phe Ala Leu Arg
 130 135 140
 Arg Ile Ile Val
 145

<210> 7092
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 7092
 Ile Cys Ile Ile Met Thr Thr Lys Ile Glu Arg Arg Ile Lys Ile Lys
 1 5 10 15
 Tyr Arg Val Arg Asn Lys Val Ser Gly Thr Ala Ala Arg Pro Arg Met
 20 25 30
 Ser Val Phe Arg Ser Asn Lys Gln Ile Tyr Val Gln Ile Ile Asp Asp
 35 40 45
 Leu Ser Gly Lys Thr Leu Ala Ala Ser Ser Leu Gly Met Thr Glu
 50 55 60
 Lys Leu Pro Lys Lys Glu Val Ala Ala Lys Val Gly Glu Ile Ile Ala
 65 70 75 80
 Lys Lys Ala Gln Glu Ala Gly Ile Thr Thr Val Val Phe Asp Arg Asn
 85 90 95
 Gly Tyr Leu Tyr His Gly Arg Val Lys Glu Val Ala Asp Ala Ala Arg
 100 105 110
 Asn Gly Gly Leu Lys Phe
 115

<210> 7093
 <211> 127
 <212> PRT
 <213> B.fragilis

<400> 7093
 Tyr Met Ala Ile Arg Ile Val Gly Val Asp Leu Pro Gln Asn Lys Arg
 1 5 10 15
 Gly Glu Ile Ala Leu Thr Tyr Val Tyr Gly Ile Gly Arg Ser Ser Ser
 20 25 30
 Ala Lys Ile Leu Asp Lys Ala Gly Val Asp Lys Asp Leu Lys Val Lys
 35 40 45
 Asp Trp Thr Asp Asp Gln Ala Ala Lys Ile Arg Glu Ile Ile Gly Ala
 50 55 60
 Glu Tyr Lys Val Glu Gly Asp Leu Arg Ser Glu Val Gln Leu Asn Ile

65				70				75				80			
Lys	Arg	Leu	Met	Asp	Ile	Gly	Cys	Tyr	Arg	Gly	Val	Arg	His	Arg	Ile
				85				90						95	
Gly	Leu	Pro	Val	Arg	Gly	Gln	Ser	Thr	Lys	Asn	Asn	Ala	Arg	Thr	Arg
			100					105						110	
Lys	Gly	Arg	Lys	Lys	Thr	Val	Ala	Asn	Lys	Lys	Lys	Ala	Thr	Lys	
		115					120					125			

<210> 7094
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 7094															
Ile	Leu	Ile	Ile	Met	Ala	Gly	Val	Asn	Asn	Arg	Val	Lys	Ile	Thr	Asn
1				5				10					15		
Asp	Ile	Glu	Leu	Lys	Asp	Arg	Leu	Val	Ala	Ile	Asn	Arg	Val	Thr	Lys
		20						25					30		
Val	Thr	Lys	Gly	Gly	Arg	Thr	Phe	Ser	Phe	Ser	Ala	Ile	Val	Val	Val
		35					40					45			
Gly	Asn	Glu	Glu	Gly	Ile	Ile	Gly	Trp	Gly	Leu	Gly	Lys	Ala	Gly	Glu
	50					55					60				
Val	Thr	Ala	Ala	Ile	Ala	Lys	Gly	Val	Glu	Ser	Ala	Lys	Lys	Asn	Leu
65					70					75					80
Thr	Arg	Val	Pro	Val	Leu	Lys	Gly	Thr	Val	Pro	His	Glu	Gln	Ser	Ala
				85					90					95	
Lys	Phe	Gly	Gly	Ala	Glu	Val	Phe	Ile	Lys	Pro	Ala	Ser	His	Gly	Thr
		100						105						110	
Gly	Val	Val	Ala	Gly	Gly	Ala	Met	Arg	Ala	Val	Leu	Glu	Ser	Val	Gly
		115					120					125			
Val	Thr	Asp	Val	Leu	Ala	Lys	Ser	Lys	Gly	Ser	Ser	Asn	Pro	His	Asn
	130					135						140			
Leu	Val	Lys	Ala	Thr	Ile	Met	Ala	Leu	Gly	Glu	Met	Arg	Asp	Ala	Arg
145					150					155					160
Met	Ile	Ala	Gln	Asn	Arg	Gly	Ile	Ser	Val	Glu	Lys	Val	Phe	Arg	Gly
			165						170					175	

<210> 7095
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 7095															
Val	Glu	Met	Ile	Phe	Leu	Lys	Thr	Glu	Asp	Glu	Ile	Glu	Leu	Leu	Arg
1				5				10					15		
Gln	Ser	Asn	Leu	Leu	Val	Gly	Arg	Thr	Leu	Ala	Glu	Val	Ala	Lys	Leu
		20						25					30		
Val	Lys	Pro	Gly	Val	Thr	Thr	Lys	Glu	Leu	Asp	Lys	Val	Ala	Glu	Glu
		35					40					45			
Phe	Ile	Arg	Asp	His	Gly	Ala	Val	Pro	Thr	Phe	Lys	Gly	Phe	Pro	Asn
	50				55						60				
Gln	Tyr	Gly	Asp	Pro	Phe	Pro	Ala	Ser	Leu	Cys	Thr	Ser	Val	Asn	Glu
65					70					75					80
Gln	Val	Val	His	Gly	Ile	Pro	Gly	Asp	Ile	Val	Leu	Lys	Asp	Gly	Asp
			85						90					95	
Ile	Val	Ser	Val	Asp	Cys	Gly	Thr	Tyr	Met	Asn	Gly	Phe	Cys	Gly	Asp
		100						105					110		
Ser	Ala	Tyr	Thr	Phe	Cys	Val	Gly	Glu	Val	Asp	Glu	Glu	Val	Arg	Gln
		115					120					125			

Leu Leu Lys Val Thr Lys Glu Ala Leu Tyr Ile Gly Ile Gln Asn Ala
 130 135 140
 Val Gln Gly Lys Arg Ile Gly Asp Ile Gly Tyr Ala Ile Gln Gln Tyr
 145 150 155 160
 Cys Glu Ser His Ser Tyr Gly Val Val Arg Glu Phe Val Gly His Gly
 165 170 175
 Ile Gly Lys Asp Met His Glu Asp Pro Gln Val Pro Asn Tyr Gly Lys
 180 185 190
 Arg Gly Tyr Gly Thr Leu Leu Lys Lys Gly Leu Cys Ile Ala Ile Glu
 195 200 205
 Pro Met Ile Thr Gln Gly Asp Arg Gln Val Ile Met Glu Arg Asp Gly
 210 215 220
 Trp Thr Val Arg Thr Arg Asp Arg Lys Cys Ala Ala His Phe Glu His
 225 230 235 240
 Thr Ile Ala Val Gly Ala Gly Glu Ala Asp Ile Leu Ser Ser Phe Lys
 245 250 255
 Phe Ile Glu Glu Val Leu Gly Asp Lys Ala Ile
 260 265

<210> 7096

<211> 215

<212> PRT

<213> B.fragilis

<400> 7096

Glu Phe Asn Leu Leu Val Leu Leu Leu Phe Tyr Val Ala Val Pro Gly
 1 5 10 15
 Ser Tyr Arg Cys Gly Ser Ile Tyr Gln Leu Leu Phe Thr Asn Asn Leu
 20 25 30
 Asn Phe Asn Ile Met Thr Thr Gln Ala Ile Asp Ala Thr Ile Phe Ala
 35 40 45
 Ser Ser His Pro Asp Ile Ala Lys Arg Thr Ser Val Ser Gly Leu Ile
 50 55 60
 Phe Ser Cys Ile Met Leu Leu Ala Gly Val Ile Ala Phe Val Ser Thr
 65 70 75 80
 Phe Glu Met Lys Asp Arg Ser Ser Thr Ile Ser Met Gly Leu Met Val
 85 90 95
 Leu Gly Thr Ala Leu Phe Leu Ile Gly Val Phe Arg Leu Phe Trp Lys
 100 105 110
 Ser Lys Glu Ile Val Tyr Leu Pro Thr Gly Ser Val Ala Lys Glu Gln
 115 120 125
 Ser Ile Phe Phe Asp Leu Lys His Leu Asp Glu Leu Thr Asp Met Val
 130 135 140
 Lys Ser Gly Asp Phe Ser Met Gln Ser Thr Ala Lys Gly Gly Thr Ser
 145 150 155 160
 Gly Asn Leu Arg Leu Asp Val Met Leu Ser Glu Asp Arg Lys Phe Ala
 165 170 175
 Ala Val Gln Leu Phe Gln Phe Val Pro Tyr Thr Tyr Asn Pro Val Thr
 180 185 190
 Ser Val Arg Tyr Phe Thr Asn Gly Glu Ala Ala Ser Ile Ala Ala Phe
 195 200 205
 Leu Thr Lys Thr Lys Gly His
 210 215

<210> 7097

<211> 134

<212> PRT

<213> B.fragilis

<400> 7097

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Ile Ile Ile Val Asp Met Ala Lys Lys Thr Val Ala Ala Lys Lys Arg
1      5      10      15
Asn Val Lys Val Asp Ala Asn Gly Gln Leu His Val His Ser Ser Phe
      20      25      30
Asn Asn Ile Ile Val Ser Leu Ala Asn Ser Glu Gly Gln Ile Ile Ser
      35      40      45
Trp Ser Ser Ala Gly Lys Met Gly Phe Arg Gly Ser Lys Lys Asn Thr
      50      55      60
Pro Tyr Ala Ala Gln Met Ala Ala Gln Asp Cys Ala Lys Ile Ala Phe
      65      70      75      80
Asp Leu Gly Leu Arg Lys Val Lys Ala Tyr Val Lys Gly Pro Gly Asn
      85      90      95
Gly Arg Glu Ser Ala Ile Arg Thr Ile His Gly Ala Gly Ile Glu Val
      100      105      110
Thr Glu Ile Ile Asp Val Thr Pro Leu Pro His Asn Gly Cys Arg Pro
      115      120      125
Pro Lys Arg Arg Arg Val
      130

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<210> 7098

<211> 452

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (67)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7098

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Asn Ser Asp Ser Met Arg Lys Ala Ile Glu Ser Ser Lys Asn Ile Trp
1      5      10      15
Lys Ile Glu Asp Leu Arg Gln Arg Ile Leu Ile Thr Ile Leu Phe Val
      20      25      30
Ala Ile Tyr Arg Phe Gly Ser Tyr Val Val Phe Pro Gly Ile Asn Pro
      35      40      45
Gly Met Leu Thr Gln Leu His Arg Gln Thr Ser Glu Gly Leu Leu Ala
      50      55      60
Leu Leu Xaa Val Phe Ser Gly Ala Ala Phe Ser Asn Ala Ser Ile Phe
      65      70      75      80
Ala Leu Gly Ile Met Pro Tyr Ile Cys Ala Ser Ile Val Ile Gln Leu
      85      90      95
Leu Gly Ile Val Val Pro Tyr Phe Gln Ile Leu Gln Arg Glu Gly Glu
      100      105      110
Ser Gly Arg Arg Lys Met Asn Gln Tyr Thr Arg Tyr Leu Thr Ile Ala
      115      120      125
Ile Leu Leu Val Gln Ala Pro Ser Tyr Leu Leu Asn Leu Lys Met Gln
      130      135      140
Ala Gly Pro Ser Leu Asn Ala Ser Leu Asp Trp Thr Leu Phe Met Val
      145      150      155      160
Thr Ser Thr Ile Ile Leu Ala Ala Gly Ser Met Phe Ile Leu Trp Leu
      165      170      175
Gly Glu Arg Ile Thr Asp Lys Gly Ile Gly Asn Gly Ile Ser Phe Ile
      180      185      190
Ile Leu Ile Gly Ile Ile Ala Arg Leu Pro Gln Ser Leu Phe Gln Glu
      195      200      205
Leu Ile Ser Arg Met Thr Asp Lys Thr Gly Gly Leu Ile Met Phe Leu
      210      215      220

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Phe Glu Ile Val Phe Leu Leu Ile Val Ile Ala Gly Ala Ile Leu Leu
 225 230 235 240
 Val Gln Gly Thr Arg Lys Ile Pro Val Gln Tyr Ala Lys Arg Ile Val
 245 250 255
 Gly Asn Lys Gln Tyr Gly Gly Ala Arg Gln Tyr Ile Pro Leu Lys Val
 260 265 270
 Asn Ala Ala Gly Val Met Pro Ile Ile Phe Ala Gln Ala Ile Met Phe
 275 280 285
 Ile Pro Ile Thr Phe Ile Gly Phe Ser Asn Thr Asn Asn Val Ser Gly
 290 295 300
 Phe Val His Ala Phe Thr Asp His Thr Ser Phe Trp Tyr Asn Phe Val
 305 310 315 320
 Phe Ala Val Met Ile Ile Leu Phe Thr Tyr Phe Tyr Thr Ala Ile Thr
 325 330 335
 Ile Asn Pro Thr Gln Met Ala Glu Asp Met Lys Arg Asn Asn Gly Phe
 340 345 350
 Ile Pro Gly Ile Lys Pro Gly Lys Lys Thr Ala Glu Tyr Ile Asp Asp
 355 360 365
 Ile Met Ser Arg Ile Thr Leu Pro Gly Ser Phe Phe Leu Ala Phe Ile
 370 375 380
 Ala Ile Met Pro Ala Phe Ala Gly Ile Phe Gly Val Lys Ala Glu Phe
 385 390 395 400
 Ala Gln Phe Phe Gly Thr Ser Leu Leu Ile Leu Val Gly Val Val
 405 410 415
 Leu Asp Thr Leu Gln Gln Val Glu Ser His Leu Leu Met Arg His Tyr
 420 425 430
 Asp Gly Leu Leu Lys Ser Gly Arg Ile Lys Gly Arg Thr Gly Ser Ser
 435 440 445
 Val Ala Ala Tyr
 450

<210> 7099
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 7099
 Ile Gln Lys Ser His Pro Lys Asp Lys Asn Thr Ile Asn Ser Ala Asp
 1 5 10 15
 Thr Asp Ser Met Pro Arg Leu Pro Ile Tyr Lys Ala Arg Ser Met Val
 20 25 30
 Gly Asn Phe Ile Asp Met Ala Glu Lys Ile Thr Ile Ala Ile Ala Leu
 35 40 45
 Ile Pro Lys Gln Arg Leu Lys Asp Arg Gly Glu Ser Pro
 50 55 60

<210> 7100
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 7100
 Ala Ser Ile Pro Pro Pro Ile Gly Ala Met Thr Val Ala Ile Pro Phe
 1 5 10 15
 Ile Pro Pro Ile Thr Ala Ser Met Pro Ala Ser Cys Cys Pro Glu Tyr
 20 25 30
 Ser Ser Val Ala Met Glu Arg Glu Ile Thr Thr Pro Pro Ala Pro Ala
 35 40 45
 Met Pro Cys Lys Asn Arg Asp Val Thr Asn Cys Glu Met Val Cys Glu

50		55		60
Lys Met His Pro Thr Val Ala Ser Arg Asn Arg Ile Met Ala Arg Ser				
65		70		75
Asn Gly Gly Arg Arg Pro Tyr Leu Ser Leu Lys Gly Pro Lys Ile Asn				80
		85		90
Cys Pro Ala Ala Lys Pro Ile Met Leu Val Val Ser Pro Asn Cys Thr				95
		100		105
Ile Glu Asp Glu Val Trp Lys Lys Ser Ala Ile Ala Gly Lys Val Gly				110
		115		120
Lys Tyr Met Ser Ile Ile Lys Gly Pro Lys Ala Leu Asn Thr Pro Lys				125
		130		135
Asn Asn Asn Lys Asn Arg Leu Glu Phe Cys Leu Ser Val Ile Ala Ile				140
		145		150
Leu Phe Asp Gln Tyr Gly Cys Lys Ile Thr Pro Ser Val Arg Asn Arg				155
		165		170
				175
Ile				

<210> 7101

<211> 759

<212> PRT

<213> B.fragilis

<400> 7101

Thr Tyr Ser Thr Met Lys Phe Lys Thr Phe Leu Ala Gly Cys Leu Gly				
1		5		10
Gly Leu Leu Ser Leu Asn Ser Cys Thr Asn Ser Pro Asp Met Thr Asp				15
		20		25
Tyr Val Ala Tyr Val Asn Pro Phe Ile Gly Thr Gly Gly His Gly His				30
		35		40
Thr Phe Pro Gly Ala Ile Val Pro His Gly Met Ile Ser Pro Ser Pro				45
		50		55
Asp Thr Arg Ile Asp Gly Trp Asp Ala Cys Ser Gly Tyr Tyr Tyr Ala				60
		65		70
Asp Phe Thr Ile Asn Gly Phe Ser His Thr His Leu Ser Gly Thr Gly				75
		85		90
Cys Cys Asp Tyr Gly Asp Val Leu Leu Met Pro Thr Val Gly Glu Gln				95
		100		105
Lys Tyr Leu Pro Thr Gly Ser Gln Ser Gln Gln Met Ala Tyr Ala Ser				110
		115		120
Ala Phe Ser His Gln Asn Glu Thr Ala Glu Pro Gly Tyr Tyr Ser Val				125
		130		135
Phe Leu Asp Thr Tyr Gln Val Lys Ala Glu Leu Thr Ala Ser Lys Arg				140
		145		150
Ala Ala Ile His Arg Tyr Thr Phe Pro Glu Ser Lys Glu Ala Gly Phe				155
		165		170
Ile Leu Asp Leu Asp Tyr Ser Leu Gln Arg Gln Thr Asn Lys Glu Met				175
		180		185
Glu Ile Glu Val Ile Ser Pro Thr Glu Ile Cys Gly Arg Lys Lys Thr				190
		195		200
Met Tyr Trp Ala Phe Asp Gln Tyr Ile Asn Phe Tyr Ala Lys Phe Ser				205
		210		215
Lys Pro Phe Thr Tyr Thr Leu Val Thr Asp Ser Met Ala Leu Asp Asp				220
		225		230
Gly Gly Arg Leu Leu Pro Thr Cys Lys Ala Leu Leu His Phe Asp Thr				235
		245		250
Thr Lys Asp Glu Gln Val Phe Val Lys Val Gly Ile Ser Ala Val Asp				255
		260		265
Ile Glu Gly Ala Arg Lys Asn Val Glu Thr Glu Ile Pro Asp Trp Asp				270

Thr Asp Arg Arg Pro Gln Pro
755

<210> 7102

<211> 802

<212> PRT

<213> B.fragilis

<400> 7102

Glu	Gly	Ile	Thr	Glu	Thr	Glu	Ser	Ile	Leu	Ser	Pro	Pro	Ala	Val	Tyr	1	5	10	15
Asn	Ala	Pro	Ser	Ala	Leu	Met	Ile	Thr	Ser	Arg	Asn	Thr	Lys	Arg	Arg	20	25	30	
Ile	Asn	Gln	His	Thr	Ser	Ser	Phe	Val	Leu	His	Leu	Tyr	Ser	Leu	Pro	35	40	45	
Leu	His	Thr	Lys	Ser	Ile	Asn	Tyr	Leu	Lys	Asn	Ser	Asn	Pro	Ser	Arg	50	55	60	
Met	Lys	Val	Leu	Phe	His	Ser	Leu	Phe	Ile	Leu	Leu	Phe	Val	Phe	Thr	65	70	75	80
Ala	Cys	Thr	Ser	Thr	Pro	Lys	Gln	Ala	Thr	Ile	Asp	Tyr	Thr	Gln	Tyr	85	90		95
Val	Asn	Pro	Phe	Ile	Gly	Thr	Asp	Phe	Thr	Gly	Asn	Thr	Tyr	Pro	Gly	100	105		110
Ala	Gln	Val	Pro	Phe	Gly	Met	Val	Gln	Leu	Ser	Pro	Asp	Asn	Gly	Leu	115	120		125
Pro	Gly	Trp	Asp	Arg	Ile	Ser	Gly	Tyr	Phe	Tyr	Pro	Asp	Ser	Thr	Ile	130	135		140
Ala	Gly	Phe	Ser	His	Thr	His	Leu	Ser	Gly	Thr	Gly	Ala	Gly	Asp	Leu	145	150		155
Tyr	Asp	Ile	Ser	Phe	Met	Pro	Val	Thr	Leu	Pro	Tyr	Lys	Glu	Ala	Glu	165	170		175
Thr	Pro	Leu	Gly	Ile	Tyr	Ser	Lys	Phe	Ser	His	Gln	Asp	Glu	Ser	Ala	180	185		190
Thr	Ala	Gly	Tyr	Tyr	Gln	Val	Leu	Leu	Lys	Asp	Tyr	Gly	Ile	Asn	Val	195	200		205
Glu	Leu	Thr	Ala	Thr	Glu	Arg	Cys	Gly	Ile	Gln	Arg	Tyr	Thr	Phe	Pro	210	215		220
Glu	Ala	Lys	Ala	Ala	Ile	Phe	Leu	Asn	Leu	Lys	Lys	Ala	Met	Asn	Trp	225	230		235
Asp	Phe	Thr	Asn	Asp	Ser	His	Ile	Glu	Val	Ile	Asp	Ser	Val	Thr	Ile	245	250		255
Gln	Gly	Tyr	Arg	Phe	Ser	Asp	Gly	Trp	Ala	Arg	Asp	Gln	His	Val	Tyr	260	265		270
Phe	Arg	Thr	Arg	Phe	Ser	Lys	Pro	Phe	Thr	Ala	Val	Gln	Met	Asp	Thr	275	280		285
Thr	Ala	Ile	Leu	Lys	Asp	Gly	Lys	Arg	Met	Gly	Thr	Ala	Thr	Ile	Ala	290	295		300
Arg	Phe	Asp	Phe	Asp	Thr	Gln	Lys	Gly	Glu	Gln	Ile	Leu	Val	Asn	Thr	305	310		315
Ala	Leu	Ser	Gly	Val	Ser	Met	Glu	Gly	Ala	Ala	Gln	Asn	Leu	Ala	Ala	325	330		335
Glu	Val	Pro	Glu	Asp	Asn	Phe	Asp	Lys	Tyr	Arg	Glu	Ala	Ala	Arg	Asp	340	345		350
Asn	Trp	Asn	Arg	Gln	Leu	Ser	Lys	Ile	Ala	Val	Lys	Gly	Asp	His	Lys	355	360		365
Asp	Asp	Trp	Val	Asn	Phe	Tyr	Thr	Ala	Leu	Tyr	His	Thr	Met	Leu	Ala	370	375		380
Pro	Thr	Ile	Tyr	Ser	Asp	Val	Asp	Gly	Ser	Tyr	Tyr	Gly	Pro	Asp	Lys	385	390		395
																			400

4000 3561 7102 802 PRT B.fragilis

Lys Ile His His Thr Asp Gly Trp Val Asn Tyr Ser Thr Phe Ser Leu
 405 410 415
 Trp Asp Thr Tyr Arg Ala Ala His Pro Leu Phe Thr Tyr Thr Glu Pro
 420 425 430
 Glu Arg Thr Asn Asp Met Val Gln Ser Phe Leu Ala Phe Tyr Glu Gln
 435 440 445
 Asn Gly Arg Leu Pro Val Trp Asn Phe Tyr Gly Ser Glu Thr Asp Met
 450 455 460
 Met Ile Gly Tyr His Ala Val Pro Val Ile Val Asp Ala Tyr Leu Lys
 465 470 475 480
 Gly Ile Gly Asn Phe Asp Pro Lys Lys Ala Leu Glu Ala Cys Val Ala
 485 490 495
 Thr Ala Asn Leu Asp Asn Tyr Arg Gly Ile Gly Ala Tyr Lys Glu Leu
 500 505 510
 Gly Tyr Val Pro Phe Asn Glu Lys Asp Ser Tyr Asn Ala Glu Asn Trp
 515 520 525
 Ser Leu Ser Lys Thr Leu Glu Tyr Ala Tyr Asp Asp Tyr Cys Ile Ala
 530 535 540
 Arg Met Ala Glu Lys Leu Gly Lys Lys Glu Ile Ala Asp Glu Phe Tyr
 545 550 555 560
 Lys Arg Ser Gln Asn Tyr Arg Asn Val Tyr Asn Pro Ala Thr Ser Phe
 565 570 575
 Met Gln Pro Arg Asp Asp Lys Gly Glu Phe Gln Lys Asp Phe Lys Ala
 580 585 590
 Asp Ala Tyr Thr Pro His Ile Cys Glu Ser Asn Gly Trp Gln Tyr Phe
 595 600 605
 Trp Ser Val Gln His Asp Ile Asp Gly Leu Ile Gly Leu Thr Gly Gly
 610 615 620
 Lys Glu Arg Phe Ala Gln Lys Leu Asp Ser Met Phe Thr Phe His Pro
 625 630 635 640
 Ser Ala Asp Asp Glu Leu Pro Leu Phe Ser Thr Gly Met Ile Gly Gln
 645 650 655
 Tyr Ala His Gly Asn Glu Pro Ser His His Val Ile Tyr Leu Tyr Asn
 660 665 670
 Ala Val Asp Gln Pro Trp Lys Thr Gln Glu Tyr Val Ala Lys Val Met
 675 680 685
 Asn Glu Leu Tyr Leu Asn Ser Pro Ala Gly Leu Cys Gly Asn Glu Asp
 690 695 700
 Cys Gly Gln Met Ser Ala Trp Tyr Val Phe Ser Ala Met Gly Phe Tyr
 705 710 715 720
 Pro Val Asn Pro Ile Ser Gly Gln Tyr Glu Ile Gly Thr Pro Leu Phe
 725 730 735
 Pro Glu Val Gln Leu His Leu Asp Asn Gly Lys Thr Phe Thr Val Lys
 740 745 750
 Ala Pro Thr Val Ser Lys Glu Asn Ile Tyr Ile Arg Ser Thr Lys Leu
 755 760 765
 Asn Gly Lys Pro Tyr Asp Lys Ser Tyr Ile Thr His Glu Gln Ile Met
 770 775 780
 Ser Gly Ala Thr Leu Glu Phe Glu Met Gly Lys Glu Lys Val Thr Ser
 785 790 795 800
 Asp Gln

<210> 7103

<211> 1220

<212> PRT

<213> B.fragilis

<400> 7103

Val	Val	Gly	Leu	Asn	Ile	Gly	Leu	Gly	Cys	Ile	Thr	Gln	Ala	Asp	Ile
1				5					10					15	
Arg	Phe	Val	Gly	Gly	Tyr	Ser	Pro	Trp	Phe	Ser	Ser	Leu	Pro	Phe	Leu
		20						25					30		
Asn	Ile	Asn	Ser	Met	Leu	Asn	Phe	Lys	His	Leu	Phe	Leu	Val	Ser	Val
		35					40					45			
Ala	Leu	Trp	Ser	Ala	Val	Gly	Met	Val	Arg	Ala	Gln	Glu	Phe	Asp	Pro
	50					55					60				
Lys	Gln	Ser	Tyr	Glu	Ile	His	Thr	Gln	Asn	Gly	Leu	Val	Leu	Asp	Asn
65				70					75					80	
Gln	Glu	Ser	Leu	Asp	Leu	Gly	Ser	Lys	Ile	Phe	Ile	Ser	Lys	Lys	Glu
				85					90					95	
Pro	His	Lys	Glu	Ser	Gln	Val	Trp	Asn	Leu	Ile	Pro	Cys	Gly	Asp	Gly
			100					105					110		
Cys	Tyr	Ser	Ile	Val	Ser	Pro	Leu	Thr	Glu	Leu	Gly	Ile	Asp	Asn	Ser
		115					120					125			
Gly	Asn	Gly	Ser	Lys	Glu	Cys	Pro	Val	Ile	Gln	Trp	Asp	Pro	Asn	Lys
	130					135					140				
Glu	Asn	Pro	Asn	Gln	Gln	Trp	Arg	Ile	Thr	Ala	Leu	Pro	Asn	Gly	Asn
145				150						155					160
Tyr	Leu	Phe	Thr	Ser	Val	Ala	Ser	Gly	Tyr	Asn	Leu	Gly	Phe	Pro	Asp
				165					170					175	
Ala	Gly	Leu	Val	Ala	Glu	Pro	Val	Tyr	Gln	Leu	Lys	Pro	Asp	Ala	Gln
		180						185					190		
Lys	Ile	Ser	Gln	Gln	Trp	Lys	Ile	Val	Lys	Ser	Asn	Leu	Lys	Val	Val
		195					200					205			
Ala	Glu	Ala	Phe	Lys	Thr	Arg	Ser	Asp	Asn	Asp	Trp	Glu	Asn	Glu	Arg
	210					215					220				
Ile	Phe	Ala	Val	Asn	Lys	Glu	Glu	Gly	Arg	Ser	Thr	Phe	Val	Pro	Phe
225				230						235					240
Ala	Asp	Thr	Glu	Glu	Met	Lys	Gly	Asp	Pro	Ser	Tyr	Thr	Arg	Pro	Trp
				245					250					255	
Ile	Arg	Asn	Gln	Ser	Ser	Arg	Tyr	Leu	Leu	Leu	Asn	Gly	Asp	Trp	Lys
		260						265					270		
Phe	His	Trp	Val	Lys	Gln	Pro	Ser	Glu	Arg	Pro	Val	Asp	Phe	Tyr	Lys
		275					280					285			
Pro	Gly	Tyr	Asp	Val	Ser	Ala	Trp	Lys	Glu	Ile	Pro	Val	Pro	Ser	Asn
	290					295					300				
Trp	Glu	Met	Leu	Gly	Tyr	Gly	Thr	Pro	Ile	Tyr	Thr	Asn	Ile	Thr	Tyr
305					310					315					320
Pro	Ile	Arg	Asn	Asn	Pro	Pro	Phe	Ile	Gln	Gly	Gln	Arg	Gly	Tyr	Thr
			325						330					335	
Val	Glu	Lys	Glu	Pro	Asn	Ala	Val	Gly	Ser	Tyr	Arg	Arg	Glu	Phe	Ser
			340					345					350		
Leu	Pro	Ala	Asp	Trp	Lys	Asn	Lys	Glu	Val	Phe	Ile	His	Phe	Asp	Gly
		355					360					365			
Val	Tyr	Ser	Ala	Met	Tyr	Leu	Trp	Ile	Asn	Gly	Lys	Lys	Val	Gly	Tyr
	370					375					380				
Ser	Gln	Gly	Ala	Asn	Asn	Asp	Ala	Glu	Phe	Asn	Ile	Thr	Gln	Tyr	Val
385				390						395					400
Lys	Pro	Gly	Lys	Asn	Ile	Leu	Ala	Val	Glu	Val	Tyr	Arg	Trp	Ser	Asp
			405						410					415	
Gly	Ser	Tyr	Leu	Glu	Asp	Gln	Asp	Met	Phe	Arg	Leu	Ser	Gly	Ile	His
			420					425					430		
Arg	Asp	Val	Tyr	Leu	Val	Ala	Thr	Pro	Lys	Leu	Arg	Leu	Arg	Asp	Val
		435					440					445			
His	Leu	Thr	Ser	Val	Ile	Ser	Asp	Arg	Phe	Asp	Lys	Ala	Asp	Leu	Cys
	450					455					460				
Val	Lys	Ala	Asp	Val	Lys	Asn	Tyr	Gly	Lys	Ser	Ala	Val	Asn	Ala	Ser

465		470		475		480
Val Arg Ile Ala	Leu Asp Ala Gly Gly Arg Thr	Leu Arg Thr Phe				
	485	490	495			
Thr Thr Ala Ala	Gly Asn Leu Ala Ala Gly Lys Glu Ile Cys Leu Pro					
	500	505	510			
Ala Lys Ala Ser Ile Arg Asp Pro Gln Leu Trp Ser Ala Glu Thr Pro						
	515	520	525			
Tyr Leu Tyr Thr Val Asn Leu Glu Leu Leu Asp Ala Ser Gly Lys Val						
	530	535	540			
Leu Glu Ala Thr Thr Gln Gln Tyr Gly Phe Arg Lys Ile Glu Ile Arg						
545	550	555	560			
Asp Asn Lys Val Tyr Ile Asn Asp Ala Leu Val Leu Phe Lys Gly Ala						
	565	570	575			
Asn Arg His Asp Ile His Pro Arg Phe Gly Lys Ala Val Pro Val Glu						
	580	585	590			
Ser Met Ile Glu Asp Ile Leu Leu Phe Lys Arg Phe Asn Leu Asn Thr						
	595	600	605			
Ile Arg Thr Ser His Tyr Pro Asn Asp Pro Lys Met Tyr Ala Leu Phe						
610	615	620				
Asp Tyr Tyr Gly Leu Tyr Val Met Asp Glu Ala Asp Leu Glu Cys His						
625	630	635	640			
Gly Asn Met Met Leu Thr Lys Arg Glu Ser Trp Lys Glu Ala Phe Val						
	645	650	655			
Asp Arg Val Val Arg Met Val Lys Arg Asp Lys Asn His Pro Ser Val						
	660	665	670			
Ile Phe Trp Ser Met Gly Asn Glu Ser Gly Gly Gly Pro Asn Phe Glu						
	675	680	685			
Ala Ala Tyr Gln Ala Ala Arg Glu Ile Asp Ala Arg Phe Ile His Tyr						
690	695	700				
Glu Gly Met Asn Asp Val Ala Asp Met Asp Ser Arg Met Tyr Pro Ser						
705	710	715	720			
Ile Glu Ser Met Ile Ala Gln Asp Asn Glu Pro Arg Asn Lys Pro Phe						
	725	730	735			
Phe Leu Cys Glu Tyr Ala His Ala Met Gly Asn Ala Val Gly Asn Leu						
	740	745	750			
Glu Glu Tyr Trp Asp Tyr Ile Ala Asn Gln Ser Lys Arg Met Ile Gly						
	755	760	765			
Gly Cys Ile Trp Asp Trp Val Asp Gln Gly Ile Asn Lys Pro Gly Glu						
	770	775	780			
Ala Pro Asp Arg Tyr Tyr Phe Gly Gly Ser Phe Gly Asp Arg Pro Asn						
785	790	795	800			
Asp Asn Asp Phe Cys Cys Asn Gly Leu Val Thr Pro Asp Arg Arg Val						
	805	810	815			
Thr Pro Lys Leu Trp Glu Val Lys Lys Val Tyr Gln Tyr Met Thr Phe						
	820	825	830			
Glu Glu Val Gly Glu Asn Asn Val Gly Leu Arg Asn His Tyr Ser Phe						
	835	840	845			
Leu Asn Met Arg His Phe Asn Leu Arg Tyr Val Ile Leu Lys Asp Gly						
	850	855	860			
Val Pro Val Ala Glu Glu Glu Phe Gly Leu Pro Asp Gly Lys Pro Gly						
865	870	875	880			
Glu His Arg Thr Ile His Ile Pro Tyr Leu Arg His Leu Thr Glu Asp						
	885	890	895			
Ala Asp Tyr His Ile Asn Leu Glu Val Lys Leu Lys His Asp Cys Val						
	900	905	910			
Trp Ala Lys Ala Gly His Val Val Ala Thr Glu Gln Phe Leu Leu Arg						
	915	920	925			
Glu Arg Lys Gln Lys Thr Glu Val Pro Glu Leu Ser Ala Ser Leu Gln						
930	935	940				

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Val Val Glu Glu Arg Gln Tyr Ile Arg Phe Arg Ala Pro Gly Thr Glu
945          950          955          960
Ile Ser Phe Asp Ser Lys Thr Gly Met Met Ile Gly Leu Arg Tyr Asp
          965          970          975
Gly Gln Asn Met Ile His Gly Gln Gln Gly Pro Ala Leu Asn Trp Tyr
          980          985          990
Arg Ser Ile Ser Asn Asp Pro Arg Glu Trp Ile Gln Pro Val Val Val
          995          1000          1005
Leu Arg Gly Phe Asp Trp Lys Leu Ala Glu Asp Gly Lys Ser Ala Ser
          1010          1015          1020
Val Gln Ser Gln Ile Glu Val Lys Val Gly Gln Val Asn Ile Pro Tyr
1025          1030          1035          1040
Thr Val Arg Tyr Arg Val Tyr Ser Asn Gly Arg Val Asp Val Ala Ala
          1045          1050          1055
Asp Phe Thr Thr Glu Ser Asn Phe Asp Leu Pro Arg Leu Gly Leu Gln
          1060          1065          1070
Met Phe Leu Asn Pro Ser Leu Glu Gln Val Glu Trp Tyr Gly Arg Gly
          1075          1080          1085
Pro Met Glu Asn Tyr Arg Asp Arg Lys Asn Ala Ala Tyr Met Gly Arg
          1090          1095          1100
Tyr Lys Thr Thr Val Thr Asp Met Ala Glu His Tyr Ala Arg Ala Gln
1105          1110          1115          1120
Thr Met Gly Glu Arg Thr Asp Thr His Trp Leu Ala Leu Thr Asp Gly
          1125          1130          1135
Gln Gly Lys Gly Leu Arg Ile Thr Ala Thr Asp Thr Leu Asp Phe Ser
          1140          1145          1150
Ala Gln His Tyr Thr Asp Lys Asp Leu Trp Gln Val Lys Tyr Gly His
          1155          1160          1165
Asp Leu Ser Asp Ile Arg Arg Ala Glu Val Val Leu Asn Leu Asp Cys
          1170          1175          1180
Ile Gln Arg Gly Leu Gly Asn Ala Ser Cys Gly Pro Gly Pro Arg Pro
1185          1190          1195          1200
His Tyr Glu Ile Arg Lys Asp Thr Val Tyr Ser Tyr Ser Phe Arg Met
          1205          1210          1215
Glu Pro Leu Arg
          1220

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<210> 7104

<211> 378

<212> PRT

<213> B.fragilis

<400> 7104

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Lys Arg Gln His Lys Glu His Leu Ile Asn Lys Lys Leu Lys Gln Lys
1      5      10      15
Met Lys Arg Ile Val Phe Leu Asp Tyr Val Arg Val Phe Ala Cys Phe
          20      25      30
Leu Val Met Ile Val His Ser Ser Glu Asn Phe Tyr Gly Ala Ala Gly
          35      40      45
Ser Thr Asp Met Ala Gly Pro Gln Ser Tyr Leu Ala Ser Glu Ala Asp
          50      55      60
Arg Leu Trp Val Ala Val Tyr Asp Gly Phe Ser Arg Met Ala Val Pro
65      70      75      80
Leu Phe Met Ile Val Ser Ala Phe Leu Leu Ala Pro Met Lys Glu Glu
          85      90      95
Gln Thr Thr Trp Gln Phe Tyr Arg Gln Arg Phe Leu Arg Ile Ile Pro
          100      105      110
Pro Phe Phe Ile Phe Met Ile Leu Tyr Ser Thr Leu Pro Met Leu Trp
          115      120      125

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Gly Gln Ile Asn Gly Glu Thr Ser Leu Thr Asp Leu Ser Arg Ile Phe
 130 135 140
 Leu Asn Phe Pro Thr Leu Ala Gly His Leu Trp Phe Met Tyr Pro Leu
 145 150 155 160
 Ile Ser Leu Tyr Leu Phe Ile Pro Ile Ile Ser Pro Trp Leu Arg Lys
 165 170 175
 Ala Ser Ala Lys Glu Glu Arg Phe Phe Ile Gly Leu Phe Leu Leu Ser
 180 185 190
 Thr Cys Ile Pro Tyr Leu Asn Arg Trp Cys Gly Glu Val Trp Gly Gln
 195 200 205
 Cys Phe Trp Asn Glu Tyr His Met Leu Trp Tyr Phe Ser Gly Tyr Leu
 210 215 220
 Gly Tyr Leu Val Leu Ala His Tyr Ile His Thr His Leu Thr Trp Ser
 225 230 235 240
 Arg Ser Lys Arg Phe Ile Ile Gly Thr Ile Leu Met Val Ile Gly Ala
 245 250 255
 Val Leu Thr Ile Tyr Ser Phe Tyr Ser Gln Ala Ile Pro Gly Glu Thr
 260 265 270
 Leu Ser Thr Pro Val Ile Glu Ile Gly Trp Ala Phe Cys Thr Ile Asn
 275 280 285
 Cys Val Leu Leu Thr Ala Gly Thr Phe Leu Met Phe Thr Cys Ile Asn
 290 295 300
 Ser Ser Lys Ala Pro Arg Ile Ile Thr Glu Met Ser Lys Leu Ser Tyr
 305 310 315 320
 Gly Met Tyr Leu Met His Ile Phe Trp Leu Gly Leu Trp Ala Thr Val
 325 330 335
 Phe Lys Tyr Thr Leu Ala Leu Pro Thr Val Ala Ala Ile Pro Cys Ile
 340 345 350
 Ala Val Ser Thr Phe Ile Cys Cys Phe Ile Thr Ser Lys Leu Ile Ser
 355 360 365
 Phe Ile Pro Gly Ser Lys Trp Ile Ile Gly
 370 375

<210> 7105
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7105
 Pro Tyr Ser Asn Val His Pro Met Ile His Leu Leu Pro Gly Met Asn
 1 5 10 15
 Glu Met Ser Phe Glu Val Met Lys Gln Gln Ile Asn Val Leu Thr Ala
 20 25 30
 Met His Gly Ile Ala Ala Thr Val Gly Ser Ala Arg Val Tyr Leu Asn
 35 40 45
 Thr Val Ala His Asn Pro Asn Gln Lys Ile Cys Ile Arg Tyr Ile Pro
 50 55 60

<210> 7106
 <211> 234
 <212> PRT
 <213> B.fragilis

<400> 7106
 Thr Lys Lys Asn Ile Phe Ile Met Lys Thr Val Phe Asn Ile Val Leu
 1 5 10 15
 Gly Val Cys Ala Ile Ala Leu Val Tyr Ile Cys Tyr Ala Ser Ile Met
 20 25 30
 Gly Pro Ile Asn Phe Glu Lys Ala Lys Lys His Arg Asp Lys Ala Val

```

      35              40              45
Val Ala Arg Leu Ile Asp Ile Arg Lys Ala Gln Ala Glu Tyr Arg Asn
  50              55              60
Ile Tyr Lys Gln Tyr Thr Ala Ser Phe Asp Thr Leu Ile Asp Phe Val
  65              70              75              80
Lys Thr Gln Lys Ile Pro Phe Val Ser Lys Glu Gly Val Leu Ser Asp
      85              90              95
Lys Gln Leu Glu Asp Gly Met Thr Glu Lys Lys Ala Met Ala Leu Ile
      100              105              110
Asn Lys Ala Lys Lys Thr Asn Asn Trp Lys Glu Val Glu Ala Ala Gly
      115              120              125
Leu Met Gly Phe Lys Arg Asp Thr Ile Trp Val Ala Val Thr Asp Thr
      130              135              140
Ile Tyr Asp Lys Ser Phe Asn Ala Asp Ser Leu Arg Tyr Val Pro Phe
      145              150              155              160
Gly Asn Gly Ala Gln Phe Glu Met Tyr Thr Lys Asn Asp Thr Thr Lys
      165              170              175
Ser Gly Ala Pro Ile Phe Leu Phe Gln Ala Asn Thr Pro Tyr Asp Val
      180              185              190
Tyr Leu Asn Gly Leu Asp Lys Gln Glu Ile Ala Asn Leu Lys Asp Leu
      195              200              205
Gln Val Lys Leu Gly Lys Tyr Ala Gly Leu Met Val Gly Ser Ile Asp
      210              215              220
Thr Pro Asn Asn Gly Ala Gly Asn Trp Glu
      225              230

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<210> 7107

<211> 736

<212> PRT

<213> B.fragilis

<400> 7107

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Ser Met Lys Asn Lys Ile Leu Phe Gln Arg Pro Arg Leu Leu Lys Ala
  1              5              10              15
Ser Leu Val Leu Leu Leu Ala Ala Ala Pro Ile Gln Trp Ser Phe Ala
      20              25              30
Gln Phe Thr Phe Ser Thr Ser Arg Thr Thr Leu Gly Gln Val Ile Lys
      35              40              45
Thr Val Gln Ser Gln Ser Lys Tyr Gln Phe Phe Tyr Asp Asp Gln Ser
      50              55              60
Ser Asn Met Pro Ile Glu Asn Leu Asn Val Lys Asn Val Ser Leu Glu
      65              70              75              80
Gln Leu Leu Asn Thr Ala Leu Lys Gly Lys Asn Leu Thr Tyr Lys Ile
      85              90              95
Glu Asp Asn Ile Val Tyr Leu Ser Gln Ala Ser Lys Gln Gln Asp Pro
      100              105              110
Val Gln Ala Ser Ala Lys Arg Gln Ile Ser Gly Thr Val Val Asp Ala
      115              120              125
Asn Gly Glu Ala Leu Ile Gly Val Asn Val Ser Val Lys Gly Thr Ser
      130              135              140
Thr Gly Ala Ile Thr Asp Leu Glu Gly Lys Tyr Thr Leu Thr Val Asn
      145              150              155              160
Asp Pro Lys Ala Glu Ile Val Phe Ser Tyr Ile Gly Tyr Lys Gln Gln
      165              170              175
Val Leu Pro Ala Lys Glu Ser Ile Leu Asn Val Thr Met Ser Glu Asp
      180              185              190
Thr Gln Met Ile Ser Glu Val Val Val Thr Ala Leu Gly Ile Lys Arg
      195              200              205
Glu Lys Lys Met Leu Gly Tyr Ala Val Gln Glu Ile Lys Gly Asp Gln

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210	215	220
Leu Asn Gln Thr Gly Asp	Pro Ser Val Thr Ser	Ala Leu Gln Gly Lys
225	230	235
Val Ala Gly Leu Gln Met	Asn Thr Ala Gly Thr	Gly Leu Gly Gly Ser
245	250	255
Thr Lys Ile Thr Ile Arg	Gly Asn Ser Ser Leu	Ala Asp Asn Asn Gln
260	265	270
Pro Leu Trp Ile Val Asp	Gly Val Pro Phe Ser	Asp Asn Asn Asn Ser
275	280	285
Asp Ala Thr Tyr Tyr Gly	Gly Val Asp Arg Gly	Gly Ser Ser Val Asp
290	295	300
Ile Asn Pro Glu Asp Ile	Glu Ser Ile Ser Val	Leu Lys Gly Pro Asn
305	310	315
Ala Ala Ala Leu Tyr Gly	Ser Arg Ala Gly Asn	Gly Val Ile Leu Val
325	330	335
Thr Thr Lys Lys Gly Ser	Lys Lys Asp Gly Phe	Gly Val Arg Tyr Ser
340	345	350
Gly Asn Phe Thr Trp Ser	Gln Val Ala Glu Thr	Leu Glu Met Gln Asp
355	360	365
Arg Tyr Gly Gln Gly His	Ile Val Thr Gln Asp	Glu Asn Lys Asn Pro
370	375	380
Leu Ser Gln Tyr Tyr Ala	Lys Tyr Asp Pro Thr	Asp Ser Ser Ser Trp
385	390	395
Gly Pro Val Leu Asp Gly	Ser Met Gln Lys Ala	Trp Asn Gly Asp Thr
405	410	415
Tyr Ala Phe Ser Lys Tyr	Gly Asn Lys Leu Lys	Asp Tyr Phe Asp Thr
420	425	430
Gly Phe Ala Gln Asn His	Asn Val Ser Val Ser	Asn Val Thr Asp Lys
435	440	445
Ser His Phe Arg Ala Ser	Phe Gly Ser Ser Asn	Asn Lys Gly Val Phe
450	455	460
Pro Asn Glu Lys Leu Asn	Arg Ile Asn Leu Asp	Leu Asn Ala Gly Met
465	470	475
Glu Met Asn Lys Tyr Leu	Ser Met Asp Gly Lys	Ile Ser Leu Ser Arg
485	490	495
Thr Lys Ala Glu Asp Arg	Pro Tyr Phe Gly Thr	Tyr Gly Ala Ile Ala
500	505	510
Gln Leu Met Gly Ile Pro	Asn Asn Ile Arg Leu	Asp Asp Leu Lys Gln
515	520	525
Tyr Ser Thr Asp Gly Asn	Ala His Val Asn Trp	Thr Gly Pro Thr Ala
530	535	540
Gly Ile Arg Asn Pro Tyr	Tyr Val Leu Asn Gln	Arg His Asn Ser Asp
545	550	555
Glu Arg Trp Arg Ala Phe	Gly Tyr Tyr Gly Met	Lys Ile Asn Phe Thr
565	570	575
Asp Trp Leu His Leu Ser	Ala Lys Tyr Ala Phe	Asp Tyr Tyr Arg Thr
580	585	590
Arg Ile Glu Glu Thr Asn	Ala Gly Asp Gly Ile	Asn Gly Glu Ser Ser
595	600	605
Ile Lys Asp Ile Thr Asp	Asp Glu Met Asn Arg	Glu Glu Gln Asn Phe
610	615	620
Phe Glu Ser Asn Ala Glu	Ile Val Leu Met Gly	Asp Lys Gln Leu Thr
625	630	635
Asp Asn Phe Arg Leu Gly	Phe Thr Val Gly Gly	Asn Phe Met Tyr Gln
645	650	655
Asn Tyr Glu Ser Leu Asn	Ala Gly Val Arg Asn	Met Leu Asp Lys Gly
660	665	670
Gln Trp Ile Phe Asn Ala	Ala Asn Met Leu Asn	Ala Ala Gly Glu Thr
675	680	685

Gly His Glu Arg Ala Thr Asn Ser Val Phe Gly Ser Leu Gln Leu Ser
 690 695 700
 Cys Lys Gln Tyr Leu Ser Leu Asp Leu Thr Ala Arg Asn Asp Trp Ser
 705 710 715 720
 Ser Thr Leu Pro Lys Lys Asn Thr Leu Ser Ser Thr Cys Leu Pro Thr
 725 730 735

<210> 7108
 <211> 347
 <212> PRT
 <213> B.fragilis

<400> 7108
 Tyr Ser Glu Lys Ser Ser Ala Lys Ile Ala Cys Phe Tyr Tyr Phe Cys
 1 5 10 15
 Arg Ile Asn Lys Arg Asn Ile Tyr Lys Met Arg Lys Val Tyr Tyr Ile
 20 25 30
 Tyr Asn Pro Gln Thr Gln Thr Tyr Asp Arg Ile Tyr Pro Thr Val Arg
 35 40 45
 Gln Arg Ala Leu Ser Ile Leu Arg Arg Leu Phe Ile Gly Met Gly Leu
 50 55 60
 Gly Ala Gly Ser Phe Ile Ile Leu Leu Leu Ile Phe Gly Ser Pro Ser
 65 70 75 80
 Glu Lys Glu Leu Arg Lys Glu Asn Ser Gln Leu Leu Ala Gln Tyr Asn
 85 90 95
 Val Leu Ser Arg Arg Leu Asp Glu Ala Met Gly Val Leu Gln Asp Ile
 100 105 110
 Gln Gln Arg Asp Asp Asn Leu Tyr Arg Val Ile Phe Met Ala Asp Pro
 115 120 125
 Val Ser Pro Ala Ile Arg Gln Ala Gly Tyr Gly Gly Thr Asn Arg Tyr
 130 135 140
 Glu Gln Leu Met Asp Met Ala Asn Ser Lys Leu Val Ile Asn Thr Thr
 145 150 155 160
 Gln Lys Met Asp Val Leu Ser Lys Gln Leu Tyr Ile Gln Ser Lys Ser
 165 170 175
 Phe Asp Asp Val Val Ala Met Cys Lys Asn His Asp Gln Met Leu Lys
 180 185 190
 Cys Ile Pro Ala Ile Gln Pro Ile Ser Asn Lys Asp Leu Arg Lys Thr
 195 200 205
 Ala Ser Gly Tyr Gly Thr Arg Val Asp Pro Ile Tyr Gly Thr Thr Lys
 210 215 220
 Phe His Ala Gly Met Asp Phe Ser Ala His Pro Gly Thr Asp Val Tyr
 225 230 235 240
 Ala Thr Gly Asp Gly Thr Val Val Lys Met Gly Trp Glu Thr Gly Tyr
 245 250 255
 Gly Asn Thr Val Glu Ile Asp His Gly Phe Gly Tyr Arg Thr Arg Tyr
 260 265 270
 Ala His Leu Gln Glu Phe Arg Thr Lys Leu Gly Lys Lys Val Val Arg
 275 280 285
 Gly Glu Val Ile Ala Gly Val Gly Ser Thr Gly Lys Ser Thr Gly Pro
 290 295 300
 His Leu His Tyr Glu Val His Val Lys Gly Gln Val Val Asn Pro Val
 305 310 315 320
 Asn Tyr Tyr Phe Met Asp Leu Ser Ala Glu Asp Tyr Glu Arg Met Ile
 325 330 335
 Gln Ile Ala Ala Asn His Gly Lys Val Phe Asp
 340 345

<210> 7109

<211> 135
 <212> PRT
 <213> B.fragilis

<400> 7109

Lys	Ile	Arg	Lys	Met	Lys	Gln	Arg	Val	Thr	Ser	Asn	His	Ile	Glu	Arg
1				5					10					15	
Leu	Gln	Pro	Asn	Glu	Ile	Phe	Val	Phe	Gly	Ser	Asn	Leu	Ser	Gly	His
			20					25					30		
His	Gly	Gly	Gly	Ala	Ala	Leu	Leu	Ala	Met	Asn	Lys	Trp	Gly	Ala	Ile
		35					40					45			
Trp	Gly	Gln	Gly	Val	Gly	Leu	Gln	Gly	Gln	Thr	Tyr	Gly	Ile	Pro	Thr
	50					55				60					
Met	Gln	Gly	Gly	Val	Glu	Thr	Ile	Arg	Pro	Tyr	Val	Asp	Glu	Phe	Ile
65					70					75					80
Gln	Phe	Ala	Asn	Lys	His	Pro	Glu	Met	Thr	Phe	Leu	Val	Thr	Glu	Ile
			85						90					95	
Gly	Cys	Gly	Ile	Ala	Gly	Phe	Thr	Pro	Gln	Glu	Ile	Ala	Pro	Leu	Phe
			100					105					110		
Ala	Lys	Ala	Thr	Thr	Thr	Glu	Asn	Ile	His	Leu	Pro	Gln	Arg	Phe	Trp
		115					120						125		
Asp	Leu	Leu	Glu	Arg	Ile	Pro									
	130					135									

<210> 7110
 <211> 126
 <212> PRT
 <213> B.fragilis

<400> 7110

Leu	Lys	Glu	Lys	Lys	Ile	Met	Gln	Asn	Thr	Glu	Arg	Asp	Leu	Lys	Leu
1				5					10					15	
Tyr	Tyr	Ser	Ile	Ser	Glu	Val	Ala	Gln	Met	Phe	Asp	Val	Asn	Glu	Ser
			20					25					30		
Leu	Leu	Arg	Phe	Trp	Glu	Lys	Glu	Phe	Pro	Gln	Ile	Ser	Pro	Lys	Lys
		35					40					45			
Gly	Ser	Arg	Gly	Val	Arg	Gln	Tyr	Arg	Lys	Glu	Asp	Val	Glu	Thr	Ile
	50					55					60				
Arg	Leu	Ile	Tyr	His	Leu	Val	Lys	Glu	Arg	Gly	Met	Thr	Leu	Pro	Gly
65					70				75						80
Ala	Arg	Gln	Lys	Leu	Lys	Asp	Asn	Arg	Glu	Ala	Thr	Ile	Arg	Asn	Phe
			85						90					95	
Glu	Ile	Ile	Asp	Arg	Leu	Lys	Gln	Ile	Arg	Gln	Glu	Leu	Ile	Gly	Met
			100					105					110		
Arg	Asp	Ala	Leu	Asp	Gly	Phe	Ser	Thr	Lys	Thr	Gly	Gly	Ala		
		115					120						125		

<210> 7111
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7111

Lys	Glu	Glu	Asn	Arg	Cys	Phe	Lys	Ser	Gln	Arg	Ile	Val	Gly	Phe	Lys
1				5					10					15	
Gly	Arg	Ile	Leu	Trp	Phe	Ser	Ile	Asn	Ile	Leu	Asn	Leu	Lys	Tyr	Leu
			20					25					30		
Phe	Val	Ser	Glu	Ser	Trp	Leu	Met	Val	Cys	Phe	Asp	Phe	Ile	Phe	Ser
		35					40						45		

Arg Leu His Trp Ile Leu Asn Leu Leu Leu Ala Phe Cys Gln Glu Arg
 50 55 60
 Thr Pro
 65

<210> 7112
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 7112
 His Ala Ser Leu Ile Asn Met Arg Val Ile Ser Gly Ile Tyr Lys Arg
 1 5 10 15
 Arg Arg Phe Asp Val Pro Arg Thr Phe Lys Ala Arg Pro Thr Thr Asp
 20 25 30
 Phe Ala Lys Glu Asn Leu Phe Asn Val Leu Ser Asn Tyr Met Asn Phe
 35 40 45
 Glu Glu Gly Ile Val Ala Leu Asp Leu Phe Ala Gly Thr Gly Ser Ile
 50 55 60
 Ser Ile Glu Leu Val Ser Arg Gly Cys Asp Arg Val Ile Ser Val Glu
 65 70 75 80
 Lys Glu Gly Ala His His Ala Phe Ile Ser Lys Ile Met Lys Glu Val
 85 90 95
 Gln Thr Asp Lys Cys Leu Pro Ile Arg Gly Asp Val Phe Lys Phe Ile
 100 105 110
 Asn Gly Ser His Glu Arg Phe Asp Phe Ile Phe Ala Asp Pro Pro Tyr
 115 120 125
 Glu Leu Lys Glu Leu Glu Thr Ile Pro Asp Leu Ile Phe Lys Asn Asn
 130 135 140
 Leu Leu Lys Glu Asp Gly Leu Phe Val Leu Glu His Gly Lys Lys Asn
 145 150 155 160
 Asn Phe Glu Asp His Pro His Phe Ile Glu Arg Arg Val Tyr Gly Ser
 165 170 175
 Val Asn Phe Ser Phe Phe Arg
 180

<210> 7113
 <211> 389
 <212> PRT
 <213> B.fragilis

<400> 7113
 Met Lys Gln Glu Lys Gln Thr Glu Leu Leu Arg Thr Gln Gln Met Leu
 1 5 10 15
 Asn Glu Val Asn Arg Lys Leu Leu Met Thr Leu Gly Val Ala Glu Val
 20 25 30
 Phe Pro Trp Lys Trp Glu Leu Ala Glu His Met Val Trp Phe Asp Ala
 35 40 45
 Arg Pro Ser Asp Asp Pro Ala Gly Trp Glu Ile Phe His Asn Asp Ser
 50 55 60
 Phe Pro Val Ser Ile Ala Arg Val Tyr Gln Gly Ile Tyr Lys Glu Asp
 65 70 75 80
 Arg Leu Arg Val Ile Glu Ala Cys Arg Gly Ile Leu Lys Gly Lys Met
 85 90 95
 Lys Lys Val Val Glu Leu Arg Phe Trp Ala Lys Lys Arg Glu Gly
 100 105 110
 Phe Val Leu Glu Trp Leu Glu Met His Ala Ile Pro Gly Lys Val Asp
 115 120 125
 Glu Asn Gly Arg Leu Leu Thr Val Glu Gly Ser Leu Met Ser Ile Thr

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      130              135              140
Arg Arg Lys Val Met Glu Glu Leu Thr Ala Ala Lys Glu Lys Ala
145              150              155              160
Glu Glu Ala Asn Arg Leu Lys Ser Ala Leu Ile Ala Asn Met Asn His
      165              170              175
Glu Ile Arg Thr Pro Leu Asn Ala Ile Val Gly Phe Ala Ser Leu Leu
      180              185              190
Ser Ile Ile Asp Asp Glu Lys Glu Gln Gln Glu Tyr Ile Gly Leu Ile
      195              200              205
Gln Ser Asn Thr Glu His Leu Leu Arg Leu Met Asn Asp Val Ile Asp
      210              215              220
Leu Ser Asn Ile Glu Ser Gly Val Met Asp Ile Val Gly Ser Asp Val
225              230              235              240
Val Leu Asp Ser Leu Met Lys Glu Met Glu Leu Thr Tyr Val Pro Lys
      245              250              255
Ala Glu Thr Asn Asn Leu Val Leu Ala Trp Asp Arg Glu Gln Ser Asn
      260              265              270
Ala His Ile Tyr Thr Asp Arg Asp Arg Leu Ile Gln Ile Leu Glu His
      275              280              285
Leu Leu Asp Asn Ala Ile Lys Phe Thr Thr Lys Gly Thr Val Arg Trp
      290              295              300
Gly Tyr Gln Glu Lys Glu Asn Gly Gln Ile Arg Phe Tyr Val Thr Asp
305              310              315              320
Thr Gly Cys Gly Ile Pro Asn Asp Lys Lys Glu Val Ile Phe Glu Arg
      325              330              335
Phe Val Lys Leu Asp Ser Phe Thr Gln Gly Leu Gly Leu Gly Leu Ser
      340              345              350
Leu Cys Lys Ile Ile Ile Glu Arg Met His Gly Thr Ile Gly Val Glu
      355              360              365
Ser Glu Val Gly Glu Gly Ser Thr Phe Trp Phe Thr Ile Pro Asn Leu
      370              375              380
Ser Asp Asn His Ile
385

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<210> 7114

<211> 375

<212> PRT

<213> B.fragilis

<400> 7114

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Val Leu Ser Phe Thr Ile Tyr Leu Arg Thr Pro Ile Phe Ala Val His
1              5              10              15
Lys Lys His Arg Thr Ile Met Ser Lys Gln Glu Val Ile Leu Cys Glu
      20              25              30
Asp Leu Glu Ser Ser Leu Lys Arg Ala Ile Asp Asn Cys Pro His Asp
      35              40              45
Arg Leu Phe Ile Leu Thr Asp Asp His Thr His Arg Leu Cys Leu Ser
      50              55              60
Gln Leu Ala Gly Leu Ser Ile Leu Lys Asp Ala Val Glu Ile Thr Ile
      65              70              75              80
Gly Ala Glu Asp Val His Lys Thr Leu Glu Thr Leu Ala Ser Val Trp
      85              90              95
Gln Val Leu Ser Glu Lys Gly Ala Thr Arg His Ser Leu Leu Ile Asn
      100              105              110
Leu Gly Gly Gly Met Val Thr Asp Leu Gly Gly Phe Ala Ala Ala Thr
      115              120              125
Phe Lys Arg Gly Ile Ala Tyr Ile Asn Ile Pro Thr Thr Leu Leu Ala
      130              135              140
Met Val Asp Ala Ser Val Gly Gly Lys Thr Gly Ile Asn Phe Asn Gly

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145 150 155 160
 Leu Lys Asn Glu Ile Gly Ala Phe Ala Pro Ala Ala Ser Val Leu Ile
 165 170 175
 Glu Thr Glu Phe Leu Arg Thr Leu Asp Ala His Asn Phe Phe Ser Gly
 180 185 190
 Tyr Ala Glu Met Leu Lys His Gly Leu Ile Ser Asn Thr Ser His Trp
 195 200 205
 Ala Glu Leu Leu Ala Phe Asp Thr Glu Lys Met Asp Tyr Gly Tyr Leu
 210 215 220
 Lys Lys Leu Val Gly His Ser Val Gln Val Lys Glu Asp Ile Val Glu
 225 230 235 240
 Gln Asp Pro Phe Glu His Gly Ile Arg Lys Ala Leu Asn Leu Gly His
 245 250 255
 Thr Val Gly His Ala Phe Glu Ser Leu Ala Leu Ala Glu Asn Arg Pro
 260 265 270
 Val Leu His Gly Tyr Ala Val Ala Trp Gly Ile Val Cys Glu Leu Tyr
 275 280 285
 Leu Ser His Leu Lys Ala Gly Phe Pro Lys Glu Lys Met Arg Gln Thr
 290 295 300
 Ile Gln Phe Ile Lys Asp Asn Tyr Gly Ala Phe His Phe Asp Cys Lys
 305 310 315 320
 Gln Tyr Asp Arg Leu Tyr Glu Phe Met Gln His Asp Lys Lys Asn Ser
 325 330 335
 Ala Gly Val Ile Asn Phe Thr Leu Leu Lys Glu Ile Gly Asp Ile Ser
 340 345 350
 Ile Asn Arg Thr Ala Asp Lys Asp Thr Ile Phe Glu Met Phe Asp Phe
 355 360 365
 Tyr Arg Glu Cys Met Gly Met
 370 375

<210> 7115

<211> 294

<212> PRT

<213> B.fragilis

<400> 7115

Thr Tyr Ile Cys Cys Leu Lys Gln Thr Phe Met Lys Thr Asp Arg Leu
 1 5 10 15
 Leu Ala Asp Thr Lys Thr Ile Arg Tyr Glu Glu Thr Asp Leu Ala Ser
 20 25 30
 Leu Ile Ser Ala Pro Tyr His Phe Arg Cys Gly Ile Tyr Leu Ile Cys
 35 40 45
 Thr Gln Gly Glu Ala Val Val Ser Thr Gly Val Gln Lys Tyr Ile Phe
 50 55 60
 Asn Glu Gln Thr Glu Leu Ile Phe Leu Thr Gly Gly Leu Leu Gln Val
 65 70 75 80
 Leu Glu Thr Ser Gly Asp Leu Gln Val Lys Met Leu Met Phe Pro Lys
 85 90 95
 Glu Ala Phe Leu Asn Ala Met Leu Pro Ile Asp Thr Pro Tyr Phe Asn
 100 105 110
 Tyr Thr His Glu His Pro Cys Tyr His His Thr Ala Asp Glu Arg Ser
 115 120 125
 Gln Lys Thr Trp Arg Gln Ile Asn Leu Trp Met Asp Met Ala Gln Met
 130 135 140
 Leu Phe Thr Glu Pro Met Pro Gln Phe Arg Gly Gln Gln Glu His Asn
 145 150 155 160
 Phe Leu Gln Ser Leu Leu Met Trp Leu Phe Asn Thr Ile Pro Glu Lys
 165 170 175
 Leu Ala Val Ser Lys Gln Tyr Ser Arg Thr Gln Leu Leu Cys His Arg

	180		185		190
Phe Met Gln	Leu Ile Arg Glu Tyr Ser Met His Glu His Gln Val Ala				
	195		200		205
Phe Tyr Ala	Glu Lys Leu Cys Ile Ser Ser Arg Tyr Leu His Lys Ile				
	210		215		220
Thr Val Arg His Leu Asp Gly Lys Lys Pro Lys Gln Leu Ile Asp Glu					
225		230		235	240
Gln Leu Val Ala Glu Ile Lys Val Leu Leu Asn Glu Pro Arg Leu Ser					
	245		250		255
Val Thr Glu Ile Ala Glu Gln Leu His Phe Pro Asp Gln Ser Tyr Leu					
	260		265		270
Thr His Phe Phe Lys Lys Asn Thr Gly Ile Ser Pro Lys Glu Phe Arg					
	275		280		285
Ala Ile Lys Asn Leu Gly					
	290				

<210> 7116

<211> 199

<212> PRT

<213> B.fragilis

<400> 7116

Ser Ile Thr Cys Ser Pro His Pro Gln Asn Gln Gln Leu Lys Lys Met					
1	5		10		15
Asp Asp Thr Phe Asp Ile Thr Tyr Lys Ala Leu Phe Arg Arg Tyr Tyr					
	20		25		30
Pro Asn Leu Met Phe Tyr Ala Thr Arg Leu Val Gly Asp Glu Glu Ala					
	35		40		45
Glu Asp Val Val Gln Asp Val Phe Val Glu Leu Trp Lys Arg Arg Asp					
	50		55		60
Ser Met Val Ile Gly Asp Gln Ile Gln Ala Phe Leu Tyr Arg Ala Val					
65		70		75	80
Tyr Thr Arg Ala Leu Asn Val Leu Lys His Arg Ser Ile Glu Asp Gly					
	85		90		95
Tyr Cys Ala Ala Val Lys Glu Ile Asn Gln Lys Arg Ala Glu Phe Tyr					
	100		105		110
Gln Pro Asp Asn Asn Glu Val Ile Arg Arg Ile Glu Asp Arg Glu Leu					
	115		120		125
Arg Asn Glu Ile Tyr Gln Ala Ile Asn Glu Leu Pro Asp Lys Cys Lys					
	130		135		140
Glu Val Phe Lys Leu Ser Tyr Leu His Glu Met Lys Asn Lys Glu Ile					
145		150		155	160
Ala Asp Val Met Gly Val Ser Leu Arg Thr Val Glu Ala His Met Tyr					
	165		170		175
Lys Ala Leu Lys Phe Leu Arg Asn Arg Leu Gly His Leu Trp Phe Leu					
	180		185		190
Phe Leu Leu Phe Phe Ile Lys					
	195				

<210> 7117

<211> 478

<212> PRT

<213> B.fragilis

<400> 7117

Leu Phe Ser Arg Thr Lys Met Ile Asn Asn Tyr Leu Glu Arg Gln Ile					
1	5		10		15
Lys Glu Asn Phe Ser Tyr Gln Pro Thr Phe Glu Gln Glu Ile Ala Val					
	20		25		30

Lys Ser Leu Ser Glu Phe Leu Leu Ser Thr Ala Asn Asp Thr Val Phe
 35 40 45
 Val Leu Arg Gly Tyr Ala Gly Thr Gly Lys Thr Ser Leu Val Gly Ala
 50 55 60
 Leu Val Lys Ala Met Asp Lys Leu Gln Gln Lys Ser Val Leu Leu Ala
 65 70 75 80
 Pro Thr Gly Arg Ala Ala Lys Val Phe Ser Ala Tyr Ala Gly His Pro
 85 90 95
 Ala Phe Thr Ile His Lys Lys Ile Tyr Arg Gln Gln Ser Phe Ser Asn
 100 105 110
 Glu Val Ser Asn Phe Ser Ile Asn Asp Asn Leu Thr Thr His Thr Leu
 115 120 125
 Tyr Ile Val Asp Glu Ala Ser Met Ile Ser Asn Glu Gly Leu Ser Gly
 130 135 140
 Ser Met Phe Gly Thr Gly Arg Leu Leu Asp Asp Leu Val Glu Phe Val
 145 150 155 160
 Tyr Ser Gly Val Gly Cys Arg Leu Leu Leu Met Gly Asp Thr Ala Gln
 165 170 175
 Leu Pro Pro Val Gly Glu Glu Gln Ser Pro Ala Leu Ala Thr Glu Ala
 180 185 190
 Leu Lys Gly Tyr Gly Leu Asn Val Ile Glu Val Asp Leu Thr Gln Val
 195 200 205
 Val Arg Gln Val Gln Ser Ser Gly Ile Leu Trp Asn Ala Thr Gln Ile
 210 215 220
 Arg Gln Leu Ile Ala Glu Asp Glu Cys Phe Ser Leu Pro Lys Ile Lys
 225 230 235 240
 Val Ser Gly Phe Pro Asp Ile Gln Val Val Arg Gly Asp Glu Leu Ile
 245 250 255
 Asp Thr Leu Thr Gly Cys Tyr Glu Lys Asp Gly Met Asp Glu Thr Ile
 260 265 270
 Val Val Cys Arg Ser Asn Lys Arg Ala Asn Ile Tyr Asn Lys Gly Ile
 275 280 285
 Arg Ala Gln Ile Leu Tyr Arg Glu Asp Glu Leu Asn Thr Gly Asp Leu
 290 295 300
 Leu Met Val Ala Lys Asn Asn Tyr Phe Trp Thr Glu Lys Tyr Lys Glu
 305 310 315 320
 Met Asp Phe Ile Ala Asn Gly Glu Ile Ala Val Val Arg Arg Val Arg
 325 330 335
 Arg Thr Arg Glu Leu Tyr Gly Phe Arg Phe Ala Glu Val Leu Leu Ala
 340 345 350
 Phe Pro Asp Gln Asn Asp Phe Glu Leu Glu Ala Asn Leu Leu Leu Asp
 355 360 365
 Thr Leu His Ser Asp Ala Pro Ala Leu Pro Lys Thr Glu Asn Asp Arg
 370 375 380
 Leu Phe Tyr Ser Val Leu Glu Asp Tyr Val Asp Ile Thr Val Lys Arg
 385 390 395 400
 Glu Arg Met Lys Lys Met Lys Ala Asp Pro His Tyr Asn Ala Leu Gln
 405 410 415
 Val Lys Tyr Ala Tyr Ala Val Thr Cys His Lys Ala Gln Gly Gly Gln
 420 425 430
 Trp Gln Asn Val Phe Leu Asp Gln Gly Tyr Met Ser Asp Glu Tyr Leu
 435 440 445
 Thr Pro Asp Tyr Phe Arg Trp Leu Tyr Thr Ala Phe Thr Arg Ala Ser
 450 455 460
 Lys Thr Leu Tyr Leu Val Asn Tyr Pro Glu Glu Gln Ile Glu
 465 470 475

<210> 7118

<211> 65

<212> PRT

<213> B.fragilis

<400> 7118

Phe Gly Tyr Arg Asn Gln Leu Pro Arg Gln Asn Asn Arg Gln Phe Ile
 1 5 10 15
 Leu Ser Lys Asn Met Asn Ile Ile Lys Asp Thr Asp Leu Gly Ser Thr
 20 25 30
 Ser Gln Thr Gln Asn Asp His Pro Asn Phe Gly Val Gly Arg Asn Arg
 35 40 45
 Arg His Thr Asn Val Leu His Val Leu Thr Asn His Lys Phe Ile Pro
 50 55 60
 Gln
 65

<210> 7119

<211> 766

<212> PRT

<213> B.fragilis

<400> 7119

Tyr Pro Tyr Ser Asn Thr Leu Ile His Thr Met Arg Lys Ile Leu Leu
 1 5 10 15
 Thr Ala Cys Leu Ile Ala Cys Ser Leu Met Ala Glu Ala Lys Asp Trp
 20 25 30
 Thr Gln Tyr Val Asn Pro Leu Met Gly Thr Gln Ser Ser Phe Glu Leu
 35 40 45
 Ser Thr Gly Asn Thr Tyr Pro Ala Ile Ala Arg Pro Trp Gly Met Asn
 50 55 60
 Phe Trp Thr Pro Gln Thr Gly Lys Met Gly Asp Gly Trp Gln Tyr Thr
 65 70 75 80
 Tyr Thr Ala Asn Lys Ile Arg Gly Phe Lys Gln Thr His Gln Pro Ser
 85 90 95
 Pro Trp Ile Asn Asp Tyr Gly Gln Phe Ser Ile Met Pro Val Thr Gly
 100 105 110
 Lys Leu Glu Phe Asp Glu Glu Lys Arg Ala Ser Trp Phe Ser His Lys
 115 120 125
 Gly Glu Ile Ala Thr Pro Ser Tyr Tyr Lys Val Tyr Leu Ala Glu His
 130 135 140
 Asp Val Val Thr Glu Met Thr Pro Thr Glu Arg Ala Val Leu Phe Arg
 145 150 155 160
 Phe Thr Phe Pro Glu Asn Glu His Ser Tyr Ile Val Val Asp Ala Phe
 165 170 175
 Asp Lys Gly Ser Tyr Val Lys Val Ile Pro Glu Glu Asn Lys Ile Ile
 180 185 190
 Gly Tyr Thr Thr Arg Asn Ser Gly Gly Val Pro Glu Asn Phe Lys Asn
 195 200 205
 Tyr Phe Val Ile Glu Phe Asp Lys Pro Phe Thr Tyr Lys Gly Thr Phe
 210 215 220
 Ala Asp Lys Lys Leu Glu Glu Gly Asn Leu Glu Gln Lys Ala Asp His
 225 230 235 240
 Thr Gly Ala Ile Ile Gly Phe Ser Thr Arg Lys Gly Glu Ile Val His
 245 250 255
 Ala Arg Ile Ala Ser Ser Phe Ile Asn Phe Glu Gln Ala Ala Gln Asn
 260 265 270
 Leu Lys Glu Leu Gly Asn Asp Ser Phe Glu Gln Leu Ala Gln Lys Gly
 275 280 285
 Asn Asp Ala Trp Asn Asn Val Leu Gly Lys Ile Gln Gly Glu Gly Gly
 290 295 300

Asn Leu Asp Gln Tyr Arg Thr Phe Tyr Ser Cys Leu Tyr Arg Ser Leu
 305 310 315 320
 Leu Phe Pro Arg Lys Phe Tyr Glu Phe Thr Ala Asp Gly Gln Pro Ile
 325 330 335
 His Tyr Ser Pro Tyr Asn Gly Gln Val Leu Pro Gly Tyr Met Tyr Thr
 340 345 350
 Asp Thr Gly Phe Trp Asp Thr Phe Arg Cys Leu Phe Pro Phe Leu Asn
 355 360 365
 Leu Met Tyr Pro Ser Val Asn Lys Glu Ile Gln Glu Gly Leu Ile Asn
 370 375 380
 Thr Tyr Lys Glu Ser Gly Phe Phe Pro Glu Trp Ala Ser Pro Gly His
 385 390 395 400
 Arg Gly Cys Met Ile Gly Asn Asn Ser Ala Ser Val Leu Val Asp Ala
 405 410 415
 Tyr Met Lys Gly Val Lys Val Asp Asp Val Lys Thr Leu Tyr Glu Gly
 420 425 430
 Leu Ile His Gly Thr Glu Asn Val His Pro Glu Val Ser Ser Thr Gly
 435 440 445
 Arg Leu Gly Tyr Gln Tyr Tyr Asn Lys Leu Gly Tyr Val Pro Tyr Asp
 450 455 460
 Val Lys Ile Asn Glu Asn Thr Ala Arg Thr Leu Glu Tyr Ala Tyr Asp
 465 470 475 480
 Asp Trp Cys Ile Tyr Gln Leu Ala Lys Ala Leu Asn Arg Pro Lys Lys
 485 490 495
 Glu Ile Glu Leu Phe Ala Lys Arg Ala Met Asn Tyr Arg Asn Val Phe
 500 505 510
 Asp Lys Glu Ser Lys Leu Met Arg Gly Arg Asn Glu Asn Gly Gln Phe
 515 520 525
 Gln Ser Pro Phe Ser Pro Leu Lys Trp Gly Asp Ala Phe Thr Glu Gly
 530 535 540
 Asn Ser Trp His Tyr Ser Trp Ser Val Phe His Asp Pro Gln Gly Leu
 545 550 555 560
 Ile Asp Leu Met Gly Gly Lys Lys Met Phe Ile Thr Met Leu Asp Ser
 565 570 575
 Val Phe Ala Val Pro Pro Val Phe Asp Asp Ser Tyr Tyr Gly Gln Val
 580 585 590
 Ile His Glu Ile Arg Glu Met Thr Val Met Asn Met Gly Asn Tyr Ala
 595 600 605
 His Gly Asn Gln Pro Ile Gln His Met Ile Tyr Leu Tyr Asn Tyr Ala
 610 615 620
 Gly Gln Pro Trp Lys Ala Gln Tyr Trp Leu Arg Gln Val Met Asp Arg
 625 630 635 640
 Met Tyr Thr Pro Gly Pro Asp Gly Tyr Cys Gly Asp Glu Asp Asn Gly
 645 650 655
 Gln Thr Ser Ala Trp Tyr Val Phe Ser Ala Leu Gly Phe Tyr Pro Val
 660 665 670
 Cys Pro Gly Thr Asp Glu Tyr Val Ile Gly Ala Pro Leu Phe Lys Lys
 675 680 685
 Ala Thr Leu His Phe Glu Asn Gly Asn Asn Leu Val Ile Asp Ala Gln
 690 695 700
 Asn Asn Ser Lys Glu Asn Leu Tyr Ile Glu Ser Leu Arg Val Asn Gly
 705 710 715 720
 Gln Glu Ser Thr Arg Asn Tyr Leu Lys His Ala Asp Leu Leu Gln Gly
 725 730 735
 Gly Thr Ile Glu Phe Lys Met Gly Ser His Pro Asn Leu Asn Arg Gly
 740 745 750
 Ile Asn Asp Asp Asp Ala Pro Tyr Ser Phe Ser Lys Met Lys
 755 760 765

Met Ala Met Ala Phe Ala Pro Ala Ala Ile His Tyr Pro Thr Ile Gln
 385 390 395 400
 Ile Asp Glu Pro Gln Val Val Ser Lys Ser Tyr Pro Gly Tyr Trp Asp
 405 410 415
 Asp Leu Arg Lys Ala Gly Phe Gly Ile Lys Val Gly Glu Glu
 420 425 430

<210> 7121
 <211> 876
 <212> PRT
 <213> B.fragilis

<400> 7121
 Ile Tyr Arg Ser Met Leu Thr Ala Lys Glu Thr Arg Asp Ser Phe Lys
 1 5 10 15
 Asn Phe Phe Glu Ser Lys Gly His Gln Ile Val Pro Ser Ala Pro Met
 20 25 30
 Val Ile Lys Asp Asp Pro Thr Leu Met Phe Thr Asn Ala Gly Met Asn
 35 40 45
 Gln Phe Lys Asp Ile Ile Leu Gly Asn His Pro Ala Lys Tyr His Arg
 50 55 60
 Val Ala Asp Ser Gln Lys Cys Leu Arg Val Ser Gly Lys His Asn Asp
 65 70 75 80
 Leu Glu Glu Val Gly His Asp Thr Tyr His His Thr Met Phe Glu Met
 85 90 95
 Leu Gly Asn Trp Ser Phe Gly Asp Tyr Phe Lys Lys Glu Ala Ile Ser
 100 105 110
 Trp Ala Trp Glu Tyr Leu Val Asp Val Leu Lys Leu Asn Pro Glu His
 115 120 125
 Leu Tyr Ala Thr Val Phe Glu Gly Ser Pro Glu Glu Gly Leu Glu Arg
 130 135 140
 Asp Asn Glu Ala Ala Ser Tyr Trp Glu Gln Tyr Leu Pro Lys Asp His
 145 150 155 160
 Ile Ile Asn Gly Asn Lys His Asp Asn Phe Trp Glu Met Gly Asp Thr
 165 170 175
 Gly Pro Cys Gly Pro Cys Ser Glu Ile His Ile Asp Leu Arg Pro Ala
 180 185 190
 Glu Glu Arg Ala Lys Ile Ser Gly Arg Asp Leu Val Asn His Asp His
 195 200 205
 Pro Gln Val Ile Glu Ile Trp Asn Leu Val Phe Met Gln Tyr Asn Arg
 210 215 220
 Lys Ala Asp Ser Thr Leu Glu Pro Leu Pro Ala Lys Val Ile Asp Thr
 225 230 235 240
 Gly Met Gly Phe Glu Arg Leu Cys Met Ala Leu Gln Gly Lys Thr Ser
 245 250 255
 Asn Tyr Asp Thr Asp Val Phe Gln Pro Leu Ile Lys Ala Ile Ala Gln
 260 265 270
 Met Ala Gly Thr Glu Tyr Gly Lys Asn Glu Gln Asn Asp Ile Ala Met
 275 280 285
 Arg Val Ile Ala Asp His Ile Arg Thr Ile Ala Phe Ser Ile Thr Asp
 290 295 300
 Gly Gln Leu Pro Ser Asn Ala Lys Ala Gly Tyr Val Ile Arg Arg Ile
 305 310 315 320
 Leu Arg Arg Ala Val Arg Tyr Gly Tyr Thr Phe Leu Gly Gln Lys Gln
 325 330 335
 Ala Phe Met Tyr Lys Leu Leu Pro Val Leu Ile Asp Ser Met Gly Asp
 340 345 350
 Ala Tyr Pro Glu Leu Ile Ala Gln Lys Glu Leu Ile Glu Lys Val Ile
 355 360 365

Lys Glu Glu Glu Glu Ser Phe Leu Arg Thr Leu Glu Thr Gly Ile Arg
 370 375 380
 Leu Leu Asp Lys Thr Met Ala Asp Thr Lys Ala Asn Gly Lys Thr Glu
 385 390 395 400
 Ile Ser Gly Lys Asp Ala Phe Thr Leu Tyr Asp Thr Phe Gly Phe Pro
 405 410 415
 Leu Asp Leu Thr Glu Leu Ile Leu Arg Glu Asn Gly Met Thr Val Asn
 420 425 430
 Val Glu Glu Phe Asp Ala Glu Met Gln Gln Gln Lys Gln Arg Ala Arg
 435 440 445
 Asn Ala Ala Ala Ile Glu Thr Gly Asp Trp Ile Ile Leu Lys Glu Gly
 450 455 460
 Thr Thr Glu Phe Val Gly Tyr Asp Tyr Thr Glu Tyr Glu Thr Ser Ile
 465 470 475 480
 Leu Arg Tyr Arg Gln Val Lys Gln Lys Asn Gln Thr Leu Tyr Gln Ile
 485 490 495
 Val Leu Asp Tyr Thr Pro Phe Tyr Ala Glu Ser Gly Gly Gln Val Gly
 500 505 510
 Asp Thr Gly Val Leu Val Asn Glu Phe Glu Thr Ile Glu Val Ile Asp
 515 520 525
 Thr Lys Lys Glu Asn Asn Leu Pro Ile His Ile Thr Lys Asn Leu Pro
 530 535 540
 Glu His Pro Glu Ala Pro Met Met Ala Cys Val Asp Thr Asp Lys Arg
 545 550 555 560
 Ala Ala Cys Ala Ala Asn His Ser Ala Thr His Leu Leu Asp Glu Ala
 565 570 575
 Leu Arg Glu Val Leu Gly Glu His Val Glu Gln Lys Gly Ser Leu Val
 580 585 590
 Thr Pro Asp Ser Leu Arg Phe Asp Phe Ser His Phe Gln Lys Val Thr
 595 600 605
 Asp Glu Glu Leu Arg Lys Val Glu His Leu Val Asn Ala Lys Ile Arg
 610 615 620
 Ala Asn Val Pro Leu Gln Glu His Arg Asn Ile Pro Ile Glu Glu Ala
 625 630 635 640
 Lys Glu Leu Gly Ala Ile Ala Leu Phe Gly Glu Lys Tyr Gly Asp His
 645 650 655
 Val Arg Val Ile Gln Phe Gly Ser Ser Ile Glu Phe Cys Gly Gly Thr
 660 665 670
 His Val Ala Thr Gly Asn Ile Gly Met Val Lys Ile Ile Ser Glu
 675 680 685
 Ser Ser Val Ala Ala Gly Val Arg Arg Ile Glu Ala Tyr Thr Gly Ala
 690 695 700
 Arg Val Glu Glu Met Leu Asp Thr Ile Gln Asp Thr Leu Ser Asp Leu
 705 710 715 720
 Lys Ala Leu Phe Asn Asn Ala Pro Asp Leu Gly Val Ala Ile Arg Lys
 725 730 735
 Tyr Ile Asp Glu Asn Ala Gly Leu Lys Lys Gln Val Glu Asp Phe Met
 740 745 750
 Lys Glu Lys Glu Ala Ala Val Lys Glu Arg Leu Leu Lys Asn Val Gln
 755 760 765
 Glu Ile Asn Gly Ile Lys Val Ile Lys Phe Cys Leu Pro Met Pro Ala
 770 775 780
 Glu Val Val Lys Asn Ile Ala Phe Gln Leu Arg Gly Glu Ile Thr Glu
 785 790 795 800
 Asn Leu Phe Phe Val Ala Gly Thr Val Asp Ala Asn Lys Pro Met Leu
 805 810 815
 Thr Val Met Ile Ser Asp Asn Leu Val Ala Gly Gly Leu Lys Ala Gly
 820 825 830
 Asn Leu Val Lys Glu Ala Ala Lys Leu Ile Gln Gly Gly Gly Gly Gly

835	840	845
Gln Pro His Phe Ala Thr	Ala Gly Gly Lys Asn Pro	Asp Gly Leu Asn
850	855	860
Ala Ala Val Glu Lys Val	Leu Glu Leu Ala Gly Ile	
865	870	875

<210> 7122
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7122

Glu Lys Ala Ile Phe Val Thr Leu Asn Leu Asp Lys Met Lys Ala Leu	
1 5 10 15	
Leu Pro Val Phe Cys Arg Pro Leu Gly Tyr Val Ile Leu Val Ile Ser	
20 25 30	
Met Phe Ile Pro Phe Leu Leu Leu Met Gln Gly Met Val Thr Asp Ser	
35 40 45	
Asn Leu Leu Phe Tyr Lys Glu Cys Ile Lys Leu Leu Met Ile Leu Gly	
50 55 60	
Ala Met Met Ile Ile Phe Ala Leu Ser Arg Asn Glu Gly Arg Glu Thr	
65 70 75 80	
Glu Ile Ile Arg Asn Lys Ala Thr Arg Asn Ala Ile Phe Leu Thr Val	
85 90 95	
Leu Phe Leu Phe Gly Gly Met Leu Tyr Arg Val Ala Thr Gly Asp Ile	
100 105 110	
Met Thr Val Asp Thr Ser Ser Phe Leu Ile Phe Leu Ile Ile Asn Val	
115 120 125	
Leu Cys Leu Glu Phe Gly Met Gln Lys Ala Arg Ile Asp Lys Ile Phe	
130 135 140	
Lys Arg	
145	

<210> 7123
 <211> 656
 <212> PRT
 <213> B.fragilis

<400> 7123

Arg His Asp Met Lys Phe Val Asn Arg Phe Phe Met Ile Leu Val Ala	
1 5 10 15	
Leu Cys Leu Val Cys Pro Gly Val Ser Ala Val Val Asn Pro Lys Pro	
20 25 30	
Phe Val Ile Pro Glu Leu Lys Glu Trp Lys Gly Ala Glu Gly Ala Phe	
35 40 45	
Val Pro Thr Glu Thr Thr Lys Ile Val Cys Pro Ala Asn Gln Pro Glu	
50 55 60	
Leu Leu Arg Ile Ala Arg Met Leu Ala Asp Asp Cys Glu Thr Met Phe	
65 70 75 80	
Gly His Lys Pro Glu Val Val Gln Gly Lys Gly Gly Ala Gly Asp Val	
85 90 95	
Ile Leu Ala Ile Arg Ala Asp Lys Lys Leu Gly Lys Glu Gly Tyr Thr	
100 105 110	
Val Lys Val Thr Asp Arg Ile Leu Leu Thr Ala Pro Glu Ser Ile Gly	
115 120 125	
Val Tyr Trp Gly Thr Arg Thr Leu Leu Gln Ile Ala Glu Gln Ser Glu	
130 135 140	
Asn His Gln Phe Pro Lys Gly Thr Leu Arg Asp Phe Pro Asp Tyr Ala	
145 150 155 160	

Met	Arg	Gly	Phe	Met	Ile	Asp	Cys	Gly	Arg	Lys	Phe	Ile	Pro	Leu	Ser
				165					170					175	
Phe	Leu	Gln	Asp	Tyr	Val	Lys	Ile	Met	Ala	Tyr	Tyr	Lys	Met	Asn	Thr
			180					185					190		
Leu	Gln	Ile	His	Leu	Asn	Asp	Asn	Gly	Phe	Lys	Gln	Phe	Phe	Gly	His
		195					200					205			
Asp	Trp	Ser	Lys	Thr	Tyr	Ala	Ala	Phe	Arg	Leu	Glu	Ser	Asp	Thr	Tyr
	210					215					220				
Pro	Gly	Leu	Ala	Ala	Glu	Asp	Gly	Tyr	Tyr	Thr	Lys	Arg	Glu	Phe	Ile
225					230					235					240
Asp	Leu	Gln	Lys	Leu	Ala	Glu	Asn	Leu	Tyr	Val	Glu	Ile	Ile	Pro	Glu
			245						250					255	
Ile	Asp	Ala	Pro	Ala	His	Thr	Leu	Ala	Phe	Thr	His	Tyr	Lys	Pro	Glu
		260						265					270		
Ile	Gly	Ser	Lys	Glu	Tyr	Gly	Met	Asp	His	Leu	Asp	Leu	Phe	Asn	Pro
	275						280					285			
Glu	Thr	Tyr	Lys	Phe	Met	Asp	Gly	Leu	Phe	Lys	Glu	Tyr	Leu	Glu	Gly
	290					295					300				
Asp	Glu	Pro	Val	Phe	Arg	Gly	Lys	Lys	Val	His	Ile	Gly	Thr	Asp	Glu
305					310					315					320
Tyr	Ser	Asn	Lys	Lys	Lys	Asp	Val	Val	Glu	Lys	Phe	Arg	Ala	Phe	Thr
			325						330					335	
Asp	His	Tyr	Ile	Arg	Tyr	Val	Glu	Ser	Phe	Gly	Lys	Gln	Ala	Cys	Val
		340						345					350		
Trp	Gly	Ala	Leu	Thr	His	Ala	Lys	Gly	Asp	Thr	Pro	Val	Lys	Ser	Glu
	355						360						365		
Asn	Val	Ile	Met	Ser	Ala	Trp	Tyr	Asn	Gly	Tyr	Ala	Asn	Pro	Lys	Asp
	370					375					380				
Met	Ile	Glu	Gln	Gly	Tyr	Lys	Leu	Ile	Ser	Ile	Pro	Asp	Gly	Leu	Val
385					390					395					400
Tyr	Ile	Val	Pro	Ala	Ala	Gly	Tyr	Tyr	Tyr	Asp	Tyr	Leu	Asn	Thr	Lys
			405						410					415	
Tyr	Leu	Tyr	Glu	Asn	Trp	Thr	Pro	Val	Gln	Ile	Gly	Lys	Ala	Val	Phe
		420						425					430		
Pro	Glu	Lys	Asp	Pro	Ser	Ile	Leu	Gly	Gly	Met	Phe	Ala	Val	Trp	Asn
		435					440					445			
Asp	His	Val	Gly	Asn	Gly	Ile	Ser	Thr	Lys	Asp	Ile	His	His	Arg	Val
	450					455					460				
Tyr	Pro	Ala	Leu	Gln	Thr	Leu	Ala	Val	Lys	Met	Trp	Thr	Gly	Lys	Asp
465					470					475					480
Val	Ser	Val	Pro	Tyr	Ala	Asp	Phe	Asp	Lys	Gln	Arg	Asn	Ala	Ile	Ser
			485						490					495	
Glu	Ala	Pro	Gly	Val	Asn	Gln	Leu	Gly	Arg	Ile	Gly	Thr	Thr	Pro	Gly
		500						505					510		
Leu	Val	Tyr	Glu	Gln	Ala	Ser	Val	Ala	Pro	Asn	Ser	Glu	Thr	Pro	His
	515						520					525			
Arg	Glu	Ile	Gly	Tyr	Asp	Tyr	Leu	Val	Thr	Phe	Asp	Ile	Asp	Gly	Ala
	530					535					540				
Asn	Glu	Ala	Lys	Gly	Thr	Glu	Leu	Phe	Arg	Ser	Pro	Asp	Ala	Val	Phe
545					550					555					560
Tyr	Leu	Ser	Asp	Pro	Ile	Arg	Gly	Met	Leu	Gly	Phe	Ala	Arg	Asp	Gly
			565					570					575		
Tyr	Leu	Asn	Thr	Phe	Ser	His	Arg	Ile	His	Lys	Gly	Glu	Lys	Ala	Thr
		580						585					590		
Ile	Gly	Ile	Ser	Gly	Asp	Asn	Lys	Ser	Thr	Arg	Leu	Leu	Ile	Asn	Gly
	595						600						605		
Gln	Val	Val	Glu	Glu	Met	Asn	Thr	Gln	Lys	Leu	Tyr	Tyr	Asn	Ala	Gly
	610					615					620				
Lys	Asp	Ser	Met	Asn	Tyr	Val	Arg	Thr	Leu	Val	Phe	Pro	Leu	Glu	Lys

3583

625 630 635 640
 Ala Gly Lys Phe Asp Ser Lys Ile Thr Asn Leu Lys Val Tyr Lys Lys
 645 650 655

<210> 7124
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 7124
 Arg Tyr Ser Met Lys Ile Lys Ile Tyr Lys Ser Leu Ala Met Cys Thr
 1 5 10 15
 Leu Leu Leu Gly Leu Ala Ala Cys Asn Asp Phe Glu Glu Met Asn Thr
 20 25 30
 Asp Pro Tyr Ala Pro Val Tyr Asp Pro Glu Ile Ile Gly Ala Thr Pro
 35 40 45
 Asp Gly Ile Asp Ile Asp Tyr Glu Leu Thr Pro Ser Ala Leu Lys Ser
 50 55 60
 Leu Gln Gly Thr Glu Ser Ala Ile Gly Ser Val Phe Ala Asn Leu Thr
 65 70 75 80
 Tyr Glu Gly Leu Tyr Asn Asp Tyr Gln Val Thr Thr Asn Leu Thr His
 85 90 95
 Asp Ile Tyr Ala Ala Tyr Phe Ala Asn Asn Val Ser Gly Phe Val Thr
 100 105 110
 Asn Ser Pro Thr Tyr Gly Tyr Asn Asp Gly Trp Ser Lys Arg Arg Trp
 115 120 125
 Glu His Phe Tyr Asp Asn Arg Thr Val Glu Glu Tyr Ser Gln Leu Ile
 130 135 140
 Lys Thr Phe Trp Phe Cys Gly Lys Glu Arg Tyr His Asn Ala Phe Tyr
 145 150 155 160
 Met Thr Arg Ile Tyr Tyr Ala Phe Leu Ile Ser Met Gln Thr Asp Thr
 165 170 175
 Tyr Gly Ala His Ser Ile Gly Ile Leu Arg Lys Asn Val Gln Cys Pro
 180 185 190
 Gln Thr Arg Lys
 195

<210> 7125
 <211> 499
 <212> PRT
 <213> B.fragilis

<400> 7125
 Ala Asn Leu Ile Tyr Ser Asp Ile Gln Asn Cys Lys Ile Asp Glu His
 1 5 10 15
 Met Asn Leu Arg Asn Phe Phe Leu Ala Ala Gly Ile Ala Ala Val Ala
 20 25 30
 Val Pro Val Trp Gly Gln Lys Ala Pro Glu Pro Tyr Gly Leu Thr Pro
 35 40 45
 Ser Ala Arg Gln Val Glu Trp Tyr Asn Arg Glu Met Ile Ala Phe Phe
 50 55 60
 His Phe Gly Ile Asn Thr Phe Glu Glu Tyr Val Asn Glu Gly Asp Gly
 65 70 75 80
 Arg Ala Pro Ala Ala Ile Phe Asn Pro Thr Ala Leu Asp Cys Gly Gln
 85 90 95
 Trp Met Arg Thr Leu Gln Ser Ala Gly Ile Pro Ser Ala Ile Ile Thr
 100 105 110
 Ala Lys His Ala Asp Gly Phe Cys Leu Trp Pro Ser Lys Tyr Thr Asp
 115 120 125

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Tyr Gly Val Lys Asn Ser Ala Trp Lys Asn Gly Lys Gly Asp Val Val
 130                      135                      140
Arg Glu Phe Val Asp Ala Cys Glu Glu Tyr Gly Ile Lys Ala Gly Ile
145                      150                      155                      160
Tyr Leu Gly Pro His Asp Arg His Glu His Leu Ser Pro Leu Tyr Thr
                      165                      170                      175
Thr Glu Lys Tyr Lys Gln Tyr Tyr Gly His Gln Leu Glu Glu Leu Met
                      180                      185                      190
Gly Asp Tyr Gly Lys Val Trp Glu Thr Trp Trp Asp Gly Ala Gly Ala
                      195                      200                      205
Asp Glu Leu Thr Thr Pro Val Tyr Thr His Trp Tyr Lys Ile Val Arg
210                      215                      220
Glu Lys Gln Pro Asp Cys Val Ile Phe Gly Thr Lys Asn Ser Tyr Pro
225                      230                      235                      240
Phe Ala Asp Val Arg Trp Met Gly Asn Glu Ser Gly Lys Ala Gly Asp
                      245                      250                      255
Pro Cys Trp Ser Thr Thr Asp Ser Val Cys Val Arg Asp Glu Trp Lys
260                      265                      270
Asn Tyr Glu Gly Leu Asn Glu Gly Val Lys Gly Gly Asp Ala Tyr Ile
275                      280                      285
Pro Ala Glu Thr Asp Val Ser Ile Arg Pro Ser Trp Phe Tyr His Ala
290                      295                      300
Glu Glu Asp Ser Arg Val Lys Ser Val Lys Glu Leu Trp Asp Ile Tyr
305                      310                      315                      320
Cys Thr Ser Val Gly His Asn Ser Val Leu Leu Leu Asn Phe Pro Pro
                      325                      330                      335
Asp Arg Arg Gly Leu Ile His Pro Thr Asp Ser Leu His Ala Ala Leu
340                      345                      350
Leu Lys Gln Gly Leu Asp Glu Thr Phe Gly Asn Asn Leu Leu Ala Lys
355                      360                      365
Ala Lys Val Lys Ala Thr Asn Gly Arg Gly Gly Lys Phe Arg Pro Glu
370                      375                      380
Phe Leu Thr Asp Asn Asn Lys Glu Thr Tyr Phe Ala Gly Arg Asp Gly
385                      390                      395                      400
Ala Lys Thr Ser Asp Ile Val Phe Thr Leu Ser Arg Gln Thr Glu Phe
405                      410                      415
Asp Cys Leu Met Ile Gln Glu Val Ile Glu Leu Gly His Arg Thr Thr
420                      425                      430
Lys Trp Ser Val Glu Tyr Ser Asn Asp Gly Arg Asn Trp Thr Pro Ile
435                      440                      445
Pro Glu Ala Thr Asp Lys Gln Thr Val Gly Tyr Lys Trp Ile Val Arg
450                      455                      460
Phe Ala Pro Val Lys Ala Lys Gln Val Arg Leu Arg Ile Leu Asp Gly
465                      470                      475                      480
Phe Ala Cys Pro Ala Ile His Thr Phe Gly Val Tyr Lys Gln Ser Ala
                      485                      490                      495
Leu Phe Gln

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<210> 7126

<211> 402

<212> PRT

<213> B.fragilis

<400> 7126

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Ser Lys Arg Ile Ala Met Thr Asp Arg Gln Asn Ser Arg Arg Phe Leu
1                      5                      10                      15
Leu Leu Phe Leu Gly Val Leu Ser Ala Phe Gly Pro Phe Ile Met Asp
20                      25                      30

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Met Tyr Leu Pro Thr Leu Pro Ala Met Ala Asp Phe Phe His Thr Ser
  35          40          45
Ser Ser Met Val Gln Leu Gly Leu Thr Thr Ser Met Ile Gly Leu Ala
  50          55          60
Ala Gly Gln Leu Ile Phe Gly Pro Leu Ser Asp Lys Tyr Gly Arg Arg
  65          70          75          80
Pro Pro Leu Leu Leu Ala Met Ile Leu Phe Leu Leu Ala Thr Val Gly
      85          90          95
Cys Ile Phe Ser His Thr Ile Ser Gln Phe Val Thr Ser Arg Phe Leu
      100          105          110
Gln Gly Ile Ala Gly Ala Gly Gly Val Val Ile Ser Arg Ser Ile Ala
      115          120          125
Thr Asp Glu Tyr Ser Gly Gln Gln Leu Ala Gly Met Leu Ala Val Ile
      130          135          140
Gly Gly Ile Asn Gly Ile Ala Thr Val Ile Ala Pro Ile Gly Gly Gly
      145          150          155          160
Ile Leu Ala Gln Ile Thr Ser Trp Gln Gly Ile Phe Ile Cys Leu Phe
      165          170          175
Phe Met Gly Val Val Leu Leu Ser Gly Ser Leu His Leu Asn Glu Ser
      180          185          190
Leu Pro Ala Lys His Arg Gln Thr Val Ser Trp Gln Asp Leu Tyr His
      195          200          205
Ser Phe Gly Glu Val Leu His Asn Arg Arg Tyr Val Gly Tyr Val Leu
      210          215          220
Gln Tyr Gly Phe Thr Met Gly Ile Leu Phe Val Asn Ile Ser Ser Ala
      225          230          235          240
Pro Phe Ile Met Gln Gln His Tyr Gly Leu Ser Pro Leu Ser Phe Ser
      245          250          255
Leu Cys Phe Gly Ile Asn Ala Ile Ala Met Val Ile Phe Ser Ala Ile
      260          265          270
Ser Ile Lys Leu Pro Thr Met Glu Arg Ala Leu Tyr Ile Gly Ser Arg
      275          280          285
Gly Met Leu Ser Val Ser Ala Leu Leu Met Val Phe Leu Ser Leu Gly
      290          295          300
Cys Asp Phe Trp Ile Tyr Glu Leu Leu Ile Phe Ala Leu Leu Ser Met
      305          310          315          320
Ile Gly Met Thr Phe Thr Ala Ser Asn Thr Leu Ala Met Glu Cys Glu
      325          330          335
Arg Arg Asn Ala Gly Ile Ala Ser Ala Leu Leu Gly Ala Thr Gly Phe
      340          345          350
Ala Phe Gly Gly Ile Val Ser Pro Leu Val Ser Leu Gly Asp Met Met
      355          360          365
Thr Ser Thr Gly Ile Leu Phe Leu Ala Gly Ser Ala Cys Ala Tyr Ala
      370          375          380
Cys Thr Arg Tyr Val Leu Ser Pro Ser Val Gln Pro Ser Gly Val Leu
      385          390          395          400
Tyr His

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<210> 7127

<211> 281

<212> PRT

<213> B.fragilis

<400> 7127

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Val Leu Ser Ile Leu Leu Thr Thr Ala Gln Val Thr Gly Asn Asn Pro
1          5          10          15
Asn Met Pro Asp Arg Ala Ile Ala Glu Thr Ile Asp Phe Gly Lys Ser
      20          25          30

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Glu Gln Tyr Thr Leu Ser Ile Arg Leu Ser Thr Asp Gly Phe Ser Phe
 35 40 45
 Ser Ile Tyr Asn Pro Ile His Asp Ser Ser Leu Ser Phe Phe Glu Lys
 50 55 60
 Glu Val Glu Ala Ser Leu Ser Leu Thr Ala Asn Leu Lys Gln Ala Phe
 65 70 75 80
 Arg Glu Leu Asp Phe Leu Asn His Thr Tyr Lys Arg Val Asn Ile Leu
 85 90 95
 Met Ala Asp Lys Arg Phe Thr Leu Ile Pro Leu Glu Leu Phe Glu Asp
 100 105 110
 Asp Gln Ser Glu Met Ile Phe Tyr His Asn His Thr Pro Lys Glu Asn
 115 120 125
 Glu Thr Val Lys Tyr Asn Ile Leu Lys Lys Asn Asn Ala Val Val Ile
 130 135 140
 Phe Gly Met Asp Lys Ser Thr Cys Gln Phe Leu Ser Asp Gln Tyr Pro
 145 150 155 160
 Glu Ala Arg Phe Tyr Ser Gln Ala Ala Pro Leu Ala Glu Tyr Phe Ser
 165 170 175
 Ala Lys Ser Arg Leu Gly Asn Ser Lys Lys Ile Tyr Ala Ser Ile Arg
 180 185 190
 Arg Asp Ala Ile Asp Phe Phe Cys Tyr Glu Arg Gly His Leu Leu Leu
 195 200 205
 Ala Asn Ser Phe Glu Cys Arg Lys Thr Gly Asp Arg Ile Tyr Tyr Leu
 210 215 220
 Leu Tyr Leu Trp Lys Gln Leu Asn Phe Asp Gln Glu Arg Asp Glu Leu
 225 230 235 240
 His Leu Thr Gly Ala Phe Asn Asp Lys Glu Lys Leu Met Gln Glu Leu
 245 250 255
 Arg Lys Tyr Ile Gln Gln Val Phe Ile Met Asn Pro Ala Ser Asn Ile
 260 265 270
 Asp Met Gln Ala Leu Leu Thr Cys Glu
 275 280

<210> 7128

<211> 385

<212> PRT

<213> B.fragilis

<400> 7128

Asn Thr Trp Ile Arg Lys Met Tyr Thr Thr Leu Ser Phe Lys Met Leu
 1 5 10 15
 Arg Ser Gly Pro Ser Leu His Trp His Asn Thr Pro Ser Thr Ala Gln
 20 25 30
 Tyr Ser Leu Gly Glu Asn Asp Lys Cys Phe Gly Gly Asp Lys Asp Lys
 35 40 45
 Trp Leu Arg Phe Ala Asn Thr Leu Arg Leu Arg Leu Ala Leu Arg Val
 50 55 60
 Ser Asn Val Asp Pro Gln Leu Ala Lys Glu Gln Gly Glu Lys Ala Met
 65 70 75 80
 Ala Asp Pro Ala Gly Leu Met Gln Ser Asp Asp Asp Asn Met Lys Gln
 85 90 95
 Thr Pro Lys Tyr Ser Tyr Ile Thr Gly Gly Asn Glu Asn Ile Tyr Thr
 100 105 110
 Leu Leu Tyr Asn Trp Ser Ala Asn Val Val Leu Ser Lys Glu Met Glu
 115 120 125
 Arg Ala Tyr Lys Glu Gln Ser Thr Ile Leu Asp Pro Arg Cys Glu Ile
 130 135 140
 Leu Trp Trp Arg Pro Thr Ala Leu Glu Asp Leu Asn Gln Thr Glu Pro
 145 150 155 160

Lys Glu Asp Met Thr Lys Asp Phe Asn Gly Cys Glu Asn Gly Glu Thr
 165 170 175
 Ser Leu Gly Gly Ser Tyr Thr Thr Tyr Ser Pro Ser Arg Val Phe
 180 185 190
 Ile Lys Gln Asp Gln Lys Lys Leu Asp Arg Lys His Trp Trp Cys Tyr
 195 200 205
 Ala Arg Glu Ile Val Trp Leu Gly Tyr Ser Glu Ser Leu Phe Leu Arg
 210 215 220
 Ala Glu Ala Ala Leu Arg Gly Trp Ala Gly Ala Lys Gly Thr Ala Glu
 225 230 235 240
 Asp Leu Tyr Lys Glu Gly Ile Glu Ala Ser Phe Asn Tyr Tyr Gln Ile
 245 250 255
 Gly Ala Asp Glu Glu Gly Gln Glu Lys Ile Ser Lys Tyr Met Glu Gly
 260 265 270
 Leu Lys Gly Leu Gln Ala Phe Lys Ser Gly Asp Arg Glu Ala Gln Leu
 275 280 285
 Glu Gln Ile Ile Thr Gln Lys Trp Ile Ala Val Tyr Pro Asn Gly Asn
 290 295 300
 Glu Gly Trp Ala Glu Phe Arg Arg Thr Asp Tyr Pro Arg Tyr Met Lys
 305 310 315 320
 Thr Pro Lys Gly Gly Asn Asn Ser Gly Gly Glu Val Ala Asn Gly Lys
 325 330 335
 Phe Ile Lys Arg Leu Arg Tyr Pro Asp Ser Glu Val Ser Asn Pro Asn
 340 345 350
 Arg Pro Lys Asp Val Asp Thr Gln Gly Thr Arg Leu Trp Trp Asp Val
 355 360 365
 Ala Asp Thr Asn Asp Asp Gly Gly Asn Tyr Val Thr Pro Asn Asn Phe
 370 375 380
 Arg
 385

<210> 7129

<211> 303

<212> PRT

<213> B.fragilis

<400> 7129

Leu Phe Tyr Phe Cys Ile Asn Lys Glu Arg Ile Leu Met Pro Asn Arg
 1 5 10 15
 Asp Ser Glu Lys Leu Ile Thr Asp Gly Tyr Thr Thr Thr Leu Leu Gly
 20 25 30
 Asp Glu Leu Met Val Cys Glu Asn Met Lys His Ile Arg Val Thr Ser
 35 40 45
 Val Pro Ser Tyr Thr Glu Val Gly Met Ile Ile Leu Cys Leu Arg Gly
 50 55 60
 Thr Ala Lys Ile Cys Ile Phe Asp Asn Ile His Ile Leu Ala Lys Asn
 65 70 75 80
 Glu Leu Ala Val Ile Leu Pro Gly Gln Leu Val Ser Ile Thr Glu Leu
 85 90 95
 Ser Pro Asp Phe Leu Cys Asn Ile Val Val Leu Ser Arg Ala Leu Phe
 100 105 110
 Asp Asp Thr Leu Ser Gly Phe Ser Arg Phe Ser Pro Leu Phe Phe Val
 115 120 125
 Tyr Met Arg Ser His Tyr Trp Tyr Glu Leu Thr Gly Glu Glu Ile Glu
 130 135 140
 Arg Phe Lys Leu Phe Tyr Gly Ser Leu Ser Gln Arg Ala Lys Asp Pro
 145 150 155 160
 Thr His Phe Phe Arg Arg Glu Ser Val Leu Leu Leu Leu Arg Ile Phe
 165 170 175

Tyr Leu Asp Ile Tyr Asn Glu Tyr Tyr Ser Lys Ser His Leu Met Lys
 180 185 190
 Gly Gly Ser Asp Met Gly Lys Ser Lys Leu Ala His Asp Phe Phe Cys
 195 200 205
 Leu Ile Met Gln His Tyr Arg Glu His Lys Asp Val Ala Phe Tyr Ala
 210 215 220
 Asp Lys Leu Cys Ile Thr Ser Lys Tyr Leu Ser Met Val Ile Lys Glu
 225 230 235 240
 Ala Ser Gly Lys Thr Ala Lys Asp Trp Ile Val Glu Tyr Ala Ile Leu
 245 250 255
 Glu Ile Lys Ala Met Leu Lys Asn Ser Thr Met Asn Ile Gln Glu Ile
 260 265 270
 Ser Ile Lys Thr Asn Phe Ala Asn Gln Ser Ser Leu Gly Arg Phe Phe
 275 280 285
 Arg Lys His Thr Gly Met Thr Leu Thr Glu Tyr Arg Met His Arg
 290 295 300

<210> 7130

<211> 989

<212> PRT

<213> B.fragilis

<400> 7130

Thr Phe Cys Phe Glu Gly Cys Gln Thr Asn Asp Cys Tyr Tyr Ser Thr
 1 5 10 15
 Tyr Arg Gln Met Lys Lys Leu Leu Ile Trp Thr Val Leu Leu Leu Thr
 20 25 30
 Ala Thr Leu Ser Thr Tyr Ala Gln Asn Lys Ile Val Thr Val Ser Gly
 35 40 45
 Arg Val Ile Glu Ala Gly Thr Lys Glu Pro Val Glu Leu Ala Ala Val
 50 55 60
 Gln Leu Leu Ser Leu Pro Asp Ser Ala Gln Val Ala Gly Met Thr Thr
 65 70 75 80
 Ser Thr Gln Gly Tyr Phe Ser Leu Ser Lys Gln Lys Pro Gly Lys Tyr
 85 90 95
 Leu Leu Lys Val Ser Phe Ile Gly Tyr Val Thr Lys Ile Ile Pro Val
 100 105 110
 Gln Leu Thr Ala Asn Val Pro Ala Lys Lys Met Gly Asn Ile Glu Leu
 115 120 125
 Ala Thr Asp Ala Val Met Leu Gln Glu Ala Val Val Ala Glu Ala
 130 135 140
 Pro Gln Val Thr Val Val Glu Asp Thr Leu Met Tyr Asn Ser Ser Ala
 145 150 155 160
 Tyr Arg Thr Pro Glu Gly Ala Met Leu Glu Glu Leu Val Lys Lys Leu
 165 170 175
 Pro Gly Ala Glu Ile Asp Asp Asp Gly Asn Val Lys Ile Asn Gly Lys
 180 185 190
 Asp Leu Lys Lys Ile Met Val Asp Gly Lys Glu Phe Phe Gly Gly Asp
 195 200 205
 Val Lys Thr Gly Leu Lys Asn Leu Pro Val Asp Met Val Asp Lys Leu
 210 215 220
 Lys Thr Tyr Asp Lys Lys Ser Asp Leu Ala Arg Val Thr Gly Ile Asp
 225 230 235 240
 Asp Gly Glu Glu Glu Thr Val Leu Asp Leu Thr Val Lys Lys Gly Met
 245 250 255
 Asn Gln Gly Trp Phe Gly Asn Ala Asp Leu Gly Ala Gly Thr Lys Asp
 260 265 270
 Arg Tyr Thr Gly Arg Met Met Leu Asn Arg Phe Val Asp Lys Thr Gln
 275 280 285

Phe Ser Ile Ile Gly Ser Ala Asn Asn Val Asn Asp Gln Gly Phe Ser
 290 295 300
 Gly Gly Gly Gly Gly Pro Arg Trp Arg Ser Asn Asn Gly Leu Asn Ala
 305 310 315 320
 Thr Lys Met Leu Gly Ala Asn Phe Ala Thr Gln Thr Asn Lys Leu Glu
 325 330 335
 Leu Gly Gly Ser Val Arg Tyr Asn Phe Gln Asp Ala Asp Ile Ser Ser
 340 345 350
 Ile Asn Ser Ser Glu Arg Phe Leu Gln Asn Gly Asn Ser Tyr Ser Asn
 355 360 365
 Ser Asn Asn Lys Asn Arg Asn Lys Gly Thr Asn Leu Asn Ala Asp Phe
 370 375 380
 Arg Met Glu Trp Lys Pro Asp Thr Leu Thr Asn Ile Ile Phe Arg Pro
 385 390 395 400
 Asn Phe Ser Tyr Gly Arg Thr Asn Asn Ala Ser Arg Ser Glu Ser Gly
 405 410 415
 Thr Phe Asn Glu Asp Pro Phe Asn Leu Ile Val Asn Pro Asn Asp Tyr
 420 425 430
 Leu Asn Phe Asp Asn Leu Ser Asp Asp Pro Leu Lys Asp Ile Arg Val
 435 440 445
 Asn Ala Thr Asn Ser Ala Ser Leu Ser Lys Gly Lys Ser Leu Ser Gly
 450 455 460
 Asn Ala Thr Leu Gln Val Asn Arg Lys Leu Asn Asn Arg Gly Arg Asn
 465 470 475 480
 Leu Thr Phe Arg Gly Val Phe Gly Tyr Gly Asp Asn Asp Ser Asp Gln
 485 490 495
 Tyr Thr Gln Ser Glu Thr Arg Tyr Tyr Gln Leu Leu Asn His Leu Gly
 500 505 510
 Gly Asp Ser Ile Leu Tyr Arg Asn Gln Tyr Ile Thr Thr Pro Thr Arg
 515 520 525
 Asn Tyr Asn Tyr Thr Ala Gln Val Thr Tyr Ser Glu Pro Ile Ala Lys
 530 535 540
 Ala Thr Phe Leu Gln Phe Ser Tyr Gln Phe Gln Tyr Lys Tyr Ser Lys
 545 550 555 560
 Ser Asp Lys Thr Thr Phe Asp Leu Leu Asp Tyr Pro Asp Trp Ala Ile
 565 570 575
 Gly Gly Ala Leu Pro Ser Gly Tyr Glu Ser His Ala Val Asp Ser Leu
 580 585 590
 Ser Lys Asn Ala Glu Tyr Arg Tyr Tyr Asn His Asp Ala Ser Val Gly
 595 600 605
 Leu Arg Phe Ile Arg Pro Lys Tyr Gln Leu Asn Val Gly Met Ser Phe
 610 615 620
 Gln Pro Gln Asn Ser Thr Leu Ser Tyr Lys Lys Gly Asp Tyr Met Ile
 625 630 635 640
 Asp Thr Thr Arg Thr Val Phe Asn Phe Ala Pro Asn Met Asp Leu Arg
 645 650 655
 Phe Arg Phe Ser Lys Val Ser Gln Leu Arg Phe Thr Tyr Arg Gly Arg
 660 665 670
 Ser Asn Gln Pro Thr Met Glu Asn Leu Leu Pro Ile Thr Asp Asn Ser
 675 680 685
 Asn Pro Leu Asn Ile Arg Met Gly Asn Pro Gly Leu Lys Pro Ser Phe
 690 695 700
 Ala His Thr Met Arg Leu Phe Tyr Asn Thr Tyr Asn Ala Glu Lys Gln
 705 710 715 720
 Arg Gly Ile Met Thr His Phe Ser Phe Thr Ala Thr Gln Asn Ser Ile
 725 730 735
 Ser Asn Ser Thr Arg Tyr Asn Glu Glu Thr Gly Gly Leu Ile Thr Arg
 740 745 750
 Pro Glu Asn Ile Asn Gly Asn Trp Asn Ala Phe Gly Met Phe Gly Phe

755	760	765
Asn Thr Ala Leu Lys Asn Lys Tyr Thr Ile Asn Thr Phe Thr Asn		
770	775	780
Val Asn Tyr Gln Asn Asn Val Ala Phe Leu Tyr Asn Gln Asp Thr Lys		
785	790	795
Asn Asn Asp Arg Asn Thr Ser Thr Gly Leu Thr Leu Gly Glu Arg Val		
805	810	815
Thr Gly Ser Tyr Arg Asn Asp Trp Phe Glu Phe Ser Leu Asn Gly Ser		
820	825	830
Ile Asn Tyr Thr Ala Glu Arg Asn Lys Leu Arg Pro Glu Asn Asn Gln		
835	840	845
Glu Pro Tyr Thr Tyr Ser Tyr Gly Ala Ser Thr Asn Ile Thr Met Pro		
850	855	860
Trp Lys Met Thr Leu Ala Thr Asn Ile Ala Asn Gln Ser Arg Arg Gly		
865	870	875
Tyr Arg Asp Ser Ser Met Asn Arg Asp Glu Leu Ile Trp Asn Ala Gln		
885	890	895
Leu Ala Gln Ser Leu Leu Lys Gly Ala Ala Thr Val Ser Phe Glu Val		
900	905	910
Tyr Asp Ile Leu Arg Gln Gln Ser Asn Ile Ser Arg Ser Leu Ser Ala		
915	920	925
Asp Met Arg Ser Val Ser Glu Tyr Asn Gly Ile Asn Ser Tyr Cys Met		
930	935	940
Val His Phe Ile Tyr Arg Leu Asn Ile Phe Gly Ser Lys Ala Ala Arg		
945	950	955
Glu Lys Met Met Asn Ser Gly Arg Arg Gly Phe Gly Gly Pro Gly Arg		
965	970	975
Gly Pro Gly Gly Gly Phe Gly Gly Gly His Pro Arg Phe		
980	985	

<210> 7131

<211> 422

<212> PRT

<213> B.fragilis

<400> 7131

Arg Leu Val Val Tyr Thr Ala Lys Lys Glu His Ser Phe Phe Tyr Leu	
1 5 10 15	
Ser Ala Asn Leu Ser Phe Val Val Ser Asp Phe Val Arg Ser Leu Asp	
20 25 30	
Lys Thr Leu Pro Asn Trp Leu Thr Phe Ala Lys Val Arg Leu Ser Ala	
35 40 45	
Ala Gln Val Gly Lys Asp Thr Asp Pro Tyr Gln Leu Tyr Asn Thr Tyr	
50 55 60	
Gly Phe Lys Phe Glu Lys Gly Glu Leu Ile Pro Ser Lys Ser Asn Val	
65 70 75 80	
Lys Met Asn Asp Gln Leu Lys Pro Glu Ile Ser Ser Ser Tyr Glu Ala	
85 90 95	
Gly Leu Asp Met Lys Phe Leu Asn Asn Arg Leu Gly Phe Asp Phe Thr	
100 105 110	
Tyr Tyr Tyr Ser Arg Thr Lys Asn Gln Ile Met Lys Val Pro Ala Ala	
115 120 125	
Ala Pro Trp Ser Gly Gly Lys Trp Val Asn Ala Gly Leu Ile Thr Asn	
130 135 140	
Lys Gly Phe Glu Met Met Ile Tyr Ser Thr Pro Val Gln Leu Lys Asp	
145 150 155 160	
Phe Ser Phe Asp Leu Asn Val Asn Leu Ala Lys Asn Val Ser Asn Val	
165 170 175	
Glu Lys Leu Ala Asp Gly Val Asp Tyr Ile Tyr Phe Asn Gly Asp Ser	

Ser Val Ile Ala Thr Val Ala Phe Asp Ile Ile Tyr Phe Gly Ala Ile
 35 40 45
 Ile Gly Thr Ile Val Ile Val Ile Leu Asp Asn Arg Asn Pro Val Lys
 50 55 60
 Thr Met Ala Trp Ile Leu Ile Leu Met Phe Leu Pro Val Val Gly Leu
 65 70 75 80
 Val Phe Tyr Phe Phe Phe Gly Arg Ser Gln Arg Arg Glu Lys Ile Ile
 85 90 95
 Gly Lys Lys Ser Tyr Asp Arg Leu Leu Lys Lys Pro Met Ala Glu Tyr
 100 105 110
 Leu Ala Gln Asn Cys Cys Glu Thr Pro Lys Glu Tyr Glu Arg Leu Ile
 115 120 125
 Gln Leu Phe Gln Asn Thr Asn Gln Ala Phe Pro Phe Glu Gly Asn Arg
 130 135 140
 Val Asp Ile Tyr Thr Gly Gly Tyr Ser Lys Leu Gln Ala Leu Leu Arg
 145 150 155 160
 Glu Leu Gln Lys Ala Arg Leu His Ile His Met Glu Tyr Tyr Ile Phe
 165 170 175
 Glu Asp Asp Pro Val Gly Arg Leu Val Arg Asp Val Leu Ile Glu Lys
 180 185 190
 Ala Arg Glu Gly Val Glu Val Arg Val Ile Tyr Asp Asp Val Gly Cys
 195 200 205
 Trp His Val Pro His Arg Phe Phe Glu Glu Met Arg Asp Ala Gly Ile
 210 215 220
 Glu Val Arg Ser Phe Leu Lys Val Arg Phe Pro Leu Phe Thr Ser Lys
 225 230 235 240
 Val Asn Tyr Arg Asn His Arg Lys Ile Val Val Ile Asp Gly Arg Ile
 245 250 255
 Gly Phe Ile Gly Gly Met Asn Leu Ala Glu Arg Tyr Met Arg Gly Phe
 260 265 270
 Ser Trp Gly Ile Trp Arg Asp Thr His Ile Leu Leu Glu Gly Lys Ala
 275 280 285
 Val His Gly Leu Gln Thr Ala Phe Leu Leu Asp Trp Tyr Phe Val Asp
 290 295 300
 Arg Thr Leu Ile Thr Ala Ser Arg Tyr Phe Pro Lys Ile Glu Ala Tyr
 305 310 315 320
 Gly Asn Ser Leu Val Gln Ile Val Thr Ser Glu Pro Ile Gly Pro Trp
 325 330 335
 Lys Glu Ile Met Gln Gly Leu Thr Val Ala Ile Ser Gly Ala Lys Lys
 340 345 350
 Tyr Phe Tyr Met Gln Thr Pro Tyr Phe Leu Pro Thr Glu Gln Ile Leu
 355 360 365
 Gly Ala Met Gln Thr Ala Ala Leu Ala Gly Val Asp Ile Arg Leu Met
 370 375 380
 Leu Pro Glu His Ala Asp Asn Arg Val Thr His Leu Gly Ser Cys Ser
 385 390 395 400
 Tyr Leu Ala Asp Val Leu Arg Ala Gly Val Lys Val Tyr Phe Tyr Lys
 405 410 415
 Lys Gly Phe Leu His Ser Lys Leu Met Val Ser Asp Asp Met Leu Ser
 420 425 430
 Thr Val Gly Ser Thr Asn Leu Asp Phe Arg Ser Phe Glu His Asn Phe
 435 440 445
 Glu Val Asn Ala Phe Met Tyr Asp Met Glu Thr Ala Leu Gln Met Arg
 450 455 460
 Glu Ile Phe Leu Gln Asp Gln Arg Glu Ser Thr Gln Ile Phe Leu Lys
 465 470 475 480
 Ser Trp Glu Lys Arg Ser Ser Arg Gln Lys Ala Met Glu Ser Val Val
 485 490 495
 Arg Leu Leu Ala Pro Leu Leu

500

<210> 7134
 <211> 342
 <212> PRT
 <213> B.fragilis

<400> 7134
 Leu Phe Leu Leu Tyr Asn Glu Lys Glu Lys Met Asn Asn Leu Ser Glu
 1 5 10 15
 Asp Ile Leu Met Arg Tyr Leu Thr Gly Glu Cys Ser Asp Glu Asp Phe
 20 25 30
 Ala Arg Val Asn Ala Trp Ile Lys Glu Ser Asp Asp Asn Ala Arg Arg
 35 40 45
 Leu Phe Arg Met Glu Glu Val Tyr His Leu Gly Arg His Asp Ser Phe
 50 55 60
 Pro Asp Gln Lys Lys Val Ala Arg Ala Glu Ala Arg Leu Tyr Lys Lys
 65 70 75 80
 Leu Ala Gln Glu Asp Ala His Ser Arg Lys Val Ile Arg Met His Gln
 85 90 95
 Trp Met Arg Tyr Ala Ala Ile Ile Val Leu Ala Leu Met Ile Gly Thr
 100 105 110
 Gly Gly Gly Tyr Leu Tyr Tyr Gln Ala Asp Pro Thr Arg Asn Met Ile
 115 120 125
 Thr Ala Ser Ser Thr Asp Gly Lys Val Lys Glu Val Met Leu Pro Asp
 130 135 140
 Gly Thr Lys Val Trp Leu Asn Gln Ser Ala Thr Leu Arg Tyr Pro Lys
 145 150 155 160
 Glu Phe Ser Glu Ser Glu Arg Asp Val Tyr Leu Asp Gly Glu Ala Tyr
 165 170 175
 Phe Glu Val Thr Lys Asn Arg Arg Cys Pro Phe Val Val Glu Ser Glu
 180 185 190
 Ala Met Arg Ile Lys Val Leu Gly Thr Thr Phe Asn Phe Lys Cys Asp
 195 200 205
 Lys Ser His Lys Leu Ala Glu Ala Thr Leu Ile Glu Gly Glu Ile Glu
 210 215 220
 Val Arg Gly Asn His Asp Glu Gly Met Ile Ile Leu Ser Pro Gly Gln
 225 230 235 240
 Lys Ala Glu Leu Asn Lys Thr Thr Arg Arg Leu Val Val Lys Gln Val
 245 250 255
 Asp Ala Lys Leu Asp Ala Val Trp His Asn Asp Leu Ile Pro Phe Glu
 260 265 270
 Gln Ala Asp Ile Phe Val Ile Thr Arg Thr Leu Glu Arg Phe Tyr Asp
 275 280 285
 Val Lys Ile Ile Leu Ser Pro Asp Ile Lys Ser Asp Lys Thr Tyr Ser
 290 295 300
 Gly Val Leu Lys Lys Lys Asp Asn Ile Glu Ser Val Leu Gln Ser Leu
 305 310 315 320
 Asp Asn Ser Ile Pro Ile Asn Tyr Lys Ile Val Gly Asp Asn Ile Phe
 325 330 335
 Ile Ser Ser Arg Asn Lys
 340

<210> 7135
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 7135

Val	Arg	Arg	Phe	Lys	Gln	Arg	Gln	Tyr	Pro	Leu	Leu	Glu	Ala	Gly	Ile
1				5					10					15	
Gly	Arg	Lys	Ala	Thr	Gln	Val	Arg	Gly	Cys	Phe	Thr	Ala	Lys	Leu	Ala
			20					25					30		
Asn	Ser	Phe	Gln	Ser	Phe	His	Arg	Ser	Ile	Gln	Ser	Leu	Tyr	Leu	Ala
		35					40				45				
Leu	Ile	Lys	Leu	Leu	Cys	Ile	Asp	Leu	Asn	Phe	Tyr	Ile	Cys	Ile	Ala
	50					55					60				
Gln	Thr	Asp	Lys	Leu	Trp	Lys	Thr	Val	Ser	Ala	Tyr				
65					70					75					

<210> 7136

<211> 384

<212> PRT

<213> B.fragilis

<400> 7136

Val	Ile	Arg	Ser	Asp	Leu	Arg	Thr	Leu	Ser	Ala	Met	Ser	Thr	Asp	Glu
1			5						10					15	
Glu	Arg	Ile	Tyr	Ser	Ile	Ala	Leu	Thr	Gln	Ile	Pro	Gly	Val	Gly	His
		20						25					30		
Ile	Gly	Ala	Lys	Arg	Leu	Val	Asp	Gly	Met	Gly	Ser	Ala	Thr	Asp	Val
	35					40					45				
Phe	Arg	Tyr	Arg	Thr	Glu	Leu	Pro	Asp	Arg	Leu	Pro	Gly	Val	Asn	Arg
	50				55					60					
Ala	Val	Val	Ala	Ala	Leu	Asp	Ser	Pro	Gln	Ala	Leu	Lys	Arg	Ala	Glu
65					70					75				80	
Gln	Glu	Tyr	Glu	Phe	Ala	Arg	Asn	Asn	Arg	Ile	Ser	Cys	Phe	Thr	Leu
				85					90					95	
Ala	Asp	Glu	Asp	Tyr	Pro	Ser	Arg	Leu	Arg	Glu	Cys	Asp	Asp	Ala	Pro
		100						105					110		
Val	Val	Leu	Phe	Phe	Lys	Gly	Lys	Ala	Asn	Leu	Asn	Ala	Leu	His	Ile
	115					120						125			
Ile	Asn	Met	Val	Gly	Thr	Arg	Asn	Ala	Thr	Asp	Tyr	Gly	Lys	His	Ile
	130					135					140				
Cys	Val	Ser	Phe	Leu	Gln	Glu	Leu	Gln	Met	Leu	Cys	Pro	Asp	Val	Leu
145				150						155				160	
Val	Val	Ser	Gly	Leu	Ala	Tyr	Gly	Ile	Asp	Ile	Asn	Ala	His	Arg	Ser
			165						170					175	
Ala	Leu	Ser	Val	Glu	Leu	Pro	Thr	Val	Gly	Val	Leu	Ala	His	Gly	Leu
	180						185						190		
Asp	Arg	Ile	Tyr	Pro	Ser	Leu	His	Arg	Lys	Thr	Ala	Ile	Asp	Met	Leu
	195					200						205			
Arg	Gln	Gly	Gly	Leu	Leu	Thr	Glu	Phe	Leu	Ser	Gly	Thr	Asn	Pro	Asp
	210					215					220				
Lys	His	Asn	Phe	Ile	Ser	Arg	Asn	Arg	Ile	Val	Ala	Gly	Ile	Ser	Asp
225				230						235				240	
Ala	Thr	Ile	Val	Val	Glu	Ser	Ala	Ala	Lys	Gly	Gly	Ser	Leu	Ile	Thr
			245						250					255	
Ala	Asp	Ile	Ala	Gly	Ser	Tyr	His	Arg	Asp	Cys	Phe	Ala	Phe	Pro	Gly
	260					265						270			
Arg	Val	Thr	Asp	Glu	Tyr	Ser	Lys	Gly	Cys	Asn	Gln	Leu	Ile	Gln	Asp
	275					280						285			
Asn	Lys	Ala	Val	Leu	Leu	Glu	Ser	Ala	Ser	Asp	Phe	Val	Lys	Thr	Met
	290					295					300				
Gly	Trp	Asp	Ser	Asp	Leu	Lys	Ser	Val	Lys	Pro	Glu	Thr	Val	Gln	Arg
305					310					315				320	
Asn	Leu	Phe	Pro	Asp	Leu	Ser	Ala	Glu	Glu	Leu	Arg	Ile	Val	Asp	Ile
				325						330				335	

Leu	Gly	Lys	Leu	Gly	Asp	Leu	Gln	Ile	Asn	Ala	Leu	Met	Val	Gln	Ala
			340					345					350		
Asp	Ile	Pro	Ile	Asn	Lys	Ile	Ser	Ala	Ile	Leu	Phe	Glu	Leu	Glu	Met
		355					360					365			
Lys	Gly	Val	Ile	Arg	Val	Leu	Ala	Gly	Gly	Val	Tyr	Gln	Leu	Leu	Arg
	370					375					380				

<210> 7137
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 7137

Gly	Tyr	Phe	Phe	Ile	Pro	Ser	Phe	Ile	Val	Phe	Leu	Asn	Asn	Ser	Leu
1				5					10					15	
Thr	Phe	Val	Val	Asn	Ile	Gln	Thr	Asn	Thr	Pro	Val	Tyr	Met	Pro	Ser
			20					25					30		
Ser	Val	Cys	Gly	Asp	Pro	Met	Met	Cys	Gln	Asn	Cys	Lys	Lys	Ser	Val
		35					40					45			
Pro	Asn	Ala	Ile	Phe	His	Val	Tyr	His	Arg	Arg	Gly	Phe	His	Tyr	Pro
	50					55					60				
Ala	Gln	Lys	Cys	Glu	Glu	Asn	Phe	Ile	Leu	Phe	Leu	Ile	Lys	Gly	Glu
65					70					75					80
Met	Leu	Val	Asn	Ser	Arg	Glu	Tyr	Ala	Gly	Thr	Met	Leu	Lys	Ala	Gly
			85						90					95	
Glu	Phe	Met	Leu	Gln	Pro	Ile	Ser	Ser	Lys	Ile	Glu	Met	Leu	Ala	Met
			100						105					110	
Thr	Asp	Val	Glu	Cys	Ile	Tyr	Tyr	Gln	Phe	Asn	Gln	Pro	Glu	Leu	Phe
		115					120					125			
Cys	Asp	Ile	Arg	Tyr	Asn	Arg	Ile	Met	Lys	Glu	Thr	Asp	Pro	Pro	Leu
	130					135					140				
Ile	Pro	Ser	Pro	Leu	Pro	Ile	Ile	Pro	Glu	Leu	Gln	His	Phe	Leu	Glu
145					150					155					160
Ser	Ala	Arg	Thr	Tyr	Leu	Ser	Glu	Lys	Lys	Ile	Cys	Arg	Asp	Leu	Leu
			165						170					175	
Ser	Leu	Lys	Arg	Lys	Glu	Leu	Ala	Phe	Ile	Leu	Gly	Tyr	Phe	Tyr	Ser
		180						185						190	
Asp	Tyr	Asp	Leu	Ala	Ser	Leu	Val	His	Pro	Leu	Ser	Lys	Tyr	Thr	Ser
	195						200					205			
Ser	Phe	Glu	Cys	Phe	Val	Tyr	Gln	Asn	Tyr	Lys	Lys	Val	Lys	Thr	Val
	210					215					220				
Glu	Glu	Phe	Ala	Lys	Leu	Gly	Gly	Tyr	Ser	Gln	Thr	Thr	Phe	Arg	Arg
225					230					235					240
Ile	Phe	Asp	Asn	Val	Phe	His	Glu	Pro	Val	Tyr	Glu	Trp	Met	Leu	Ser
			245						250					255	
Arg	Arg	Lys	Glu	Glu	Ile	Ile	Tyr	Glu	Leu	Gln	Asn	Thr	Glu	Ala	Thr
			260					265					270		
Ile	Ser	Glu	Ile	Cys	Tyr	Lys	Phe	Gly	Phe	Glu	Ser	Leu	Pro	His	Phe
	275						280					285			
Ser	Asn	Phe	Cys	Lys	Lys	Ser	Phe	Gly	Thr	Ser	Pro	Arg	Ser	Ile	Arg
	290					295					300				
Leu	Lys	Arg	Ser	Ser	Glu										
305					310										

<210> 7138
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 7138

Leu His Arg Pro His Gln Gly Lys Ser Ile Phe Gly Val Ala Tyr Asn
 1 5 10 15
 Ser Lys Glu Met Ile Met Asn Glu Arg Tyr Asn Lys Val Ala Leu His
 20 25 30
 Gly Ser Pro Leu Val Ser Gly Gly Asp Gly Met Gln Pro Ala Gly Tyr
 35 40 45
 Ser Gly Arg Leu Ser Gly Glu Trp Cys Gly Ser Ala Ala Gly Leu Glu
 50 55 60
 Arg Ser Asp Gly Glu Val Ala Gly Arg Ser Ser Asp Tyr Phe Leu Ser
 65 70 75 80
 Glu Arg Arg Lys Arg
 85

<210> 7139

<211> 322

<212> PRT

<213> B.fragilis

<400> 7139

Arg Met Ala Leu Asp Leu Phe Lys Arg Val Glu Ser Arg Lys Gly Leu
 1 5 10 15
 Phe Ala Val Glu Lys Ile Thr Leu Ile Tyr Asn Leu Leu Thr Ser Ile
 20 25 30
 Leu Ile Leu Phe Met Phe Gln Arg Met Asp His Pro Leu His Met Leu
 35 40 45
 Trp Asp Arg Ala Val Ile Ala Ala Met Thr Phe Leu Leu Met Tyr Leu
 50 55 60
 Tyr Arg Leu Ala Pro Cys Lys Phe Ser Ala Phe Val Arg Ile Ala Ile
 65 70 75 80
 Gln Met Ser Leu Leu Ser Tyr Trp Tyr Pro Asp Thr Phe Glu Phe Asn
 85 90 95
 Arg Val Phe Pro Asn Leu Asp His Leu Phe Ala Thr Ala Glu Gln Trp
 100 105 110
 Met Phe Gly Gly Gln Pro Ala Val Trp Phe Cys His Ala Phe Pro Gln
 115 120 125
 Met Trp Val Ser Glu Pro Phe Asn Met Gly Tyr Phe Ala Tyr Tyr Pro
 130 135 140
 Met Ile Leu Val Val Thr Leu Phe Tyr Phe Ile Tyr Arg Phe Asp Leu
 145 150 155 160
 Phe Glu Lys Met Ser Phe Val Leu Val Thr Cys Phe Phe Ile Tyr Tyr
 165 170 175
 Leu Ile Tyr Ile Phe Val Pro Val Ala Gly Pro Gln Phe Tyr Phe Pro
 180 185 190
 Ala Ile Gly Met Asp Ser Val Ser Gln Gly Val Phe Pro Ser Ile Gly
 195 200 205
 Asp Tyr Phe Asn His Asn Gln Glu Leu Leu Pro Gly Pro Gly Tyr Gln
 210 215 220
 His Gly Phe Phe Tyr Ser Leu Val Glu Gly Ser Gln Gln Val Gly Glu
 225 230 235 240
 Arg Pro Thr Ala Ala Phe Pro Ser Ser His Val Gly Val Ser Thr Ile
 245 250 255
 Leu Met Ile Met Ala Trp Arg Ala Ser Lys Lys Leu Phe Ala Cys Leu
 260 265 270
 Met Pro Phe Tyr Leu Leu Leu Cys Gly Ala Thr Val Tyr Ile Gln Ala
 275 280 285
 His Tyr Leu Ile Asp Ala Ile Ala Gly Phe Val Ser Ala Phe Val Leu
 290 295 300
 Tyr Val Leu Val Thr Lys Met Phe Lys Lys Trp Phe Ala Val Pro Met

305
Phe Lys

310

315

320

<210> 7140
<211> 72
<212> PRT
<213> B.fragilis

<400> 7140

Asn	Pro	Phe	Thr	Trp	Glu	Lys	Tyr	Pro	Thr	Asp	Pro	Lys	Asn	Glu	Lys
1				5					10				15		
Gly	Ile	Arg	Met	Lys	Leu	Cys	Pro	Leu	Ser	Gly	Lys	Lys	Ser	Gly	Phe
			20				25						30		
Tyr	Ser	Val	Phe	Lys	Ala	Val	Ile	Phe	Ser	Pro	Leu	Ala	Ala	Arg	Val
		35				40						45			
Arg	Arg	Ala	Arg	Gly	Glu	Ser	Pro	Lys	Glu	Ala	Leu	Gln	Lys	Cys	Ala
	50					55					60				
Lys	Cys	Asp	Lys	Glu	Ser	Asn	Pro								
65					70										

<210> 7141
<211> 341
<212> PRT
<213> B.fragilis

<400> 7141

Ile	Ile	Met	Tyr	Arg	Phe	Glu	Leu	Leu	Tyr	Leu	Tyr	Cys	Thr	Asn	Arg
1				5					10					15	
Gln	Ile	Met	Glu	Asn	Arg	Ile	Cys	Ile	Leu	Thr	Leu	Phe	Val	Phe	Leu
			20				25						30		
Phe	Leu	Leu	Ser	Gly	Glu	Ser	Arg	Ala	Met	Val	Ala	Met	Pro	Asp	Ala
		35				40						45			
Trp	Thr	Arg	Met	Met	Ile	Gly	Val	Asn	Gln	Lys	Asp	Trp	Ser	Leu	Leu
	50				55						60				
Arg	Glu	Arg	Val	Gln	Ala	Asp	Leu	His	Val	Pro	Asp	Arg	Glu	Asp	Val
65				70					75					80	
Leu	Met	Leu	Ile	Asp	Tyr	His	Arg	Asp	Asp	Arg	Met	Lys	Cys	Glu	Asn
			85					90						95	
Leu	Leu	Arg	Arg	Leu	Asn	Gly	Gly	Glu	Ala	Tyr	Arg	Tyr	Ile	Met	Asn
		100					105						110		
Lys	Ile	Leu	Pro	Leu	Leu	Tyr	Val	Tyr	Arg	Glu	His	Ser	Pro	Val	Pro
	115					120						125			
Ile	Pro	Asp	Asp	Lys	Ala	Ala	Gly	Val	Phe	Leu	Ser	Thr	Val	Asn	Val
	130				135						140				
Leu	Pro	Arg	Val	Lys	Phe	Val	His	Pro	Gln	Pro	Val	Val	Pro	Glu	Glu
145				150					155					160	
Gly	Lys	Ile	Glu	Thr	Pro	Val	Ile	Ile	Glu	Gln	Arg	Thr	Val	Leu	Ala
			165				170						175		
Leu	Lys	Asn	Asn	Leu	Leu	Tyr	Asp	Leu	Ala	Leu	Ala	Pro	Asn	Ile	Glu
		180				185						190			
Val	Glu	Ile	Pro	Leu	Asn	Arg	Arg	Trp	Ser	Val	Asn	Ala	Glu	Tyr	Lys
	195				200							205			
Cys	Pro	Trp	Trp	Leu	Asn	Ser	Ser	Arg	Glu	Phe	Cys	Tyr	Gln	Leu	Leu
	210				215						220				
Ser	Gly	Gly	Val	Glu	Gly	Arg	Cys	Trp	Leu	Gly	Asn	Arg	Lys	Arg	Arg
225			230						235					240	
Asn	Arg	Leu	Ala	Gly	His	Phe	Ile	Gly	Ala	Tyr	Ala	Glu	Gly	Gly	Ile
			245					250						255	

Tyr Asp Phe Gln Phe Lys Gly Asp Gly Tyr Gln Gly Arg Tyr Tyr Ala
 260 265 270
 Ala Ser Gly Leu Thr Tyr Gly Tyr Ala Lys Gln Ile Ala Arg His Leu
 275 280 285
 Ser Phe Glu Phe Ser Leu Gly Ile Gly Tyr Leu Thr Thr Glu Tyr Lys
 290 295 300
 Lys Tyr Thr Pro Tyr Glu Gly Asp Leu Val Trp Lys Ser Ser Ala Arg
 305 310 315 320
 Tyr Asn Phe Ile Gly Pro Thr Lys Ala Lys Val Ser Leu Val Trp Leu
 325 330 335
 Ile Thr Ala Arg Arg
 340

<210> 7142
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7142
 Arg Leu Asn Gln Met Lys Ser Asn Lys Asn Glu Phe Leu Lys Leu Leu
 1 5 10 15
 Thr Ala Tyr Gln Gly Ile Ile His Lys Val Asn Arg Ile Tyr Phe Arg
 20 25 30
 Ser Glu Ala Asp Arg Glu Asp Asn Phe Gln Glu Thr Val Tyr Gln Leu
 35 40 45
 Trp Arg Ser Phe Pro Ala Leu Gln Asn Lys Glu Lys Pro Ala Ser Trp
 50 55 60
 Ile Tyr Thr Val Ala Ile Asn Thr Ser Ile Ser Lys Val Arg Lys Asp
 65 70 75 80
 Ser Arg Ile Glu Phe Arg Asp Ser Pro Pro Asp Gly Glu Pro Val Asp
 85 90 95
 Pro Trp Glu Gln Gln Glu Gln Asp Glu Asn Trp Gln Arg Leu Val Asn
 100 105 110
 Ala Leu Gln Lys Leu Asn Glu Ile Asp Lys Ser Ile Met Leu Leu Tyr
 115 120 125
 Met Glu Asp Tyr Ser Tyr Glu Glu Ile Ala Gly Ile Val Gly Ile Ser
 130 135 140
 Ser Ser Ala Val Gly Val Lys Ile His Arg Leu Lys Gly Gln Leu Gln
 145 150 155 160
 Lys Gln Phe Lys Lys
 165

<210> 7143
 <211> 833
 <212> PRT
 <213> B.fragilis

<400> 7143
 Leu Met Asn His Lys Val Leu Tyr Arg Val Ala Leu Phe Cys Leu Phe
 1 5 10 15
 Ser Met Leu Ser Ala Val Leu Met His Ala Gly Glu Gln Gln Gln Gln
 20 25 30
 Ser Lys Gly Ile Val Thr Gly Arg Ile Val Asp Gln Gln Lys Gln Pro
 35 40 45
 Tyr Tyr Pro Val Ala Val Ala Ile Glu Gly Val Tyr Ile Gly Gly Tyr
 50 55 60
 Thr Asn Glu Asn Gly Val Tyr His Ile Asn Asp Val Pro Thr Gly Ser
 65 70 75 80
 Gln Thr Ile Val Val Ser Gly Ile Gly Val Lys Thr Lys Lys Val Pro

Tyr Arg Leu Pro Glu Ser Ile Glu Met Phe Gly Asp Gly Leu Ile Gln
 565 570 575
 Gln Arg Asn Pro Asp Leu Lys Pro Glu Ser Ser Arg Asn Leu Asn Leu
 580 585 590
 Gly Leu Ser Phe Ile Gln Thr Phe Gly Ala His Gln Leu Ser Ala Asp
 595 600 605
 Gly Asn Phe Ile Tyr Arg Tyr Thr Thr Asp Phe Ile Leu Lys Gly Val
 610 615 620
 Ser Leu Thr Ser Asn Pro Thr Thr Gly Tyr Glu Asn Leu Gly Lys Val
 625 630 635 640
 Leu Thr Lys Gly Val Glu Ala Ala Val Arg Tyr Asn Tyr Lys Asp Leu
 645 650 655
 Phe His Thr Gly Ala Gly Phe Thr Tyr Gln Asp Ile Thr Asp Arg Gln
 660 665 670
 Arg Tyr Glu Lys Thr Lys Asp Ser Phe Val Gly Glu Gly Ile Thr Glu
 675 680 685
 Asn Ile Thr Tyr Lys Glu Arg Leu Pro Asn Ile Pro Tyr Leu Phe Ala
 690 695 700
 Asn Ala Asp Ala Gly Val Arg Phe His Asp Leu Ile Trp Arg Asn Ser
 705 710 715 720
 Val Leu Thr Phe Asp Tyr Asn Leu Asn Tyr Ile His Ser Tyr Tyr Leu
 725 730 735
 Ser Phe Pro Gly Leu Gly Ala Lys Ser Ser Lys Lys Val Ile Pro Glu
 740 745 750
 Gln Phe Ser His Asp Leu Ala Leu Gly Tyr Ser Met Asp Asn Gly Lys
 755 760 765
 Tyr Ser Val Val Val Glu Cys Thr Asn Leu Thr Asn Gln Lys Leu Tyr
 770 775 780
 Asp Asn Tyr Arg Leu Gln Lys Pro Gly Arg Ala Phe Asn Val Lys Leu
 785 790 795 800
 Arg Tyr Phe Phe Ser Lys Val Lys Lys Ser Asp Asp Tyr Asn Val Ser
 805 810 815
 Asn Leu Tyr Val Ser Pro Cys Cys Leu Pro Phe Ile Gly Cys His Gly
 820 825 830
 Met

<210> 7144

<211> 342

<212> PRT

<213> B.fragilis

<400> 7144

Leu Lys Lys His Thr Ile Met Lys Lys Ile Leu Phe Ala Ala Val Ala
 1 5 10 15
 Ala Met Ala Ile Thr Gly Cys Ser Gln Asn Glu Glu Ile Glu Lys Ala
 20 25 30
 Val Gln Pro Val Glu Ile Ser Phe Asn Thr Ala Val Ser Lys Thr Thr
 35 40 45
 Arg Ala Thr Thr Leu Val Asn Ser Ala Phe Thr Lys Phe Thr Ala Tyr
 50 55 60
 Ala Tyr Ser Thr Thr Glu Ala Phe Ala Asn Ala Thr Lys Val Asn Ala
 65 70 75 80
 Leu Ile Ser Gly Ala Glu Phe Thr Lys Gly Glu Asn Ser Ala Trp Gly
 85 90 95
 Ser Gly Asn Ser Val Phe Tyr Trp Pro Ala Thr Asp Gln Val Ser Phe
 100 105 110
 Phe Ala Phe Ser Pro Asn Thr Lys Glu Gln Leu Ser Trp Gly Ala Ala
 115 120 125

Val Ala Glu Thr Ala Pro Thr Leu Thr Tyr Thr Val Lys Asp Ala Val
 130 135 140
 Lys Asp Gln Glu Asp Leu Val Val Ala Glu Val Met Asn Lys Gln Lys
 145 150 155 160
 Ala Thr Ser Gly Ser Thr Gly Ala Val Ala Leu Asn Phe Lys His Ala
 165 170 175
 Leu Thr Lys Val Gly Phe Lys Ile Lys Gly Glu Gly Ser Gly Val Thr
 180 185 190
 Tyr Thr Leu Asn Lys Ile Val Ile Asn Ala Lys Lys Lys Gly Val Tyr
 195 200 205
 Thr Tyr Ala Thr Ser Thr Thr Asp Glu Thr Thr Leu Gly Thr Trp Thr
 210 215 220
 Ile Pro Ser Asp Val Thr Ala Asn Thr Ala Tyr Thr Val Glu Pro Thr
 225 230 235 240
 Asn Ala Leu Ser Ile Thr Gly Ala Asp Ser Asp Ala Thr Val Asp Ala
 245 250 255
 Thr Leu Val Gly Ala Asp Tyr Thr Ala Met Leu Ile Pro Gln Asp Leu
 260 265 270
 Thr Gly Val Thr Phe Glu Ile Tyr Tyr Lys Ala Glu Ala Gly Gly Ala
 275 280 285
 Ile Leu Cys Asp Lys Thr Thr Thr Pro Glu Glu Ile Thr Phe Ala Asp
 290 295 300
 Gly Thr Trp Thr Ala Gly Gln Ser Val Ala Tyr Val Leu Thr Leu Lys
 305 310 315 320
 Gly Val Glu Lys Met Ser Ile Thr Gly Ser Val Ala Asp Ser Trp Asp
 325 330 335
 Phe Thr Glu Thr Pro Lys
 340

<210> 7145
 <211> 377
 <212> PRT
 <213> B.fragilis

<400> 7145
 Glu Met Asn Lys Thr Phe Arg Lys Ala Cys Ala Lys Leu His Leu Trp
 1 5 10 15
 Leu Gly Leu Leu Ser Gly Ile Val Val Phe Ile Val Cys Ile Thr Gly
 20 25 30
 Cys Met Tyr Ala Phe Lys Asp Glu Ile Thr Asp Ala Thr Gln Pro Trp
 35 40 45
 Arg Phe Val Ala Pro Leu Glu Lys Glu Phe Leu Pro Pro Ser Arg Leu
 50 55 60
 Leu Ala Ile Ala Asp Ser Val Met Gly Gly Ala Ser Ala Thr Ala Ile
 65 70 75 80
 Thr Tyr Gly Glu Arg Ser Asp Ala Ala Trp Val Asp Tyr Tyr Gln Pro
 85 90 95
 Glu Ala Gly Met Ser Thr Val Phe Ile Asn Pro Tyr Ser Gly Gln Val
 100 105 110
 Leu Lys Ser Val Val Asn His Asn Gly Asp Phe Asp Phe Phe Arg Leu
 115 120 125
 Val Leu Ser Gly His Arg Thr Leu Trp Leu Pro Arg Glu Ile Gly Ser
 130 135 140
 Pro Ile Val Gly Tyr Ser Val Leu Ile Phe Leu Ile Thr Leu Ile Thr
 145 150 155 160
 Gly Val Ile Leu Trp Trp Pro Arg Ser Trp Thr Arg Lys Ala Leu Val
 165 170 175
 Gln Arg Leu Thr Leu Lys Arg Pro Phe Thr Phe Ser Arg Leu Asn Phe
 180 185 190

Asp Leu His Asn Val Ala Gly Phe Tyr Ala Ala Leu Val Leu Ala Val
 195 200 205
 Leu Cys Phe Thr Gly Leu Ile Phe Ser Leu Asn Trp Phe Ser Arg Gly
 210 215 220
 Val Tyr Ser Ile Thr Ser Gly Gly Glu Glu Leu Lys Pro Tyr Val Leu
 225 230 235 240
 Pro Val Ser Asp Thr Leu Gln Val Val Asn Arg Val Thr Asn Pro Leu
 245 250 255
 Asp Arg Leu Tyr Thr Gln Leu Arg Leu Glu Glu Pro Ala Ala Lys Thr
 260 265 270
 Phe Tyr Phe Ala Leu Pro Gly Gln Ala Asp Gly Val Tyr Arg Val Ser
 275 280 285
 Val Val His Lys Arg Gly Ser Tyr Tyr Arg Thr Asp Asn Leu Phe Phe
 290 295 300
 Asp Arg Tyr Thr Leu Val Ser Leu Lys Gly Ala Gly Pro Tyr Ala Gly
 305 310 315 320
 Lys Tyr Thr Glu Ala Ser Pro Ala Asp Lys Phe Arg Arg Met Asn Leu
 325 330 335
 Glu Ile His Asp Gly Arg Ile Trp Gly Leu Pro Gly Lys Ile Ile Met
 340 345 350
 Phe Leu Ala Ser Leu Thr Gly Ala Ser Leu Pro Val Thr Gly Phe Ile
 355 360 365
 Ile Trp Tyr Arg Lys Arg Cys Lys Arg
 370 375

<210> 7146
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 7146
 His Ser Val Lys Met Ile Ile Val Phe Ala Gln Ile Gly Leu Phe Thr
 1 5 10 15
 Ala Lys Ser Met Gly Thr Lys Lys Asn Arg Phe Pro Tyr Gly Leu Ala
 20 25 30
 Ile Phe Phe Leu Leu Ser Gln Ser Lys Lys Lys Gln Pro Asn Arg Lys
 35 40 45
 Gln Lys Gln Glu Lys Gln Glu Gln Asn Gly Arg Lys Lys Glu Tyr Met
 50 55 60
 Lys Val Phe Tyr Leu Ser Gly Ser Leu Leu His Ser Arg Ala Thr Gly
 65 70 75 80
 Gly Ala Tyr Ser Leu Ile Leu Leu Gln Asn Arg Asp Lys Glu Arg Thr
 85 90 95

<210> 7147
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 7147
 Lys Asn Leu Lys Gly Leu Asn Lys Met Glu Lys Tyr Ile Tyr Glu Leu
 1 5 10 15
 Thr Leu Lys Val Arg Asp Tyr Glu Cys Asp Leu Gln Gly Ile Val Asn
 20 25 30
 Asn Ala Asn Tyr Gln His Tyr Leu Glu His Thr Arg His Glu Phe Leu
 35 40 45
 Ser Ser Val Gly Val Ser Phe Ala Lys Leu His Glu Glu Gly Val Asp
 50 55 60
 Pro Val Val Ala Arg Ile Asn Met Ala Phe Lys Thr Pro Leu Lys Ser

65		70		75		80									
Gly	Asp	Glu	Phe	Val	Ser	Lys	Leu	Tyr	Met	Lys	Lys	Glu	Gly	Ile	Lys
		85							90					95	
Tyr	Val	Phe	Tyr	Gln	Asp	Ile	Phe	Arg	Lys	Ser	Asp	Asp	Lys	Val	Val
		100						105					110		
Val	Lys	Ser	Thr	Val	Glu	Thr	Val	Cys	Val	Val	Asn	Gly	Arg	Leu	Ser
		115				120						125			
Asn	Ser	Glu	Leu	Phe	Asp	Gln	Ile	Phe	Ala	Pro	Tyr	Leu	Gln		
	130					135					140				

<210> 7148
 <211> 255
 <212> PRT
 <213> B.fragilis

<400> 7148
Arg Lys Thr Lys Met Asp Lys Asn Ile Ser Phe Thr Leu Lys Val Trp
1 5 10 15
Arg Gln Lys Gly Pro Lys Ala Lys Gly Ala Phe Glu Thr Tyr Gln Met
20 25 30
Lys Asp Ile Pro Gly Asp Thr Ser Phe Leu Glu Met Leu Asp Ile Leu
35 40 45
Asn Glu Gln Ile Ile Asn Asp Gly Gly Glu Pro Ile Val Phe Asp His
50 55 60
Asp Cys Arg Glu Gly Ile Cys Gly Met Cys Ser Leu Tyr Ile Asn Gly
65 70 75 80
His Pro His Gly Pro Ala Thr Gly Ala Thr Thr Cys Gln Met Tyr Met
85 90 95
Arg Arg Phe Lys Asp Gly Asp Thr Ile Thr Val Glu Pro Trp Arg Ser
100 105 110
Ala Gly Phe Pro Val Ile Arg Asp Leu Met Val Asp Arg Ser Ala Tyr
115 120 125
Asp Lys Ile Met Gln Ala Gly Gly Tyr Val Ser Val Asn Thr Gly Ala
130 135 140
Pro Gln Asp Ala Asn Ala Ile Leu Ile Ser Lys Asp Ile Ala Asp Glu
145 150 155 160
Ala Met Asp Ala Ala Cys Ile Gly Cys Gly Ala Cys Val Ala Ala
165 170 175
Cys Lys Asn Gly Ser Ala Met Leu Phe Val Ser Ala Lys Val Ser Gln
180 185 190
Leu Asn Leu Leu Pro Gln Gly Lys Val Glu Ala Ala Arg Arg Ala Lys
195 200 205
Ala Met Leu Ser Lys Met Asp Glu Leu Gly Phe Gly Asn Cys Thr Asn
210 215 220
Thr Arg Ala Cys Glu Ala Glu Cys Pro Lys Asn Ile Ser Ile Ser Asn
225 230 235 240
Ile Ala Arg Leu Asn Arg Asp Phe Ile Ile Ala Lys Leu Lys Asp
245 250 255

<210> 7149
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 7149
Thr Ser Arg Lys Met Lys Lys Phe Val Leu Ile Cys Phe Cys Val Leu
1 5 10 15
Ser Ser Val Gly Gly Tyr Ala Gln Asn Trp Asp Ile Asn Thr Leu His
20 25 30

Lys Ile Asn Ser Leu Asp Ser Lys Phe Ala Arg Asn Tyr Ser Lys Ala
 35 40 45
 Phe Ser Lys Ser Ala Pro Tyr Ile Ala Val Gly Val Pro Val Ala Met
 50 55 60
 Ala Val Tyr Ala Gly Ile Asp Lys Asp Lys Glu Leu Leu Lys Asp Ala
 65 70 75 80
 Ile Tyr Ile Gly Thr Ser Val Ala Glu Ala Val Val Ile Thr Tyr Gly
 85 90 95
 Met Lys Tyr Ala Phe Asp Arg Glu Arg Pro Tyr Asp Arg Tyr Pro Asp
 100 105 110
 Arg Val Asp Ala Arg Ser His Glu Ser Ser Pro Ser Phe Pro Ser Gly
 115 120 125
 His Thr Ala Ala Ala Phe Ser Leu Ala Thr Ser Leu Ser Ile Arg Tyr
 130 135 140
 Pro Lys Trp Tyr Val Ile Ala Pro Ser Ala Phe Trp Ala Cys Ser Val
 145 150 155 160
 Gly Phe Ser Arg Met Asn Glu Gly Val His Tyr Pro Ser Asp Val Ala
 165 170 175
 Ala Gly Ala Val Ile Gly Ala Gly Cys Ala Val Ala Asn Ile Tyr Val
 180 185 190
 Asn Arg Trp Leu Asn Lys Trp Leu Phe Gly Glu Lys Lys Lys Val Thr
 195 200 205
 Ile Ser Tyr
 210

<210> 7150

<211> 342

<212> PRT

<213> B.fragilis

<400> 7150

Leu Ser Phe Asp Gln Asn Phe Met Glu Ser Ile Leu Ile Thr Gly Ala
 1 5 10 15
 Ser Gly Phe Ile Gly Ser Phe Ile Val Gln Glu Ala Leu Lys Arg Arg
 20 25 30
 Phe Gly Val Trp Ala Gly Ile Arg Ala Ser Ser Ser Lys Lys Tyr Leu
 35 40 45
 Lys Glu Arg Lys Ile His Phe Leu Glu Leu Asp Phe Ala His Pro Asn
 50 55 60
 Glu Leu Arg Ala Gln Leu Ser Gly His Lys Gly Thr Tyr Asn Lys Phe
 65 70 75 80
 Asp Tyr Ile Val His Cys Ala Gly Val Thr Lys Cys Ala Asp Lys Ser
 85 90 95
 Asp Phe Asp Arg Val Asn Tyr Leu Gln Thr Lys Tyr Phe Val Asp Thr
 100 105 110
 Leu Arg Glu Leu Asn Met Ile Pro Lys Gln Phe Ile Tyr Ile Ser Thr
 115 120 125
 Leu Ser Val Phe Gly Pro Ile Arg Glu Lys Asp Tyr Ser Pro Ile Ser
 130 135 140
 Glu Glu Asp Thr Pro Ala Pro Asn Thr Ala Tyr Gly Leu Ser Lys Leu
 145 150 155 160
 Lys Ala Glu Leu Tyr Ile Gln Ser Ile Pro Gly Phe Pro Tyr Val Ile
 165 170 175
 Tyr Arg Pro Thr Gly Val Tyr Gly Pro Arg Glu Ala Asp Tyr Phe Leu
 180 185 190
 Met Ala Lys Ser Ile Arg Gln His Thr Asp Phe Ser Val Gly Tyr Lys
 195 200 205
 Arg Gln Asp Leu Thr Phe Val Tyr Val Lys Asp Ile Val Gln Ala Ile
 210 215 220

Phe Leu Gly Ile Glu Lys Glu Val Ser Arg Arg Ala Tyr Phe Leu Ser
 225 230 235 240
 Asp Gly Lys Val Tyr Lys Ser Arg Ala Phe Ser Asp Leu Ile Gln Lys
 245 250 255
 Glu Leu Gly Asp Pro Phe Val Ile His Ile Lys Cys Pro Leu Ile Val
 260 265 270
 Leu Lys Val Val Ser Leu Leu Ala Glu Phe Ile Ala Thr Arg Ser Gly
 275 280 285
 Lys Ser Ser Thr Leu Asn Ser Asp Lys Tyr Lys Ile Met Lys Gln Arg
 290 295 300
 Asn Trp Gln Cys Asp Ile Thr Pro Ala Val Lys Glu Leu Gly Tyr Ala
 305 310 315 320
 Pro Glu Tyr Asp Leu Glu Lys Gly Val Lys Glu Thr Ile Ala Trp Tyr
 325 330 335
 Lys Asn Glu Gly Trp Leu
 340

<210> 7151
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 7151
 Phe Tyr Gln Glu Asn Ile Val Met Lys Thr Val Ile Ile Glu Asn Lys
 1 5 10 15
 Glu Gln Val Glu Glu Ile Ile Ser Arg Cys Asp Ile Cys Phe Val Gly
 20 25 30
 Ile Thr Asp Leu Glu Gly Asn Pro Tyr Val Ile Pro Met Asn Phe Gly
 35 40 45
 Tyr Gln Asp Gly Val Ile Tyr Leu His Ser Gly Pro Thr Gly Ser Ser
 50 55 60
 Ile Asp Met Leu Ala Arg Asn Asn Arg Val Cys Ile Thr Phe Ser Val
 65 70 75 80
 Asp His Glu Leu Val Phe Gln His Pro Lys Val Ala Cys Ser Tyr Arg
 85 90 95
 Met Arg Ala Lys Ser Val Ile Cys Arg Gly Arg Val Asn Phe Ile Glu
 100 105 110
 Asp Pro Glu Lys Arg Glu Ala Leu Asn Ile Leu Met Arg His Tyr
 115 120 125
 Ser Ser Arg Glu Phe Val Tyr Ser Asp Pro Ala Val Lys Asn Val Lys
 130 135 140
 Ile Trp Glu Ile Pro Ile Asp Ser Val Thr Ala Lys Glu Tyr Ala Val
 145 150 155 160
 Pro His Thr Lys

<210> 7152
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7152
 Ile Glu Asn Arg Lys Lys Met Lys Ile Gly His Ile Asp Leu Gly Glu
 1 5 10 15
 Arg Pro Val Phe Leu Ala Pro Met Glu Asp Val Thr Asp Pro Ala Phe
 20 25 30
 Arg Leu Met Cys Lys Lys Phe Gly Ala Asp Met Val Tyr Thr Glu Phe
 35 40 45
 Val Ser Ser Asp Ala Leu Ile Arg Ser Val Asn Lys Thr Thr Gln Lys

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      50              55              60
Leu Thr Ile Cys Asp Glu Arg Pro Val Ala Ile Gln Ile Tyr Gly
65              70              75              80
Lys Asp Thr Glu Ala Met Val Gly Ala Ala Arg Ile Val Glu Glu Ala
      85              90              95
Gln Pro Asp Ile Leu Asp Ile Asn Phe Gly Cys Pro Val Lys Lys Val
      100              105              110
Ala Gly Lys Gly Ala Gly Ala Gly Met Leu Gln Asn Ile Pro Lys Met
      115              120              125
Leu Glu Ile Thr Arg Ala Val Val Asp Ala Val Lys Ile Pro Val Thr
      130              135              140
Val Lys Thr Arg Leu Gly Trp Asp Ala Asp His Lys Ile Ile Val Asp
145              150              155              160
Leu Ala Glu Gln Leu Gln Asp Cys Gly Ile Ala Ala Leu Ala Ile His
      165              170              175
Gly Arg Thr Arg Ala Gln Met Tyr Thr Gly Glu Ala Asp Trp Thr Leu
      180              185              190
Ile Gly Glu Val Lys Asn Asn Pro Arg Met His Ile Pro Ile Ile Gly
      195              200              205
Asn Gly Asp Val Thr Thr Ala Ala Gly Ala Lys Glu Cys Phe Glu Arg
      210              215              220
Tyr Gly Val Asp Ala Ile Met Ile Gly Arg Gly Ser Ile Gly Arg Pro
225              230              235              240
Trp Ile Phe Arg Glu Val Lys His Tyr Leu Glu Thr Gly Glu Glu Leu
      245              250              255
Pro Arg Glu Ser Phe Glu Trp Tyr Leu Asp Val Leu Arg Glu Glu Val
      260              265              270
Leu Asn Ser Val Ala Arg Leu Asp Glu Arg Arg Gly Ile Ile His Ile
      275              280              285
Arg Arg His Leu Ala Ala Thr Pro Leu Phe Lys Gly Ile Pro Asn Phe
      290              295              300
Arg Glu Thr Arg Ile Ala Met Leu Arg Thr Glu Ser Val Glu Glu Leu
305              310              315              320
Phe Arg Ile Phe Asp Gly Leu Thr Thr Glu
      325              330

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<210> 7153

<211> 652

<212> PRT

<213> B.fragilis

<400> 7153

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Ile Val Asn Ser Ile Met Thr Lys Ile Asp Ser Lys Ile Pro Glu Gly
1              5              10              15
Gln Leu Ala Glu Lys Trp Ser Asn Tyr Lys Ala His Gln Lys Leu Val
      20              25              30
Asn Pro Ala Asn Lys Arg Arg Leu Asp Ile Ile Val Val Gly Thr Gly
      35              40              45
Leu Ala Gly Ala Ser Ala Ala Ala Ser Leu Gly Glu Met Gly Phe Arg
      50              55              60
Val Phe Asn Phe Cys Ile Gln Asp Ser Pro Arg Arg Ala His Ser Ile
65              70              75              80
Ala Ala Gln Gly Gly Ile Asn Ala Ala Lys Asn Tyr Gln Asn Asp Gly
      85              90              95
Asp Ser Val Tyr Arg Leu Phe Tyr Asp Thr Ile Lys Gly Gly Asp Tyr
      100              105              110
Arg Ala Arg Glu Ala Asn Val Tyr Arg Leu Ala Glu Val Ser Asn Ala
      115              120              125
Ile Ile Asp Gln Cys Val Ala Gln Gly Val Pro Phe Ala Arg Asp Tyr

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130	135	140
Gly Gly Thr Leu Asp Asn Arg Ser Phe Gly Gly Ala Gln Val Ser Arg		
145	150	155
Thr Phe Tyr Ala Arg Gly Gln Thr Gly Gln Gln Leu Leu Leu Gly Ala		160
	165	170
Tyr Ser Ala Leu Ser Arg Gln Val Gln Lys Gly Thr Val Lys Leu Tyr		175
	180	185
Thr Arg Tyr Glu Met Leu Asp Leu Val Val Ile Glu Gly Arg Ala Arg		190
	195	200
Gly Ile Ile Ala Arg Asn Leu Val Thr Gly Glu Ile Glu Arg Phe Ala		205
	210	215
Ala His Ala Val Val Ile Gly Thr Gly Gly Tyr Gly Asn Ala Phe Phe		220
	225	230
Leu Ser Thr Asn Ala Met Gly Ser Asn Gly Ser Val Ala Ile Gln Cys		235
	245	250
Tyr Lys Lys Gly Ala Tyr Phe Ala Asn Pro Cys Phe Ala Gln Ile His		255
	260	265
Pro Thr Cys Ile Pro Val His Gly Asp Lys Gln Ser Lys Leu Thr Leu		270
	275	280
Met Ser Glu Ser Leu Arg Asn Asp Gly Arg Ile Trp Val Pro Lys Lys		285
	290	295
Ile Glu Asp Ala Lys Ala Leu Gln Ala Gly Thr Lys Lys Pro Thr Glu		300
	305	310
Ile Pro Asp Glu Asp Arg Asp Phe Tyr Leu Glu Arg Arg Tyr Pro Ala		315
	325	330
Phe Gly Asn Leu Val Pro Arg Asp Val Ala Ser Arg Ala Ala Lys Glu		335
	340	345
Arg Cys Asp Ala Gly Phe Gly Val Asn Asn Thr Gly Leu Ala Val Phe		350
	355	360
Leu Asp Phe Lys Tyr Ala Ile Asp Arg Leu Gly Glu Asp Val Val Arg		365
	370	375
Ala Arg Tyr Gly Asn Leu Phe Asp Met Tyr Glu Glu Ile Thr Asp Glu		380
	385	390
Asn Pro Tyr Lys Thr Pro Met Met Ile Phe Pro Ala Ile His Tyr Thr		395
	405	410
Met Gly Gly Ile Trp Val Asp Tyr Glu Leu Met Thr Ser Ile Pro Gly		415
	420	425
Leu Phe Ala Ile Gly Glu Ala Asn Phe Ser Asp His Gly Ala Asn Arg		430
	435	440
Leu Gly Ala Ser Ala Leu Met Gln Gly Leu Ala Asp Gly Tyr Phe Val		445
	450	455
Leu Pro Tyr Thr Ile Gln Asn Tyr Leu Ala Asp Gln Ile Gln Val Pro		460
	465	470
Arg Phe Ser Thr Asp Leu Pro Glu Phe Ala Ala Ala Glu Lys Glu Val		475
	485	490
Lys Asp Lys Ile Gln Lys Ile Lys Ala Val Asn Gly Lys His Ser Val		495
	500	505
Asp Ser Ile His Lys Lys Leu Gly His Ile Met Trp Asp Phe Val Gly		510
	515	520
Met Ala Arg Thr Lys Glu Ser Leu Gln Lys Ala Leu Thr Gly Ile Glu		525
	530	535
Glu Val Lys Lys Asp Phe Trp Thr Asn Val Arg Ile Pro Gly Asp Val		540
	545	550
Asn Glu Leu Asn Val Glu Leu Glu Lys Ala Leu Arg Leu Ile Asp Phe		555
	565	570
Ile Glu Val Gly Met Leu Met Ala Arg Asp Gly Leu Asn Arg Glu Glu		575
	580	585
Ser Cys Gly Gly His Phe Arg Thr Glu Tyr Gln Thr Pro Glu Gly Glu		590
	595	600
		605

Ala Leu Arg Asp Asp Lys Asn Phe Ser Tyr Val Ala Cys Trp Lys Tyr
 610 615 620
 Thr Gly Glu Asn Ser Glu Pro Glu Leu Ile Lys Glu Asp Leu Asn Tyr
 625 630 635 640
 Gln Phe Val Lys Val Gln Thr Arg Asn Tyr Lys Ser
 645 650

<210> 7154
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 7154
 Phe Met Ala Arg Glu Thr Gln Cys Asn Arg Gln Thr Asp Cys Ala Gln
 1 5 10 15
 Cys Pro Lys Ala Thr Glu Gly Ile Leu Val His Arg Lys Phe Pro Lys
 20 25 30
 Gly Gln His Phe Pro Pro Asp Lys Cys Thr Gln Asn Cys Ile Leu Phe
 35 40 45
 Ile Leu Gln Gly Glu Leu Leu Val Asn Ser Glu Glu Tyr Pro Gly Thr
 50 55 60
 Thr Leu Arg Glu Gly Gln Phe Ile Leu Gln Ser Ile Gly Ser Lys Leu
 65 70 75 80
 Glu Leu Leu Ala Leu Thr Asp Val Asn Tyr Val Val Tyr Trp Phe Asn
 85 90 95
 Glu Pro Pro Leu Ile Cys Glu Gln Arg Tyr His Glu Ile Leu Gln Gln
 100 105 110
 Ser Glu Ala Pro Leu Thr Tyr Thr Pro Leu Val Met Thr Gln Arg Ile
 115 120 125
 Thr Asn Phe Met Lys Asp Ile Cys Asp Tyr Leu Asp Glu Gln Met Pro
 130 135 140
 Cys Gly Ala Phe Ile Asp Leu Lys Cys Gln Glu Leu Met Tyr Leu Ile
 145 150 155 160
 Ile Cys Tyr Tyr Pro Thr Pro Gln Leu Ser Lys Phe Phe Tyr Pro Ile
 165 170 175
 Ser Ser Tyr Thr Glu Ser Phe Gln Tyr Phe Val Met Gln Asn Tyr Glu
 180 185 190
 Lys Val Lys Asn Val Glu Glu Phe Ala His Leu Gly Gly Tyr Thr Thr
 195 200 205
 Thr Thr Phe Arg Arg Leu Phe Lys Asn Met Tyr Gly Val Pro Val Tyr
 210 215 220
 Glu Trp Ile Leu Ser Lys Lys Arg Glu Gly Ile Leu Glu Asp Leu Gln
 225 230 235 240
 His Thr Lys Gln Arg Ile Thr Glu Ile Ser Asn Arg Tyr Gly Phe Asp
 245 250 255
 Ser Leu Ser His Phe Ala His Phe Cys Lys Ala Ser Phe Gly Asp Ser
 260 265 270
 Pro Arg Ala Leu Arg Thr Arg Ala Ala Arg Gly Glu Lys Ile Thr Ala
 275 280 285
 Leu Lys Thr Glu
 290

<210> 7155
 <211> 300
 <212> PRT
 <213> B.fragilis

<400> 7155
 Gln Met Glu Ser Glu Lys Ser Ser Arg Glu Lys Gly Ile Tyr Lys Val


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1           5           10           15
Thr Ile Val Gly Ser Ile Val Asn Phe Leu Leu Leu Val Phe Lys Phe
20           25           30
Phe Ala Gly Ile Ala Gly His Ser Ala Ala Met Leu Ala Asp Ala Val
35           40           45
His Ser Leu Ser Asp Phe Ile Thr Asp Ile Val Val Ile Val Phe Val
50           55           60
Arg Ile Ala Gly Lys Pro Glu Asp Lys Gly His Asp Tyr Gly His Gly
65           70           75           80
Lys Tyr Glu Thr Leu Ala Thr Ala Ile Ile Gly Leu Leu Leu Leu Cys
85           90           95
Val Gly Phe Gly Ile Phe Trp Asn Gly Ala Ser Ser Ile Tyr Thr Phe
100          105          110
Leu Arg Gly Gly Gln Leu Glu Ser Pro Gly Val Val Ala Leu Val Ala
115          120          125
Ala Leu Val Ser Ile Val Ser Lys Glu Ile Leu Tyr Gln Tyr Thr Val
130          135          140
Ile Gln Gly Lys Lys Leu Asn Ser Gln Ala Val Ile Ala Asn Ala Trp
145          150          155          160
His His Arg Ser Asp Ala Leu Ser Ser Ile Gly Thr Ala Ile Gly Ile
165          170          175
Gly Gly Ala Ile Leu Leu Gly Asp His Trp Arg Val Leu Asp Pro Val
180          185          190
Ala Ala Val Val Val Ser Phe Phe Ile Met Lys Val Ser Val Arg Leu
195          200          205
Leu Ile Pro Cys Val Asp Glu Leu Leu Glu Lys Ser Leu Pro Glu Asp
210          215          220
Val Glu Lys Glu Ile Glu Gln Thr Val Leu Ser Phe Pro Gly Val Ser
225          230          235          240
Gln Pro His His Leu Arg Thr Arg Arg Ile Gly Asn Tyr Tyr Ala Ile
245          250          255
Glu Leu His Val Arg Met Asp Gly Lys Ile Thr Leu Glu Glu Ala His
260          265          270
Ser Thr Ala Thr Ala Ile Glu Asn Lys Leu Lys Glu Met Phe Gly Lys
275          280          285
Gly Thr His Val Gly Ile His Val Glu Pro Thr Lys
290          295          300

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<210> 7156

<211> 74

<212> PRT

<213> B.fragilis

<400> 7156

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Pro Tyr Leu Ser Arg Ala Ile Lys Cys Ile Ile Tyr Tyr Asn Ile Met
1           5           10           15
Asp Ser Pro Ile Phe Glu Asn Arg Ile Gln Val Leu Tyr Leu Asn Pro
20           25           30
Glu Val Phe Tyr Leu His Lys Met Met Asp Ser Ile Glu Tyr Tyr Leu
35           40           45
Gly Val Ser Val Lys Ser Gln Leu Ser Ala Thr Glu Pro Val Ile Asp
50           55           60
Ile Phe Ser Thr Pro Phe Asn Val Asn Thr
65           70

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<210> 7157

<211> 317

<212> PRT

<213> B.fragilis

<400> 7157

Thr Asp Met Gly Lys Ile Ala Lys Lys Leu Thr Asp Leu Val Gly Asn
 1 5 10 15
 Thr Pro Leu Leu Glu Leu Ser Asn Tyr Asn Ala Ser Asn Gly Leu Lys
 20 25 30
 Ala Arg Val Val Ala Lys Leu Glu Tyr Phe Asn Pro Ala Gly Ser Val
 35 40 45
 Lys Asp Arg Ile Ser Leu Ala Met Val Glu Asp Ala Glu Ala Lys Gly
 50 55 60
 Thr Leu Lys Ser Gly Ala Thr Ile Ile Glu Pro Thr Ser Gly Asn Thr
 65 70 75 80
 Gly Val Gly Leu Ala Phe Val Ala Ala Ala Lys Gly Tyr Lys Leu Ile
 85 90 95
 Leu Thr Met Pro Asp Thr Met Ser Met Glu Arg Arg Asn Leu Leu Lys
 100 105 110
 Ala Leu Gly Ala Glu Leu Val Leu Thr Pro Gly Ala Asn Gly Met Lys
 115 120 125
 Gly Ala Ile Ala Lys Ala Glu Glu Leu Arg Ala Ala Thr Pro Gly Ser
 130 135 140
 Val Ile Leu Gln Gln Phe Glu Asn Pro Ala Asn Pro Ala Val His Val
 145 150 155 160
 Arg Thr Thr Gly Gln Glu Ile Trp Arg Asp Thr Asp Gly Lys Val Asp
 165 170 175
 Ile Phe Val Ala Gly Val Gly Thr Gly Gly Thr Val Ser Gly Val Gly
 180 185 190
 Ala Ala Leu Lys Glu His Asn Pro Ala Val Arg Ile Val Ala Val Glu
 195 200 205
 Pro Val Asp Ser Pro Val Leu Ser Gly Gly Val Pro Gly Pro His Lys
 210 215 220
 Ile Gln Gly Ile Gly Ala Gly Phe Ile Pro Lys Thr Tyr His Ala Ala
 225 230 235 240
 Val Val Asp Glu Ile Arg Gln Val Gly Asn Asp Asp Ala Ile Arg Thr
 245 250 255
 Ser Arg Glu Leu Ala Ala Lys Glu Gly Leu Leu Val Gly Ile Ser Ser
 260 265 270
 Gly Ala Ala Val Tyr Ala Ala Thr Glu Leu Ala Lys Leu Pro Glu Asn
 275 280 285
 Glu Gly Lys Leu Ile Val Val Leu Leu Pro Asp Thr Gly Glu Arg Tyr
 290 295 300
 Leu Ser Thr Ile Leu Tyr Ala Phe Glu Glu Tyr Pro Leu
 305 310 315

<210> 7158

<211> 425

<212> PRT

<213> B.fragilis

<400> 7158

Phe Val Thr Met Tyr Lys Ile Asn Asp Phe Glu Ile Met Ala Pro Val
 1 5 10 15
 Gly Ser Arg Glu Ser Leu Ala Ala Ala Ile Gln Ala Gly Ala Asp Ser
 20 25 30
 Ile Tyr Phe Gly Ile Glu Asn Leu Asn Met Arg Ala Arg Ser Ala Asn
 35 40 45
 Thr Phe Thr Ile Glu Asp Leu Arg Glu Ile Ala Arg Thr Cys Asp Glu
 50 55 60
 His Gly Met Lys Ser Tyr Leu Thr Val Asn Thr Ile Ile Tyr Asp Lys
 65 70 75 80

Asp Ile Glu Leu Met Arg Thr Ile Val Asp Ala Ala Lys Glu Ala Gly
 85 90 95
 Ile Ser Ala Val Ile Ala Ala Asp Val Ala Val Met Ser Tyr Ala Asn
 100 105 110
 Lys Ile Gly Gln Glu Val His Leu Ser Thr Gln Leu Asn Ile Ser Asn
 115 120 125
 Ala Glu Ala Leu Lys Phe Tyr Ala Gln Phe Ala Asp Val Val Val Leu
 130 135 140
 Ala Arg Glu Leu Asn Leu Glu Gln Val Ala Glu Ile Tyr Arg Gln Ile
 145 150 155 160
 Gln Glu Glu His Ile Cys Gly Pro Ser Gly Glu Leu Ile Arg Ile Glu
 165 170 175
 Met Phe Cys His Gly Ala Leu Cys Met Ala Val Ser Gly Lys Cys Tyr
 180 185 190
 Leu Ser Leu His Glu Met Asn His Ser Ala Asn Arg Gly Ala Cys Met
 195 200 205
 Gln Ile Cys Arg Arg Ala Tyr Thr Val Arg Asp Lys Asp Thr Asp Val
 210 215 220
 Glu Leu Glu Val Asp Asn Gln Tyr Ile Met Ser Pro Lys Asp Leu Lys
 225 230 235 240
 Thr Ile His Phe Met Asn Lys Met Ile Asp Ala Gly Val Arg Val Phe
 245 250 255
 Lys Ile Glu Gly Arg Ala Arg Gly Pro Glu Tyr Val Arg Thr Val Val
 260 265 270
 Glu Cys Tyr Lys Gln Ala Ile Arg Ala Tyr Leu Asp Asp Ser Phe Thr
 275 280 285
 Asp Glu Lys Ile Ala Ala Trp Asp Glu Arg Leu Lys Thr Val Phe Asn
 290 295 300
 Arg Gly Phe Trp Asp Gly Tyr Tyr Leu Gly Gln Arg Leu Gly Glu Trp
 305 310 315 320
 Thr Lys Asn Tyr Gly Ser Ala Ala Thr Glu Arg Lys Ile Tyr Val Gly
 325 330 335
 Lys Gly Ile Lys Tyr Phe Ser Asn Ile Gly Val Ala Glu Phe Leu Val
 340 345 350
 Glu Ala Ala Glu Val Ser Val Gly Asp Lys Leu Leu Ile Thr Gly Pro
 355 360 365
 Thr Thr Gly Ala Val Phe Ala Thr Leu Asp Glu Ala Arg Val Glu Leu
 370 375 380
 Asn Pro Val Glu Thr Val Lys Lys Gly Glu His Phe Ser Met Lys Leu
 385 390 395 400
 Asp Lys Ile Arg Pro Ser Asp Lys Leu Tyr Lys Leu Val Ser Thr Glu
 405 410 415
 Glu Leu Lys Lys Phe Lys Gly Leu Glu
 420 425

<210> 7159

<211> 321

<212> PRT

<213> B.fragilis

<400> 7159

Met Lys Asp Ile Thr Arg Leu Leu Cys Met Val Leu Leu Ser Phe Leu
 1 5 10 15
 Val Val Thr Gly Cys Ser Arg Arg Asp Ile Leu Asp Asp Tyr Pro Val
 20 25 30
 Ser Gly Val Glu Val Arg Leu Asp Trp Ser Gly Val Thr Glu Lys Leu
 35 40 45
 Pro Glu Gly Val Arg Ile Ile Phe Tyr Pro Lys Asp Glu Lys Gly Arg
 50 55 60

Lys Ile Asp Thr Tyr Leu Ser Val Thr Gly Gly Glu Val Lys Val Pro
 65 70 75 80
 Ser Gly His Tyr Ala Val Val Ile Tyr Asn Tyr Asp Thr Glu Thr Val
 85 90 95
 Leu Ile Arg Gly Glu Glu Ser Tyr Glu Thr Ile Gln Ala Tyr Thr Asn
 100 105 110
 Phe Cys Lys Leu Gly Ile Ala Gly Thr Glu Lys Met Val Trp Gly Pro
 115 120 125
 Asp Pro Leu Tyr Val Val Asn Ile Asp Asp Leu Asp Ile Gln Asn Ser
 130 135 140
 Glu Glu Thr Leu Ile Leu Lys Leu Lys Pro Lys Leu Val Ile Arg Thr
 145 150 155 160
 Tyr Ser Phe Ser Ile Lys Val Gln Gly Leu Ser Asn Val Ser Asn Val
 165 170 175
 Ile Gly Ser Ile Gly Gly Met Ala Asp His Tyr Phe Leu Gly Lys Ala
 180 185 190
 Tyr Ala Met Cys Asp Asp Tyr Pro Ile Asn Ile Asp Leu Asn Val Lys
 195 200 205
 Ala Gly Lys Ile Glu Gly Val Phe Thr Thr Phe Gly Leu Pro Glu Ala
 210 215 220
 Ile Ile Thr Arg Leu Glu Ile Lys Leu Pro Val Met Met Asn Leu Met
 225 230 235 240
 Ile Ile Lys Val Asp Asn Ser Val Gln Glu Val Lys Ile Asn Ile Thr
 245 250 255
 Glu Ala Val Gln Glu Pro Thr Gly Gly Gly Glu Gly Gly Glu Gly Glu
 260 265 270
 Glu Thr Lys Pro Pro Ala Leu Val Glu Val Glu Ile Glu Asp Glu Ile
 275 280 285
 Lys Val Asp Asp Val Glu Thr Pro Pro Ser Gly Gly Gly Gly Ile Gly
 290 295 300
 Gly Asp Val Gly Asp Trp Asp Asp Glu Thr Asn Val Glu Leu Pro Val
 305 310 315 320
 Gly

<210> 7160
 <211> 718
 <212> PRT
 <213> B.fragilis

<400> 7160
 Asn Glu Pro Ile Met Ala Lys Lys Lys Glu Lys Lys Ala Gly Lys Arg
 1 5 10 15
 Met Lys Lys Lys Glu Leu Ser Lys Ala Val Leu Asp Phe Phe His Ala
 20 25 30
 Lys Gln Asp Glu Val Ile Ser Leu Lys Tyr Ile Phe Ser Glu Leu Lys
 35 40 45
 Leu Thr Thr His Pro Leu Lys Met Leu Cys Met Asp Ile Leu Ser Asp
 50 55 60
 Leu Leu Ala Asp Asp Tyr Ile Thr Glu Val Asp Lys Asn Lys Tyr Lys
 65 70 75 80
 Leu Asn Asn His Gly Ile Glu Met Thr Gly Thr Phe Gln Arg Lys Ser
 85 90 95
 Asn Gly Lys Asn Ser Phe Ile Pro Glu Gly Gly Gly Asp Pro Ile Phe
 100 105 110
 Val Ala Glu Arg Asn Ser Ala His Ala Met Asn Asn Asp Lys Val Arg
 115 120 125
 Ile Ala Phe Tyr Ala Lys Arg Arg Gly Cys Glu Ala Glu Gly Glu Val
 130 135 140

Ile Glu Ile Leu Gln Arg Ala Asn Asp Thr Phe Val Gly Thr Leu Glu
 145 150 155 160
 Val Glu Lys Ser Tyr Ala Phe Leu Val Thr Glu Asn Arg Thr Leu Ala
 165 170 175
 Asn Asp Ile Phe Ile Pro Lys Asp Lys Leu Lys Gly Gly Lys Thr Gly
 180 185 190
 Asp Lys Ala Val Val Lys Val Thr Glu Trp Pro Asp Lys Ala Lys Asn
 195 200 205
 Pro Ile Gly Gln Val Leu Asp Ile Leu Gly Lys Ala Gly Asp Asn Thr
 210 215 220
 Thr Glu Met His Ala Ile Leu Ala Glu Phe Gly Leu Pro Tyr Val Tyr
 225 230 235 240
 Pro Gln Ser Val Glu Lys Ala Ala Asp Lys Ile Pro Ala Glu Ile Ser
 245 250 255
 Ala Glu Glu Ile Ala Arg Arg Glu Asp Phe Arg Lys Val Thr Thr Phe
 260 265 270
 Thr Ile Asp Pro Lys Asp Ala Lys Asp Phe Asp Asp Ala Leu Ser Ile
 275 280 285
 Arg Pro Leu Lys Asp Gly Leu Trp Glu Val Gly Val His Ile Ala Asp
 290 295 300
 Val Thr His Tyr Val Lys Glu Gly Ser Ile Ile Asp Lys Glu Ala Glu
 305 310 315 320
 Lys Arg Ala Thr Ser Val Tyr Leu Val Asp Arg Thr Ile Pro Met Leu
 325 330 335
 Pro Glu Arg Leu Cys Asn Phe Ile Cys Ser Leu Arg Pro Asn Glu Glu
 340 345 350
 Lys Leu Ala Phe Ser Ala Ile Phe Asp Ile Thr Glu Lys Gly Glu Val
 355 360 365
 Arg Asp Ser Arg Ile Val His Thr Val Ile Glu Ser Asp Arg Arg Phe
 370 375 380
 Thr Tyr Glu Glu Ala Gln Gln Ile Ile Glu Thr Lys Glu Gly Asp Phe
 385 390 395 400
 Lys Asp Glu Ile Leu Met Leu Asp Thr Ile Ala Lys Ala Leu Arg Glu
 405 410 415
 Lys Arg Phe Thr Ala Gly Ala Ile Asn Phe Asp Arg Tyr Glu Val Lys
 420 425 430
 Phe Glu Ile Asp Glu Lys Gly Lys Pro Ile Ser Val Tyr Phe Lys Glu
 435 440 445
 Ser Lys Asp Ala Asn Lys Leu Val Glu Glu Phe Met Leu Leu Ala Asn
 450 455 460
 Arg Thr Val Ala Glu Lys Ile Gly Lys Ala Pro Lys Gly Lys Lys Pro
 465 470 475 480
 Lys Val Leu Pro Tyr Arg Ile His Asp Leu Pro Asp Pro Glu Lys Leu
 485 490 495
 Asp Asn Leu Ala Gln Phe Ile Ala Arg Phe Gly Tyr Arg Leu Arg Thr
 500 505 510
 Ser Gly Thr Lys Thr Asp Val Ser Lys Ser Ile Asn His Leu Leu Asp
 515 520 525
 Asp Ile Gln Gly Lys Lys Glu Glu Asn Leu Ile Glu Thr Val Ser Ile
 530 535 540
 Arg Ala Met Gln Lys Ala Arg Tyr Ser Thr His Asn Ile Gly His Tyr
 545 550 555 560
 Gly Leu Ala Phe Asp Tyr Tyr Thr His Phe Thr Ser Pro Ile Arg Arg
 565 570 575
 Phe Pro Asp Met Met Val His Arg Leu Val Thr Arg Tyr Met Asp Gly
 580 585 590
 Gly Arg Ser Val Ser Glu Thr Lys Tyr Glu Asp Leu Cys Asp His Ser
 595 600 605
 Ser Asn Met Glu Gln Ile Ala Ala Asn Ala Glu Arg Ala Ser Ile Lys

610	615	620
Tyr Lys Gln Val Glu Phe Met Ser Glu Arg Leu Gly Gln Thr Tyr Asp		
625	630	635
Gly Val Ile Ser Gly Val Thr Glu Trp Gly Leu Tyr Val Glu Leu Asn		640
	645	650
Glu Asn Lys Cys Glu Gly Met Ile Pro Ile Arg Asp Leu Asp Asp Asp		655
	660	665
Tyr Tyr Glu Phe Asp Glu Lys Asn Tyr Cys Leu Arg Gly Arg Arg Lys		670
	675	680
Asn Arg Ile Tyr Ser Leu Gly Asp Ala Ile Thr Val Lys Val Ala Arg		685
	690	695
Ala Asn Leu Glu Lys Lys Gln Leu Asp Phe Ala Leu Val Glu		700
705	710	715

<210> 7161
 <211> 409
 <212> PRT
 <213> B.fragilis

<400> 7161

Lys Ser Leu Met Ile Thr Met Tyr Arg Ile Tyr Met Tyr Leu Leu Ala	
1	5
Ala Cys Leu Leu Gly Val Thr Ala Cys Glu Glu Glu Gly Leu Gly	10
	15
	20
Asn Glu Glu Thr Pro Phe Ala Pro Tyr Val Leu Ser Leu Gly Ile Asn	25
	30
	35
Ser Asn Gly Thr Thr Thr Tyr Tyr Val Val Thr Ala Pro Glu Leu Met	40
	45
	50
Ser Gly Thr Ile Asn Ala Val Ala Lys Gly Ile Glu Gln Asn Gly Tyr	55
65	60
	65
Arg Asp Tyr Glu Gln Ala Gly Gln Thr Val Phe Ser Ile Gly Gly Leu	70
	75
	80
	85
Gly Leu Thr Ser Ala Thr Gly Ile Val Arg Asp Ala Asn Gly Tyr Leu	90
	95
	100
Thr Glu Arg Gly Asp Phe Val Phe Asn Ser Ser Leu Asn Ala Phe Thr	105
	110
	115
Gln Met Asp Gly Gln Asn Met Ile Gly Leu Glu Leu Pro Ala Asn Lys	120
	125
	130
Glu Ser Gly Asp Gln Met Thr Leu Tyr Thr Val Asn Ile Ser Asp Val	135
145	140
	145
Ser Ile Thr Ser Gln Val Lys Ala Pro Val Phe Pro Leu Asn Gln Leu	150
	155
	160
	165
Glu Trp Pro Ser Ile Thr Gly Met Cys Tyr Ser Glu Gly Asn Val Tyr	170
	175
	180
Val Thr Tyr Phe Pro Met Asn Pro Ser Thr Phe Glu Thr Leu Tyr Thr	185
	190
	195
Asp Thr Thr Phe Val Ala Val Tyr Ser Tyr Pro Asp Met Gln Phe Lys	200
	205
	210
Thr Leu Met Lys Asp Thr Arg Thr Gly Pro Ala Gly Ser Trp Asn Ala	215
225	220
	225
Phe Asn Gly Ile Phe Lys Val Glu Ser Gly Asp Met Tyr Ile Met Ser	230
	235
	240
	245
Asn Ser Ala Ile Ala Asn Gly Phe Ser Gln Ser Thr Lys Asn Ala Ala	250
	255
	260
Phe Leu Arg Ile Pro Lys Gly Glu Thr His Phe Asp Asp Tyr Tyr Phe	265
	270
	275
Asp Phe Glu Thr Val Ser Gly Gly Leu Lys Pro Ala His Ile Lys Tyr	280
	285
	290
Ile Gly Asn Gly Leu Val Phe Ala Glu Val Ser Ser Ile Val Arg His	295
	300

3615

305 310 315 320
 Gln Ser Ala Asp Arg Trp Gly Asp Lys Ser Leu Lys Cys Cys Ile Ile
 325 330 335
 Asp Leu Asn Asn Lys Thr Val Arg Asp Ile Lys Glu Ile Pro Val His
 340 345 350
 Asn Gly Asp Gly Gly Arg Arg Phe Ala Ala Leu Val Asp Gly Gly Tyr
 355 360 365
 Val Tyr Arg Pro Val Thr Thr Ser Glu Gly Thr Tyr Ile Tyr Gln Val
 370 375 380
 Asp Pro Gln Ala Ala Thr Ala Val Arg Gly Ala Lys Val Ser Thr Thr
 385 390 395 400
 Phe Val Gly Gly Phe Phe Arg Leu Asp
 405

<210> 7162

<211> 286

<212> PRT

<213> B.fragilis

<400> 7162

Cys Ala Ala Val Gln Pro Arg Gly Glu Asp Leu Arg Thr Leu Asn Ser
 1 5 10 15
 Met Arg Lys Tyr Leu Ser Phe Ile Leu Leu Ile Gly Leu Thr Leu
 20 25 30
 Gln Ala Gln Glu Thr Tyr Lys Thr Val Lys Asp Ile Ser Tyr Ile Pro
 35 40 45
 Ala Gly Glu Thr Asp Gly Tyr Arg Lys Glu Arg Cys Lys Leu Asp Val
 50 55 60
 Tyr Tyr Pro Val Gly Lys Lys Asp Phe Pro Thr Ile Val Trp Phe His
 65 70 75 80
 Gly Gly Gly Leu Glu Gly Gly Gly Lys His Val Pro Glu Met Phe Met
 85 90 95
 Asn Gln Gly Phe Ala Ile Val Ala Val Asn Tyr Arg Leu Ser Pro Lys
 100 105 110
 Ala Gln Asn Pro Ala Tyr Thr Glu Asp Ala Ala Ala Val Ala Trp
 115 120 125
 Ala Tyr Lys His Ile Glu Glu Tyr Gly Gly Ser Pro Arg Arg Val Phe
 130 135 140
 Val Thr Gly His Ser Ala Gly Gly Tyr Leu Thr Leu Met Val Gly Leu
 145 150 155 160
 Asp Lys Ser Tyr Leu Gln Glu Tyr Gly Val Asp Ala Asp Ser Ile Ala
 165 170 175
 Ala Tyr Leu Pro Ile Ser Gly Gln Thr Val Thr His Phe Thr Ile Arg
 180 185 190
 Lys Glu Arg Ser Leu Pro Glu Gly Ile Pro Val Ile Asp Gln Tyr Ala
 195 200 205
 Pro Cys Asn Lys Ala Arg Lys Asp Thr Pro Pro Phe Val Leu Ile Thr
 210 215 220
 Gly Asp Arg Asn Leu Glu Met Ala Asp Arg Tyr Glu Glu Asn Ala Leu
 225 230 235 240
 Leu Ala Ser Val Leu Lys Asn Ile Gly Asn Lys Lys Val Ser Leu Tyr
 245 250 255
 Glu Leu Gln Gly Phe Asp His Gly Gln Val Tyr Val Pro Gly Cys Cys
 260 265 270
 Leu Val Ala Asn Tyr Ile Arg Asn Phe Ile Ala Asp Gly Arg
 275 280 285

<210> 7163

<211> 64

<212> PRT
 <213> B.fragilis

<400> 7163

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Tyr Pro Asn Val Tyr Asn Tyr Ile Ser Ile Tyr Leu Tyr His Leu Glu
1           5           10           15
Tyr Phe Ile Phe Leu Ala Ile Phe Ser Glu Asn Gly Leu Phe Phe Ile
          20           25           30
Ser Ser Cys Ile Ser Val Pro Met Ser Pro Asp Ser Lys Ala His Ile
          35           40           45
Asn Ile Ser Glu Gly Thr Val Ile Leu Leu Phe Thr Lys Tyr Tyr Lys
          50           55           60

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<210> 7164

<211> 206

<212> PRT

<213> B.fragilis

<400> 7164

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Lys Val Asn Val Met Glu Thr Asn Asp Ile Lys Glu Thr Trp Lys Ala
1           5           10           15
Gly Ile Glu Arg Thr Ile Lys Pro Tyr Pro Glu Glu Arg Leu Asn Glu
          20           25           30
Met Val Val Asn Ser Ala Arg Lys Ser Ile Lys Thr Val Tyr Pro Gly
          35           40           45
Thr Val Phe Arg Leu Val Ile Ile Ala Val Ala Val Phe Leu Ile Val
          50           55           60
Ser Gln Phe Val Lys Glu Gln Asn Ala Thr Arg Met Tyr Leu Asp Met
          65           70           75           80
Gly Ala Leu Ala Val Leu Ser Val Ser Tyr Phe Leu Trp Glu Arg Ser
          85           90           95
Ala Tyr Lys Met Arg Lys Tyr Thr His Gly Met Pro Val Lys Glu Trp
          100          105          110
Leu Glu Tyr Arg Ile Lys Glu Ile Glu Lys Ser Ile Arg Phe Asn Thr
          115          120          125
Lys Tyr Asp Trp Ile Val Tyr Thr Cys Ser Phe Leu Ser Ala Ile Gly
          130          135          140
Phe Tyr Val Phe Tyr Leu Met Ala Thr Asn Val Val Pro Gly Ile Leu
          145          150          155          160
Asn Val Ile Val Ile Pro Leu Gly Met Cys Ile Tyr Leu Leu Ile Ile
          165          170          175
Lys Arg Ser Leu Lys Arg Asn Tyr Arg Arg Thr Leu Gln Glu Leu Lys
          180          185          190
Glu Leu Tyr Arg Gln Phe Glu Ile Glu Asp Gln Glu Gly Arg
          195          200          205

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<210> 7165

<211> 239

<212> PRT

<213> B.fragilis

<400> 7165

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Val Val Leu Leu Thr Glu Arg Ile Lys Ala Ser Leu Glu Thr Asn Ser
1           5           10           15
Val Tyr Thr Ile Ser Ala Pro Asn Phe Leu His Ile Arg Arg Lys Ala
          20           25           30
Gly Ser Val Thr Ser Ser Ile Gly Ala Arg Asn Thr Gly Arg Ser Pro
          35           40           45
Arg Ser Met Trp Pro Ile Phe Ile Phe Leu Arg Phe Ser Ile His Tyr

```


50	55	60
Leu Ala Ala Lys Val Arg Lys Lys Pro Leu Pro Leu His Leu Ile His		
65	70	75
Leu Phe Asn Trp Ile Glu Ile Met Lys Lys Arg Leu Phe Ser Ile Ala		80
	85	90
Leu Cys Leu Thr Phe Ile Leu Ser Ala Thr Ser Val Ser Ala Gln Asp		95
	100	105
Ala Ala Tyr Arg Glu Ala Leu Ser Lys Met Leu Glu Ala Ser Gly Ala		110
	115	120
Met Thr Thr Val Lys Ser Met Val Pro Gln Met Ile Gly Met Met Lys		125
	130	135
His Thr Tyr Ser Asn Val Pro Asp Glu Phe Trp Lys Asn Phe Glu Glu		140
	145	150
Gln Leu Ser Glu Lys Ala Asn Thr Gln Phe Leu Asp Ile Tyr Val Ser		155
	165	170
Ile Tyr His Arg Tyr Leu Thr Ile Ser Asp Leu Lys Lys Ile Thr Ala		175
	180	185
Phe Tyr Glu Ser Pro Val Gly Lys Lys Leu Ala Glu Ser Thr Pro Val		190
	195	200
Met Thr Ala Glu Ala Met Glu Ala Gly Gln Gln Ile Gly Met Gly Ile		205
	210	215
Ala Lys Glu Ile Met Ala Asn Leu Lys Glu Lys Gly Tyr Val Gln		220
	225	230
		235

<210> 7166

<211> 234

<212> PRT

<213> B.fragilis

<400> 7166

Asn Gln Ser Phe Met Trp Leu Ser Asn Ser Ser Val Gly Arg Lys Val		
1	5	10
Val Met Ser Val Thr Gly Ile Ala Leu Val Leu Phe Leu Thr Phe His		15
	20	25
Met Ala Met Asn Leu Val Ala Ile Ile Ser Ala Glu Gly Tyr Asn Leu		30
	35	40
Val Cys Glu Phe Leu Gly Ala Asn Trp Tyr Ala Leu Val Ala Thr Leu		45
	50	55
Gly Leu Ala Ala Leu Phe Val Ile His Ile Ile Tyr Ala Phe Trp Leu		60
	65	70
Thr Ile Gln Asn Arg Ala Ala Arg Gly Ser Glu Arg Tyr Ala Val Val		75
	85	90
Asp Lys Pro Lys Thr Val Glu Trp Ala Ser Gln Asn Met Leu Val Leu		95
	100	105
Gly Ile Ile Val Ile Leu Gly Leu Gly Leu His Leu Phe Asn Phe Trp		110
	115	120
Ala Lys Met Gln Leu Pro Glu Leu Val His Asn Met Gly Gly Val Ala		125
	130	135
Asp Thr Thr Tyr Ala Ala Asp Gly Val Tyr His Ile Met Asn Thr Phe		140
	145	150
Ser Asn Pro Val Tyr Val Val Leu Tyr Leu Val Trp Leu Gly Ala Leu		155
	165	170
Trp Phe His Leu Thr His Gly Phe Trp Ser Ser Met Gln Ser Leu Gly		175
	180	185
Trp Asn Asn Lys Ile Trp Ile Asn Arg Trp Lys Cys Ile Ser Asn Ile		190
	195	200
Tyr Ser Thr Ile Val Val Val Cys Phe Ala Leu Val Val Val Val Phe		205
	210	215
		220
Phe Val Lys Ser Leu Ala Cys Gly Ala Cys		

225

230

<210> 7167
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 7167

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Lys Tyr Asn Leu Lys Leu Leu Gly Met Asn Glu Gln Lys Glu Leu Thr
1          5          10          15
Lys Ala Glu Leu Gln Ile Met Gln Val Leu Trp Gln Lys Glu Asn Ala
20          25          30
Phe Val Asn Glu Ile Leu Gln Glu Leu Glu Glu Pro Arg Pro Ala Tyr
35          40          45
Asn Thr Val Ser Thr Val Leu Arg Val Leu Gln Asn Lys Gly Phe Val
50          55          60
Ala Tyr Arg Ser Phe Gly Lys Asn Tyr Gln Tyr Tyr Pro Leu Val Ser
65          70          75
Lys Glu Ser Tyr Thr Asn Arg Phe Met Asn Arg Val Val Asp Asn Phe
85          90          95
Phe Ser Gly Ser Val Lys Ala Met Val Ser Phe Phe Thr Lys Lys Glu
100         105         110
Lys Met Ser Val Gln Glu Ile Asp Glu Leu Ile Glu Met Leu Lys Glu
115         120         125
Asn Lys Lys Glu
130

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<210> 7168
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 7168

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Asn Met Asn Lys Lys Asn Leu Leu Ile Ile Ala Val Ser Val Leu Val
1          5          10          15
Leu Ala Leu Ile Gly Leu Thr Tyr Leu Leu Phe Ser Glu Lys Gln Thr
20          25          30
Asn Arg Glu Leu Val Gln Glu Phe Gln Leu Asp Lys Glu Asp Leu Glu
35          40          45
Asn Glu Tyr Thr Arg Phe Ala Gln Gln Tyr Asp Glu Leu Lys Leu Thr
50          55          60
Val Ser Asn Asp Ser Leu Ala Asp Leu Leu Ala Gln Glu Gln Val Lys
65          70          75
Thr Gln Arg Leu Leu Glu Glu Leu Arg Thr Val Lys Ser Ser Asn Ala
85          90          95
Thr Glu Ile Arg Arg Leu Lys Lys Glu Leu Ala Thr Leu Arg Lys Val
100         105         110
Met Ile Gly Tyr Ile Asn Gln Ile Asp Ser Leu Asn Lys Leu Thr Ala
115         120         125
Gln Gln Lys Gln Val Ile Ala Glu Val Thr Gln Lys Tyr Asn Ala Ala
130         135         140
Ser Arg Gln Ile Asn Asn Leu Ser Glu Glu Lys Lys Asn Leu Asn Gln
145         150         155
Lys Val Thr Leu Ala Ala Gln Leu Asp Ala Thr Asn Ile Trp Ile Glu
165         170         175
Pro Arg Asn Lys Arg Gly Lys Lys Ala Lys Lys Val Lys Asp Ile Val
180         185         190
Lys Leu Ala Ile Gly Phe Thr Ile Val Lys Asn Ile Thr Ala Glu Thr
195         200         205

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Gly Glu Arg Thr Leu Tyr Ile Arg Ile Thr Lys Pro Asp Asn Asp Ala
 210 215 220
 Leu Thr Lys Ser Pro Ser Asn Thr Phe Pro Tyr Glu Asn Arg Thr Leu
 225 230 235 240
 Thr Tyr Ser Ile Lys Lys Tyr Ile Glu Tyr Asn Gly Glu Glu Gln Thr
 245 250 255
 Ile Asn Val Phe Trp Asp Val Glu Glu Phe Leu Tyr Ala Gly Ala Tyr
 260 265 270
 Arg Val Asp Ile Phe Ala Asp Gly Thr Met Ile Gly Ser Gln Lys Phe
 275 280 285
 Thr Leu Asp
 290

<210> 7169

<211> 1097

<212> PRT

<213> B.fragilis

<400> 7169

Tyr Lys Met Lys Lys Leu Phe Met Ser Ala Val Ala Leu Leu Phe Ala
 1 5 10 15
 Gly Ala Leu Trp Ala Gln Glu Asn Pro Leu Trp Met Arg His Cys Ala
 20 25 30
 Ile Ser Pro Asp Gly Thr Thr Ile Ala Phe Thr Tyr Lys Gly Asp Ile
 35 40 45
 Phe Thr Val Pro Val Ser Gly Gly Lys Ala Thr Gln Ile Thr Thr Asn
 50 55 60
 Pro Ala Phe Asp Thr Thr Pro Ile Trp Ser Pro Asp Ser Lys Gln Ile
 65 70 75 80
 Ala Phe Ala Ser Asp Arg Met Gly Ser Met Asp Val Phe Ile Val Ser
 85 90 95
 Lys Asp Gly Gly Glu Pro Arg Arg Leu Thr Thr Phe Ser Gly Gly Glu
 100 105 110
 Thr Pro Val Ala Phe Thr Asp Ala Gly His Ile Leu Phe Thr Ala Asp
 115 120 125
 Ile Met Pro Ser Thr Glu Asp Ala Gly Phe Pro Ser Asn Gly Gln Phe
 130 135 140
 Gln Gln Ile Tyr Gln Ile Pro Val Ser Gly Gly Arg Pro Val Met Phe
 145 150 155 160
 Ser Ser Met Pro Met Glu Cys Ile Ser Ile Asn Lys Glu Gly Thr Ile
 165 170 175
 Leu Tyr Gln Asp Lys Lys Gly Tyr Glu Asp Tyr Trp Arg Lys His Gln
 180 185 190
 Lys Ser Pro Ile Ala Arg Asp Ile Trp Met Leu Arg Pro Gly Gln Thr
 195 200 205
 Pro Arg Tyr Glu Lys Gln Thr Thr Phe Ile Gly Glu Asp Arg Glu Pro
 210 215 220
 Val Trp Ala Pro Asp Gly Lys Ser Phe Tyr Tyr Leu Ser Glu Glu Asn
 225 230 235 240
 Gly Thr Phe Asn Val Tyr Gln Arg Thr Pro Gly Ser Asp Thr Ser Lys
 245 250 255
 Gln Val Thr His His Lys Gln His Pro Val Arg Phe Leu Ser Met Ala
 260 265 270
 Ser Asn Gly Asn Leu Cys Tyr Gly Phe Asp Gly Glu Ile Tyr Thr Leu
 275 280 285
 Ala Pro Gly Gly Lys Pro Gln Lys Val Ser Val Lys Ile Leu Ser Asp
 290 295 300
 Arg Asn Asp Lys Asp Leu Ile Arg Gln Ile Lys Thr Ser Gly Ala Thr
 305 310 315 320

Glu Met Ala Val Ser Pro Asp Gly Lys Glu Val Ala Phe Ile Leu Arg
 325 330 335
 Gly Asp Val Tyr Val Thr Ser Val Glu Tyr Lys Thr Thr Lys Gln Val
 340 345 350
 Thr Asn Thr Pro Cys Gln Glu Arg Gly Ile Asp Phe Ala Pro Asp Gly
 355 360 365
 Arg Thr Leu Val Tyr Ala Ser Glu Arg Gly Gly Leu Trp Gln Leu Tyr
 370 375 380
 Thr Ser Thr Ile Val Arg Lys Asp Glu Lys Gln Phe Thr Tyr Ala Thr
 385 390 395 400
 Glu Leu Lys Glu Glu Arg Leu Thr Asn Ser Asp Val Ala Ser Phe Asn
 405 410 415
 Pro Lys Tyr Ser Pro Asp Gly Lys Glu Ile Ala Phe Leu Glu Asn Arg
 420 425 430
 Thr Ala Ile Arg Val Ile Asn Leu Lys Thr Lys Lys Val Arg Thr Val
 435 440 445
 Met Asp Ala Gln Tyr Gln Tyr Ser Tyr Ser Asp Gly Asp Gln Trp Phe
 450 455 460
 Glu Trp Ser Pro Asp Ser Lys Trp Ile Leu Ser Glu Phe Ile Gly Ile
 465 470 475 480
 Gly Gly Trp Asn Asn Lys Asp Ile Val Leu Leu Asn Ala Asp Gly Lys
 485 490 495
 Gly Glu Met His Asn Leu Thr Glu Ser Gly Tyr Ser Asp Gly Asn Ala
 500 505 510
 Lys Trp Val Leu Gly Gly Lys Ala Met Val Trp Phe Ser Asp Arg Ala
 515 520 525
 Gly Tyr Arg Ser His Gly Ser Trp Gly Ala Gln Tyr Asp Ala Tyr Ile
 530 535 540
 Met Phe Phe Asp Val Asp Ala Tyr Asp Arg Phe Arg Met Asn Lys Glu
 545 550 555 560
 Asp Leu Ala Leu Leu Glu Glu Ala Glu Lys Ala Glu Lys
 565 570 575
 Glu Lys Ala Glu Lys Lys Lys Lys Glu Asn Lys Lys Asp Asp Lys Lys
 580 585 590
 Lys Asp Ala Lys Glu Lys Asn Lys Lys Asp Gly Asp Glu Glu Lys Lys
 595 600 605
 Glu Glu Val Lys Pro Leu Lys Phe Asp Leu Asp Asn Arg Phe Asp Arg
 610 615 620
 Ile Val Arg Leu Thr Val Asn Ser Ser Phe Met Gly Asp Ala Val Leu
 625 630 635 640
 Thr Pro Lys Gly Asp Lys Leu Tyr Tyr Leu Ala Ala Phe Glu Ser Gly
 645 650 655
 Tyr Asp Leu Trp Glu His Asp Leu Lys Glu Asn Ser Thr Lys Ile Leu
 660 665 670
 Leu Lys Gly Val Gly Gly Gly Ser Leu Leu Pro Asp Lys Lys Gly Glu
 675 680 685
 Asn Ile Phe Met Cys Thr Gly Gly Gly Met Lys Lys Ile Glu Ile Ala
 690 695 700
 Gly Ser Lys Thr Thr Pro Ile Ala Phe Glu Ser Phe Phe Asp Tyr Gln
 705 710 715 720
 Pro Gly Gly Glu Arg Ala Tyr Ile Phe Asp His Val Trp Gln Gln Val
 725 730 735
 Asp Asp Lys Phe Tyr Val Lys Asp Leu Gln Gly Val Asp Trp Pro Leu
 740 745 750
 Tyr Lys Lys Ser Tyr Glu Lys Phe Leu Pro Tyr Ile Asn Asn Asn Tyr
 755 760 765
 Asp Phe Ala Glu Leu Leu Ser Glu Met Leu Gly Glu Leu Asn Ala Ser
 770 775 780
 His Thr Gly Ala Arg Tyr Ser Gly Ala Gly Gly Ala Leu Ala Thr Ala

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785          790          795          800
Ala Leu Gly Val Phe Tyr Asp Asp Thr Tyr Asn Gly Asp Gly Leu Lys
      805          810          815
Ile Lys Glu Ile Ile Glu Gln Gly Pro Phe Thr Leu Lys Lys Thr Asp
      820          825          830
Val Lys Pro Gly Cys Ile Ile Glu Lys Val Asp Gly Thr Leu Ile Lys
      835          840          845
Lys Gly Glu Asp Tyr Phe Pro Leu Phe Glu Gly Lys Val Gly Arg Lys
      850          855          860
Val Leu Leu Ser Val Tyr Asp Pro Ala Thr Lys Lys Arg Phe Glu Glu
      865          870          875          880
Thr Val Lys Ala Ile Ser Tyr Gly Ala Gln Arg Glu Leu Leu Tyr Lys
      885          890          895
Arg Trp Val Glu Arg Asn Arg Lys Lys Val Glu Glu Leu Ser Gly Gly
      900          905          910
Arg Leu Gly Tyr Val His Ile Lys Gly Met Asp Ser Gln Ser Phe Arg
      915          920          925
Lys Met Tyr Ser Glu Leu Leu Gly Arg Tyr Arg Asn Lys Glu Ala Val
      930          935          940
Val Val Asp Val Arg His Asn Gly Gly Gly Trp Leu His Asp Asp Val
      945          950          955          960
Val Thr Leu Leu Ser Gly Lys Glu Tyr Gln Arg Phe Val Pro Arg Gly
      965          970          975
Gln Tyr Ile Gly Ser Asp Pro Phe Asn Lys Trp Leu Lys Pro Ser Cys
      980          985          990
Met Leu Val Cys Glu Asp Asn Tyr Ser Asn Ala His Gly Thr Pro Tyr
      995          1000          1005
Val Tyr Lys Thr Leu Gly Ile Gly Lys Leu Val Gly Thr Pro Val Ala
      1010          1015          1020
Gly Thr Met Thr Ala Val Trp Trp Glu Arg Gln Ile Asp Pro Ser Leu
      1025          1030          1035          1040
Val Phe Gly Ile Pro Gln Val Gly Cys Met Asp Met Gln Gly Asn Tyr
      1045          1050          1055
Leu Glu Asn His Thr Leu Glu Pro Asp Val Leu Ile Tyr Asn Glu Pro
      1060          1065          1070
Ala Ala Ser Leu Lys Gly Glu Asp Ala Gln Leu Lys Ala Ala Val Asp
      1075          1080          1085
Cys Leu Leu Lys Glu Leu Pro Lys Lys
      1090          1095

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<210> 7170

<211> 731

<212> PRT

<213> B.fragilis

<400> 7170

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Gly Met Ile Asp Phe Asp Tyr Ser Glu Trp Ala Ile Leu Arg Phe Ile
1          5          10          15
Gly Ala Ser Phe Val Leu Trp Leu Cys Tyr Tyr Leu Leu Phe Asp Arg
      20          25          30
Lys Ala Pro Phe Asn Gln Cys Arg Asn Tyr Leu Leu Phe Ser Val Leu
      35          40          45
Leu Ala Gly Ala Val Ser Val Leu Arg Ile Pro Val Tyr Pro Val Glu
      50          55          60
Val Val Lys Pro Val Lys Met Glu Gln Ile Val Val Ala Gln Glu Ala
      65          70          75          80
Gln Thr Asp Lys Val Ser Leu Met Gln Ile Asp Asn Asn Gly Ile Gln
      85          90          95
Pro Asp Thr Leu Ala Thr Ala Met Leu Thr Asp Val Asn Glu Ala Val

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Gly Arg Pro Leu Arg Ser Asp Lys Leu Glu Glu Val Thr Leu Asn Ala
 580 585 590
 Asn Gln Leu Ser Val Ser Ser Arg His Asn Gly Gly Arg Thr Gln Ile
 595 600 605
 Gln Lys Ile Glu Thr Leu Pro Asp Lys Thr Leu Val Val Leu Ser Val
 610 615 620
 Pro Ile His Tyr Asp Arg Asn Trp Leu Val Ile Asn Lys Gly Leu Cys
 625 630 635 640
 Ile Val Asp Cys Lys Thr Gly Asp Glu Tyr Pro Val Leu Glu Glu Ala
 645 650 655
 His Gly Ile Glu Met Asn Lys Leu Leu Trp Val Glu Gly Cys Gln Gly
 660 665 670
 Ser Ser Val Leu Leu Thr Leu Val Phe Pro Lys Leu Pro Lys Arg Val
 675 680 685
 Lys Thr Ile Asp Phe Tyr Asn Lys Tyr Pro Asp Ala Gly Ile Ile Ser
 690 695 700
 Pro Thr Asn Gly Ser Ser Trp Asn Trp Trp Lys Ile Lys Ile Lys Asp
 705 710 715 720
 Tyr Gln Lys Glu Pro Tyr Lys Arg Val Ile Leu
 725 730

<210> 7171

<211> 76

<212> PRT

<213> B.fragilis

<400> 7171

Thr Ile Phe Gly Val Ser Ser Asn Lys Lys Ser Phe Ser Leu Pro Ala
 1 5 10 15
 Leu Ser Thr Val Thr Ser Gly Asn Thr Thr Phe Gly Val Ser Ala Phe
 20 25 30
 Ile Val Thr Asp Thr Ile Gly Asn Thr Gly Ser Thr Ser Thr Gly Phe
 35 40 45
 Ser Val Lys Glu Asn Lys Ala Asn Thr Pro Ile His Lys Gly Ser Asn
 50 55 60
 Ala Ile Leu Arg Thr Pro Ala Lys Arg Ser Leu Tyr
 65 70 75

<210> 7172

<211> 317

<212> PRT

<213> B.fragilis

<400> 7172

Asn Ile Ser Ile Met Ser Lys Val Thr Val Val Gly Ala Gly Asn Val
 1 5 10 15
 Gly Ala Thr Cys Ala Asn Val Leu Ala Phe Asn Glu Val Ala Asp Glu
 20 25 30
 Val Val Met Leu Asp Val Lys Glu Gly Val Ser Glu Gly Lys Ala Met
 35 40 45
 Asp Met Met Gln Thr Ala Gln Leu Leu Gly Phe Asp Thr Thr Ile Val
 50 55 60
 Gly Cys Thr Asn Asp Tyr Ala Gln Thr Ala Asn Ser Asp Val Val Val
 65 70 75 80
 Ile Thr Ser Gly Ile Pro Arg Lys Pro Gly Met Thr Arg Glu Glu Leu
 85 90 95
 Ile Gly Val Asn Ala Gly Ile Val Lys Ser Val Ala Glu Asn Leu Leu
 100 105 110
 Lys Tyr Ser Pro Asn Ala Ile Ile Val Val Ile Ser Asn Pro Met Asp

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      115              120              125
Thr Met Thr Tyr Leu Ala Leu Lys Ser Leu Gly Leu Pro Lys Asn Arg
      130              135              140
Val Ile Gly Met Gly Gly Ala Leu Asp Ser Ser Arg Phe Lys Tyr Phe
145              150              155              160
Leu Ser Gln Ala Leu Gly Cys Asn Ala Asn Glu Val Glu Gly Met Val
      165              170              175
Ile Gly Gly His Gly Asp Thr Thr Met Ile Pro Leu Ala Arg Leu Ala
      180              185              190
Thr Tyr Lys Gly Gln Pro Val Ser Thr Leu Leu Ser Glu Glu Lys Leu
      195              200              205
Asn Glu Val Val Ala Ser Thr Met Val Gly Gly Ala Thr Leu Thr Lys
      210              215              220
Leu Leu Gly Thr Ser Ala Trp Tyr Ala Pro Gly Ala Ala Gly Ala Tyr
225              230              235              240
Val Val Glu Ser Ile Ile His Asn Gln Lys Lys Met Val Pro Cys Ser
      245              250              255
Val Met Leu Glu Gly Glu Tyr Gly Glu Ser Asp Leu Cys Ile Gly Val
      260              265              270
Pro Val Ile Leu Gly Lys Asn Gly Ile Glu Lys Ile Val Glu Leu Glu
      275              280              285
Leu Asn Ala Asp Glu Lys Ala Lys Phe Ala Ala Ser Ala Ala Ala Val
      290              295              300
His Lys Thr Asn Ala Ala Leu Lys Glu Val Gly Ala Leu
305              310              315

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<210> 7173

<211> 676

<212> PRT

<213> B.fragilis

<400> 7173

```

Arg Leu Ile Ile Leu Ile Leu Cys Ile Cys Ser Ser Leu Gln Met Gln
1              5              10              15
Gly Ala Leu Ser Ala Leu Lys Gly Gly Lys Ser Asn Leu Ala Leu His
      20              25              30
Leu Asp Gly Lys Asp Asn Asn Val Arg Thr Gly Met Gly Ile Leu Glu
      35              40              45
Pro Ser Trp Thr Leu Glu Ser Trp Ile Lys Gly Asp Asp Cys Gln Trp
      50              55              60
Asp Ser Leu Glu Val Ile Ile Gly Gly Gly Glu Tyr Ser Glu Leu Asn
      65              70              75              80
Trp Val Asp Tyr Leu Pro Leu Val Val Lys Glu Gly Lys Ile His Ser
      85              90              95
Ser Arg Ala Asn Leu Ser Ser Pro Gln Thr Leu Asp Asp Gln Trp His
      100              105              110
His Val Ala Leu Thr Cys Asp Gly Lys Gln Thr Ile Leu Tyr Leu Asp
      115              120              125
Gly Lys Gln Val Asp Lys Ala Asp Thr Ala Thr Ala Ile Leu Pro Gly
      130              135              140
Ala Ile Gly Val His Asp Val Tyr Tyr Thr Phe Gly Gly Leu Ile Asp
145              150              155              160
Glu Val Arg Val Trp Arg Ser Ala Leu Pro Glu Gln Thr Ile Arg Arg
      165              170              175
Trp Met Asn Arg Pro Val Glu Ala Thr His Pro Ala Phe Lys Ser Leu
      180              185              190
Trp Gly Tyr Tyr Asn Phe Asp Asp Leu Lys Asp Glu Thr Ser Val Asn
      195              200              205
Trp Val Gly Lys Gly His Gln Ala Tyr His Ile Arg Asn Gly Arg Asn

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210	215	220
Lys Tyr Asn Glu Lys	Ala Pro Leu Ala His	Ala Val Pro Asn Asp Asn
225	230	235
Pro Ala Phe Lys	Phe Asp Gly Asn Gln	Leu Phe Asn Ala Val
245	250	255
Ile Ile Gln Ser Glu Trp Asp	Ala Asp Gln Gly Ser Lys	Asn Asp Gln
260	265	270
Ala Leu Lys Leu Arg Ile	Ala Val Gln Gly Ser Lys	Asn Pro Leu Lys
275	280	285
Leu Thr Glu Leu Lys Leu	Asp Phe Thr Gly Thr Thr	Asp Leu Ala Asp
290	295	300
Ile Glu Gln Ile His Ile	Tyr Ser Thr Gly Ser Glu	Ala Arg Ser Thr
305	310	315
Gln Arg Lys Glu Leu Phe	Gly Asn Gly His Thr	Pro Glu Gln Ser Leu
325	330	335
Thr Leu Arg Pro Thr His	Gly Glu Glu Ile Leu	Leu Gln Pro Gly Ile
340	345	350
Asn Tyr Phe Leu Leu Thr	Phe Asp Val Arg Ser Lys	Ala Thr Pro Gly
355	360	365
His Thr Leu Tyr Ala Ser	Val Pro Phe Phe Lys	Leu Asn Gly Lys Lys
370	375	380
Ile Ile Pro Gly Thr Ser	Ala Glu Glu Val Arg	Lys Gln Val Thr Cys
385	390	395
Asn Asn Gln Thr Gln Ser	Asn Ile Val Lys Val	Leu Gln Trp Asn Ile
405	410	415
Trp His Gly Gly Ile His	Leu Gly Asn Glu Gly	Gln Gln Arg Val Leu
420	425	430
Asp Leu Ile Arg Ser Ser	Arg Ala Asp Val Ile	Met Met Gln Glu Ala
435	440	445
Tyr Gly Ile Gln Gln Met	Leu Ala Asp Ser Leu	Gly Tyr His Leu Lys
450	455	460
Thr His Ser Leu Lys Asp	Asn Leu Ala Met Tyr	Ser Arg Phe Pro Leu
465	470	475
Glu Ala Ile Ala Trp Arg	Glu Pro Phe Lys Ser	Asn Pro Ala Lys Ile
485	490	495
Thr Leu Pro Asn Gly Lys	Arg Ile Met Phe Val	Asp Cys Trp Leu Arg
500	505	510
Tyr Ala Tyr Arg Pro Glu	Tyr Thr Ser Gly Tyr	Ala Glu Lys Gly Leu
515	520	525
Asp Pro Ser Val Trp Val	Ala Glu Asp Ser Ile	Leu Ala Leu Pro Asp
530	535	540
Ile Arg Asn Ile Tyr Thr	Lys Asp Ile Ala Pro	Asn Leu Glu Thr Asp
545	550	555
Met Pro Val Ile Val Thr	Gly Asp Phe Asn Ser	Cys Ser His Leu Asp
565	570	575
Trp Thr Glu Arg Ala Lys	Pro Leu His His Gly	Tyr Gly Pro Val Ala
580	585	590
Phe Pro Ala Ser Arg Tyr	Met Leu Glu Asn Gly	Phe Lys Asp Ser Phe
595	600	605
Arg Glu Lys Asn Pro Asp	Glu Val Ala Tyr Gln	Gly Gly Thr Val Ala
610	615	620
Ala Ile Tyr Gly Gln Met	Gln Met Ser Arg Ile	Asp Phe Ile Tyr Tyr
625	630	635
Lys Gly Gly Leu Lys Val	Leu Ser Ser Lys Ile	Val Arg Thr Ala Pro
645	650	655
Glu Ile Asp Tyr Val Trp	Ala Ser Asp His Ala	Ala Val Leu Thr Val
660	665	670
Phe Glu Val Glu		
675		

Tyr His Thr Trp Gly His Ile Gln Asn Lys Ala Pro Trp Glu Ile Ala
 420 425 430
 Tyr Asn Pro Asn Gly Gln Ile Phe Asn Thr Pro Asp Asn Pro Leu Met
 435 440 445
 Glu Ile Ser Pro Asp Ala Gly Tyr Thr Lys Asn Glu Asn Leu Ser Ala
 450 455 460
 Ile Ala Asn Leu Ala Leu Glu Trp Ser Val Pro Tyr Val Pro Gly Leu
 465 470 475 480
 Arg Leu Lys Ala Leu Gly Asn Tyr Arg Ile Asn Asn Asp Lys Ser Lys
 485 490 495
 Ser Trp Lys Lys Ser Pro Leu Ala Tyr Asp Trp Asp Gly Asn Pro Asn
 500 505 510
 Asp Pro Gly Lys Pro Ser Leu Ser Lys Ser Tyr Ser Asn Trp Ser Ser
 515 520 525
 Tyr Thr Val Gln Gly Phe Ala Asn Tyr Asp Arg Thr Phe Asn Gln Val
 530 535 540
 His Thr Ile Ser Ala Thr Ala Gly Ile Glu Ala Tyr Lys Leu Phe Lys
 545 550 555 560
 Asp Asp Ala Ser Leu Ser Arg Glu Glu Tyr Leu Leu Asp Val Asp Gln
 565 570 575
 Ile Gly Ala Gly Pro Val Ser Thr Ala Lys Asn Ser Ser Ser Glu Gly
 580 585 590
 Glu Glu Ala Arg Ala Gly Val Val Ala Arg Leu Lys Tyr Asp Tyr Ala
 595 600 605
 Ser Lys Tyr Val Ala Glu Ala Ser Leu Arg Tyr Asp Gly Ser Asp Asn
 610 615 620
 Phe Pro Arg Gly Lys Arg Trp Gly Thr Phe Tyr Ala Gly Ser Leu Ala
 625 630 635 640
 Trp Val Ile Ser Glu Glu Ser Phe Trp Gln Thr Leu Lys Asp Arg His
 645 650 655
 Ile Phe Asp Gln Phe Lys Val Arg Ala Ser Tyr Gly Glu Ile Gly Ser
 660 665 670
 Asp Ala Ile Gly Arg Tyr Ala Tyr Leu Gln Ser Tyr Gly Leu Asn Asp
 675 680 685
 Arg Gly Tyr Leu Leu Asn Gly Ser Trp Tyr Pro Gly Phe Ser Glu Gly
 690 695 700
 Ala Leu Val Ser Lys Asp Ile Thr Trp Tyr Thr Arg Asp Phe Asn
 705 710 715 720
 Ile Gly Phe Asp Phe Gly Ser Leu Asn Asn Arg Leu Ser Gly Ser Val
 725 730 735
 Asp Tyr Phe Arg Lys Ser Thr Lys Gly Tyr Leu Thr Ser Pro Ser Ala
 740 745 750
 Val Ala Tyr Thr Asp Pro Leu Gly Ser Leu
 755 760

<210> 7175

<211> 60

<212> PRT

<213> B.fragilis

<400> 7175

Lys Arg Ala Leu Phe Leu Lys Asp Ile Ile His Leu Leu Phe Lys Asp
 1 5 10 15
 Ile Ile Ile Ile Leu Ile Ser Thr Ser Arg Phe Glu Ile Lys Arg Lys
 20 25 30
 Asn Gln Pro Asn Asp Thr Ile Pro Gln Tyr Gly Asp Glu Ile Asn His
 35 40 45
 Thr Lys Asn Glu Ile Cys Val Lys Asn Gly Ile Ile
 50 55 60

<210> 7176
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7176
 Leu Tyr Ser Gly Lys Leu Asn Asn Ser Ile Leu Tyr Ala Asn Phe Ile
 1 5 10 15
 Leu Cys Met Ile Tyr Phe Val Ser Val Leu Gly Asn Cys Ile Val Arg
 20 25 30
 Leu Ile Phe Ser Phe Asp Leu Glu Ala Arg Gly Thr Tyr Gln Asn Asp
 35 40 45
 Asn Tyr Val Phe Glu Glu Gln Met Asp Asp Ile Phe Gln Glu
 50 55 60

<210> 7177
 <211> 227
 <212> PRT
 <213> B.fragilis

<400> 7177
 Gln Val Ala Val Lys Ala Lys Ser Ile Phe Ala Asp Lys Thr Val Pro
 1 5 10 15
 Lys Thr Thr Val Val Ser Tyr Pro Ile Tyr His Ile Glu Asn Ile Val
 20 25 30
 Lys Pro Val Ser Lys Gly Pro His Ala Lys Gln Val Ile Phe Leu Ser
 35 40 45
 Ala Asp Ala Phe Gly Val Leu Pro Pro Val Ser Ile Leu Asn Pro Glu
 50 55 60
 Gln Ala Gln Tyr Tyr Phe Leu Ser Gly Phe Thr Ala Lys Leu Ala Gly
 65 70 75 80
 Thr Glu Arg Gly Ile Thr Glu Pro Thr Pro Thr Phe Ser Ala Cys Phe
 85 90 95
 Gly Ala Ala Phe Leu Ser Leu His Pro Thr Lys Tyr Ala Glu Glu Leu
 100 105 110
 Val Lys Lys Met Glu Met Thr Gly Ala Lys Ala Tyr Leu Val Asn Thr
 115 120 125
 Gly Trp Asn Gly Ser Gly Lys Arg Ile Ser Ile Lys Asp Thr Arg Gly
 130 135 140
 Ile Ile Asp Ala Ile Leu Asp Gly Ser Ile Asp Lys Ala Pro Thr Lys
 145 150 155 160
 Val Ile Pro Phe Phe Asp Phe Val Val Pro Thr Glu Leu Pro Gly Val
 165 170 175
 Asp Pro Lys Ile Leu Asp Pro Arg Asp Thr Tyr Ala Asp Pro Ala Gln
 180 185 190
 Trp Asn Glu Lys Ala Lys Asp Leu Ala Gly Arg Phe Ile Lys Asn Phe
 195 200 205
 Ala Lys Phe Thr Gly Asn Glu Ala Gly Lys Lys Leu Val Ala Ala Gly
 210 215 220
 Pro Lys Leu
 225

<210> 7178
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 7178

Gly Leu Cys Ser Phe Phe Leu Val Ile Tyr Val Ser Phe His Thr Phe
 1 5 10 15
 Pro Val Lys Ile Pro Phe Thr Ser Ser Glu Ser Leu His Pro Leu Thr
 20 25 30
 Lys Gly Ser Ile Lys Ser Asn Asn Lys Tyr Leu Tyr Phe Ile Phe
 35 40 45
 Phe Tyr Phe Phe Ile Pro Phe Leu Ile Ser Asn Ala Ser Ile Val Gly
 50 55 60
 Ser Cys Pro Leu Lys Arg Leu
 65 70

<210> 7179
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 7179

Glu Val Glu Pro Val Glu Lys Asn His Ile Ala Cys Ser Asn Arg Arg
 1 5 10 15
 Arg Val Arg Thr Ser Arg Leu His Arg Pro Pro Arg Ser Arg His Arg
 20 25 30
 Phe Val Trp His Cys Arg Thr Asn Arg Ser Ala Ile His Arg Leu Arg
 35 40 45
 Asn Asn Arg Ser Gly Cys Asp Ser Gly Cys Cys Phe Arg Ser Val Arg
 50 55 60
 Thr Ser Phe Arg Pro Arg Gln Arg Ile Leu Arg Pro Phe Ile Thr Ser
 65 70 75 80
 Asn Ser Gly Ser Gln Ser Arg His Leu Phe Pro Val Ser Ile Asp Arg
 85 90 95
 Arg Ser Thr Arg Arg Ser Ile Arg Leu Pro Tyr Gly Tyr Tyr Tyr Ser
 100 105 110
 Thr Met Lys Thr Asn Tyr His Thr His Thr Thr Arg Cys Met His Ala
 115 120 125
 Val Gly Asp Asp Glu Asp Tyr Val Arg Ser Ala Ile Lys Gly Gly Phe
 130 135 140
 Gln Glu Leu Gly Phe Ser Asp His Gly Pro Trp Lys Tyr His Thr Asp
 145 150 155 160
 Phe Val Ser Asp Ile Arg Met Leu Pro Glu Asp Leu Pro Glu Tyr Ile
 165 170 175
 Glu Ser Ile Arg Ala Leu Lys Glu Lys Tyr Arg Asn Gln Ile Ser Ile
 180 185 190
 Lys Ile Gly Leu Glu Tyr Glu Tyr Phe Pro Glu Tyr Ile His Trp Leu
 195 200 205
 Lys Glu Ile Ile Lys Glu Tyr Arg Leu Asp Tyr Ile Leu Phe Gly Asn
 210 215 220
 His His Tyr His Thr Asp Glu Lys Phe Pro Tyr Phe Gly His His Thr
 225 230 235 240
 Thr Asn Arg Asp Met Leu Asp Leu Tyr Glu Glu Ser Thr Ile Glu Gly
 245 250 255
 Met Glu Ser Gly Leu Phe Ala Tyr Leu Ala His Pro Asp Leu Phe Met
 260 265 270
 Arg Ser Tyr Pro Glu Phe Asp Lys His Cys Ile Ser Val Ser Arg His
 275 280 285
 Ile Cys Arg Ala Ala Ala Arg Leu His Ile Pro Leu Glu Tyr Asn Ile
 290 295 300
 Gly Tyr Val Ala Ile Asn Glu Ala Arg Gly Ile Thr Thr Tyr Pro Cys
 305 310 315 320
 Pro Gln Phe Trp His Ile Ala Ala Asn Glu Gly Cys Thr Ala Ile Ile
 325 330 335

Gly Leu Asp Ala His Asn Asn Leu Asp Leu Glu Asn Pro Thr Tyr Tyr
 340 345 350
 Asp Arg Ala Cys Gln Glu Leu Asn Ala Leu Lys Met Pro Val Ile Asp
 355 360 365
 Thr Ile Pro Phe Leu Lys Tyr
 370 375

<210> 7180
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7180
 Ile Met Ala Thr Ala Tyr His Asn Leu Ser Asp Tyr Asp Phe Asn Ser
 1 5 10 15
 Val Pro Asn Ala Glu Glu Met Lys Phe Gly Ile Val Val Ser Glu Trp
 20 25 30
 Asn Ala Asn Ile Thr Gly Ala Leu Leu Asp Gly Ala Val Lys Thr Leu
 35 40 45
 Lys Lys His Gly Ala Lys Glu Glu Asn Ile Leu Val Lys Thr Val Pro
 50 55 60
 Gly Ser Phe Glu Leu Thr Phe Gly Ala Asn Gln Met Met Glu Asn Ser
 65 70 75 80
 Asp Ile Asp Ala Ile Ile Ile Ile Gly Cys Val Ile Lys Gly Asp Thr
 85 90 95
 Pro His Phe Asp Tyr Val Cys Met Gly Val Thr Gln Gly Val Ala Gln
 100 105 110
 Leu Asn Ala Thr Gly Asp Ile Pro Val Ile Tyr Gly Leu Ile Thr Thr
 115 120 125
 Asn Thr Met Glu Gln Ala Glu Asp Arg Ala Gly Gly Lys Leu Gly Asn
 130 135 140
 Lys Gly Asp Glu Cys Ala Ile Thr Ala Ile Lys Met Ile Asp Phe Val
 145 150 155 160
 Trp Ser Leu Asn Lys
 165

<210> 7181
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 7181
 Arg His Leu Phe Leu Phe Cys Asp Leu Lys Pro Arg Lys Ser Phe Tyr
 1 5 10 15
 Phe Cys Asn Gln Thr Gln Cys Ala His Met Ile Leu Lys Arg Ile Ser
 20 25 30
 Ile Leu Asn Tyr Lys Asn Leu Glu Gln Val Glu Leu Asn Phe Ser Ala
 35 40 45
 Lys Leu Asn Cys Phe Phe Gly Gln Asn Gly Met Gly Lys Thr Asn Leu
 50 55 60
 Leu Asp Ala Val Tyr Phe Leu Ser Phe Cys Lys Ser Ala Gly Asn Pro
 65 70 75 80
 Ile Asp Ser Gln Asn Ile Arg His Glu Gln Asp Phe Phe Val Ile Gln
 85 90 95
 Gly Phe Tyr Glu Ala Met Asp Gly Thr Pro Glu Glu Ile Tyr Cys Gly
 100 105 110
 Met Lys Arg Arg Ser Lys Lys Gln Phe Lys Arg Asn Lys Lys Glu Tyr
 115 120 125
 Ser Arg Leu Ser Asp His Ile Gly Phe Ile Pro Leu Val Met Val Ser

130 135 140
 Pro Ala Asp Ser Glu Leu Ile Ala Gly Gly Ser Asp Glu Arg Arg Arg
 145 150 155 160
 Phe Met Asp Val Val Ile Ser Gln Tyr Asp Lys Glu Tyr Leu Asp Ala
 165 170 175
 Leu Ile Arg Tyr Asn Lys Ala Leu Val Gln Arg Asn Thr Leu Leu Lys
 180 185 190
 Ser Glu Gln Pro Ile Glu Glu Glu Leu Phe Leu Val Trp Glu Glu Met
 195 200 205
 Met Ala Gln Ala Gly Glu Val Val Phe Arg Lys Arg Glu Ala Phe Ile
 210 215 220
 Ser Glu Phe Ile Pro Ile Phe Gln Ser Phe Tyr Ser Tyr Ile Ser Gln
 225 230 235 240
 Asp Lys Glu Gln Val Gly Leu Thr Tyr Glu Ser His Ala Arg Asn Ala
 245 250 255
 Ser Leu Leu Glu Val Leu Lys Glu Ser Arg Val Arg Asp Lys Ile Met
 260 265 270
 Gly Tyr Ser Leu Arg Gly Ile His Lys Asp Glu Leu Asn Met Leu Leu
 275 280 285
 Gly Asp Phe Pro Ile Lys Arg Glu Gly Ser Gln Gly Gln Asn Lys Thr
 290 295 300
 Tyr Leu Val Ala Leu Lys Leu Ala Gln Phe Asp Phe Leu Lys Arg Thr
 305 310 315 320
 Gly Ser Thr Val Pro Leu Leu Leu Leu Asp Asp Ile Phe Asp Lys Leu
 325 330 335
 Asp Ala Ser Arg Val Glu Gln Ile Val Lys Leu Val Ala Gly Asp Asn
 340 345 350
 Phe Gly Gln Ile Phe Ile Thr Asp Thr Asn Arg Glu His Leu Asp Arg
 355 360 365
 Ile Leu Tyr Lys Val Gly Ser Asp Tyr Lys Met Phe Arg Val Glu Ser
 370 375 380
 Gly Ala Ile Asn Glu Met Glu Glu Lys Glu Arg
 385 390 395

<210> 7182

<211> 366

<212> PRT

<213> B.fragilis

<400> 7182

Lys His Phe Leu Thr Phe Ala Pro His Ser Asn Glu Thr Asn Ala Asn
 1 5 10 15
 Leu Glu Lys Tyr Leu Asn Lys Tyr Tyr Lys Thr Leu Lys Ser Leu Asn
 20 25 30
 Lys Met Ile Lys Val Gly Ile Asn Gly Phe Gly Arg Ile Gly Arg Met
 35 40 45
 Val Phe Arg Ala Ala Val Lys Asn Phe Gly Asn Asp Ile Gln Ile Val
 50 55 60
 Gly Ile Asn Asp Leu Leu Asp Ala Glu Tyr Leu Ala Tyr Met Leu Lys
 65 70 75 80
 Tyr Asp Ser Val His Gly Arg Phe Glu Gly Glu Val Ala Val Glu Asp
 85 90 95
 Gly Ala Leu Ile Val Asn Gly Asn Lys Ile Arg Leu Thr Ala Glu Met
 100 105 110
 Asp Pro Ala Asn Leu Lys Trp Asn Glu Val Asp Ala Asp Val Val Val
 115 120 125
 Glu Ser Thr Gly Phe Phe Leu Thr Asp Glu Thr Ala Arg Lys His Ile
 130 135 140
 Gln Ala Gly Ala Lys Lys Val Ile Met Ser Ala Pro Ser Lys Asp Ser

145 150 155 160
 Thr Pro Met Phe Val Tyr Gly Val Asn His Thr Ser Tyr Ala Gly Gln
 165 170 175
 Asp Ile Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Ile
 180 185 190
 Ala Lys Val Leu Asn Asp Lys Phe Gly Ile Val Lys Gly Leu Met Thr
 195 200 205
 Thr Val His Ala Ala Thr Ala Thr Gln Lys Thr Val Asp Gly Pro Ser
 210 215 220
 Lys Lys Asp Trp Arg Gly Gly Arg Gly Ile Leu Glu Asn Ile Ile Pro
 225 230 235 240
 Ser Ser Thr Gly Ala Ala Lys Ala Val Gly Lys Val Leu Pro Val Leu
 245 250 255
 Asn Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Thr Ser Asp Val
 260 265 270
 Ser Val Val Asp Leu Thr Val Val Leu Glu Lys Ala Ala Thr Met Ala
 275 280 285
 Glu Ile Asn Ala Ala Met Lys Glu Ala Ser Glu Gly Glu Leu Lys Gly
 290 295 300
 Ile Leu Gly Tyr Thr Glu Asp Ala Val Val Ser Thr Asp Phe Arg Gly
 305 310 315 320
 Cys Ala Asn Thr Ser Ile Tyr Asp Ser Lys Ala Gly Ile Ser Leu Asp
 325 330 335
 Ser Asn Phe Ala Lys Val Val Ser Trp Tyr Asp Asn Glu Trp Gly Tyr
 340 345 350
 Ser Asn Lys Val Cys Glu Met Ala Arg Val Ile Ala Ala Lys
 355 360 365

<210> 7183

<211> 517

<212> PRT

<213> B.fragilis

<400> 7183

Phe Cys Ala Lys Phe Ile Thr Tyr Leu Tyr Met Gln Glu Lys Ile Ile
 1 5 10 15
 Ile Leu Asp Phe Gly Ser Gln Thr Thr Gln Leu Ile Gly Arg Arg Val
 20 25 30
 Arg Glu Leu Asp Thr Tyr Cys Glu Ile Val Pro Tyr Asn Lys Phe Pro
 35 40 45
 Lys Gly Asp Glu Thr Val Lys Gly Val Ile Leu Ser Gly Ser Pro Phe
 50 55 60
 Ser Val Tyr Asp Glu Ser Ala Phe Lys Val Asp Leu Ser Glu Ile Arg
 65 70 75 80
 Gly Lys Tyr Pro Ile Leu Gly Ile Cys Tyr Gly Ala Gln Phe Met Ala
 85 90 95
 Tyr Thr Asn Gly Gly Lys Val Glu Pro Ala Gly Thr Arg Glu Tyr Gly
 100 105 110
 Arg Ala His Leu Thr Ser Phe Cys Lys Asp Asn Val Leu Phe Lys Gly
 115 120 125
 Val Arg Glu Gly Thr Gln Val Trp Met Ser His Gly Asp Thr Ile Thr
 130 135 140
 Ala Ile Pro Glu Asn Phe Lys Thr Ile Ala Ser Thr Asp Lys Val Ala
 145 150 155 160
 Ile Ala Ala Tyr Gln Val Glu Gly Glu Gln Val Trp Gly Val Gln Phe
 165 170 175
 His Pro Glu Val Phe His Ser Glu Asp Gly Thr Gln Met Leu Arg Asn
 180 185 190
 Phe Val Val Asp Val Cys Gly Cys Lys Gln Asp Trp Ser Pro Ala Ser

195 200 205
 Phe Ile Glu Ser Thr Val Ala Glu Leu Lys Ala Gln Leu Gly Asp Asp
 210 215 220
 Lys Val Val Leu Gly Leu Ser Gly Gly Val Asp Ser Ser Val Ala Ala
 225 230 235 240
 Val Leu Leu Asn Arg Ala Ile Gly Lys Asn Leu Thr Cys Ile Phe Val
 245 250 255
 Asp His Gly Met Leu Arg Lys Asn Glu Phe Lys Asn Val Met His Asp
 260 265 270
 Tyr Glu Cys Leu Gly Leu Asn Val Ile Gly Val Asp Ala Ser Glu Lys
 275 280 285
 Phe Phe Ser Glu Leu Glu Gly Val Thr Glu Pro Glu Arg Lys Arg Lys
 290 295 300
 Ile Ile Gly Lys Gly Phe Ile Asp Val Phe Asp Glu Glu Ala His Lys
 305 310 315 320
 Leu Lys Asp Val Lys Trp Leu Ala Gln Gly Thr Ile Tyr Pro Asp Cys
 325 330 335
 Ile Glu Ser Leu Ser Ile Thr Gly Thr Val Ile Lys Ser His His Asn
 340 345 350
 Val Gly Gly Leu Pro Glu Lys Met Asn Leu Lys Leu Cys Glu Pro Leu
 355 360 365
 Arg Leu Leu Phe Lys Asp Glu Val Arg Arg Val Gly Arg Glu Leu Gly
 370 375 380
 Met Pro Glu His Leu Ile Thr Arg His Pro Phe Pro Gly Pro Gly Leu
 385 390 395 400
 Ala Val Arg Ile Leu Gly Asp Ile Thr Pro Glu Lys Val Arg Ile Leu
 405 410 415
 Gln Asp Ala Asp Asp Ile Phe Ile Gln Gly Leu Arg Asp Trp Gly Leu
 420 425 430
 Tyr Asp Gln Val Trp Gln Ala Gly Val Ile Leu Leu Pro Val Gln Ser
 435 440 445
 Val Gly Val Met Gly Asp Glu Arg Thr Tyr Glu Arg Ala Val Ala Leu
 450 455 460
 Arg Ala Val Thr Ser Thr Asp Ala Met Thr Ala Asp Trp Ala His Leu
 465 470 475 480
 Pro Tyr Glu Phe Leu Gly Lys Val Ser Asn Asp Ile Ile Asn Lys Val
 485 490 495
 Lys Gly Val Asn Arg Val Thr Tyr Asp Ile Ser Ser Lys Pro Pro Ala
 500 505 510
 Thr Ile Glu Trp Glu
 515

<210> 7184
 <211> 236
 <212> PRT
 <213> B.fragilis

<400> 7184
 Lys Asn Asn Lys Lys Asn His Ile Lys Met Ala Glu Gln Lys Asn His
 1 5 10 15
 Asn Asn Glu Leu Asn Val Glu Asp Ala Leu Thr Gln Ser Glu Ala Phe
 20 25 30
 Leu Val Lys Asn Lys Lys Ala Ile Gly Ala Val Val Ala Val Ile
 35 40 45
 Val Ile Val Ala Gly Ala Ile Leu Tyr Lys Asn Phe Tyr Ala Glu Pro
 50 55 60
 Arg Glu Glu Lys Ala Gln Ala Ala Leu Phe Lys Ser Glu Gln Tyr Phe
 65 70 75 80
 Glu Gln Ser Ala Tyr Glu Gln Ala Leu Asn Gly Asp Ser Ile Gly Ser

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      85                      90                      95
Ile Gly Phe Leu Lys Val Ala Asp Gln Phe Ser Gly Thr Lys Ala Ala
      100                      105                      110
Asn Leu Ala Lys Ala Tyr Ala Gly Ile Cys Tyr Gln Asn Leu Gly Lys
      115                      120                      125
Tyr Glu Glu Ala Ile Lys Ala Leu Asp Gly Phe Ser Gly Asp Asp Gln
      130                      135                      140
Met Val Ala Pro Ala Ile Gln Gly Ala Ile Gly Asn Cys Tyr Ala Gln
      145                      150                      155                      160
Leu Gly Gln Leu Asp Lys Ala Thr Ser Ala Leu Leu Lys Ala Ala Asp
      165                      170                      175
His Ala Asp Asn Ser Thr Leu Ser Pro Ile Phe Leu Leu Gln Ala Gly
      180                      185                      190
Glu Ile Leu Met Lys Gln Gly Lys Asn Glu Glu Ala Val Lys Ala Phe
      195                      200                      205
Thr Lys Ile Lys Asp Lys Tyr Phe Gln Ser Tyr Gln Ala Met Asp Ile
      210                      215                      220
Asp Lys Tyr Ile Glu Gln Ala Lys Leu Leu Lys Lys
      225                      230                      235

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<210> 7185
<211> 62
<212> PRT
<213> B.fragilis

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<400> 7185
Asn Leu Cys Leu Ile Ala Tyr Ile Cys Leu Phe Val Glu Tyr Phe Gly
1          5          10          15
Ile Asn Val Val Phe Lys Val Tyr Ile Tyr Ser Leu Phe Asn Thr Lys
      20          25          30
Ile Phe Tyr Tyr Glu Ser Phe Asn Leu Arg Ser Leu Pro Tyr Trp Gly
      35          40          45
Tyr Val Arg Leu Val Met Phe Arg Pro Tyr Cys Arg Phe Val
      50          55          60

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<210> 7186
<211> 716
<212> PRT
<213> B.fragilis

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<400> 7186
Asp Thr Leu Asn Lys Lys Lys Thr Val Arg Lys Ser Val Ile Leu Cys
1          5          10          15
Gly Glu Ile Cys Asn Phe Val Asn Val Thr Leu Ile Leu Leu Asn Met
      20          25          30
Thr Asn Ile Ala Asn Ala Gln Asn Pro Phe Phe Glu Lys Tyr Thr Thr
      35          40          45
Pro Tyr Gly Thr Val Pro Phe Asp Lys Ile Lys Asn Glu His Tyr Glu
      50          55          60
Pro Ala Ile Arg Glu Gly Ile Ser Arg Gln Ala Ala Glu Ile Asp Ala
      65          70          75          80
Ile Val Asn Asn Pro Glu Ala Pro Thr Phe Ala Asn Thr Ile Leu Ala
      85          90          95
Tyr Glu Lys Ser Gly Glu Leu Leu Asp Arg Val Thr Thr Val Phe Gly
      100          105          110
Asn Leu Arg Ser Ala Glu Thr Asn Asp Asp Leu Gln Lys Ile Ala Gln
      115          120          125
Glu Met Ile Pro Leu Leu Ser Glu His Ser Asn Asn Ile Ser Leu Asn
      130          135          140

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<210> 7187
<211> 82
<212> PRT
<213> B.fragilis
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<210> 7188
<211> 102
<212> PRT
<213> B.fragilis
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<210> 7189
<211> 427
<212> PRT
<213> B.fragilis
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<400> 7189

Leu His Met Lys Thr Pro Ser Gln Thr His Val Leu Gly Leu Ala His
 1 5 10 15
 Pro Pro Leu Pro Met Val Arg Leu Ala Phe Ile Gly Leu Gly Asn Arg
 20 25 30
 Gly Val Leu Thr Leu Gln Arg Tyr Leu Gln Ile Glu Gly Val Glu Ile
 35 40 45
 Lys Ala Leu Cys Glu Ile Arg Glu Gly Asn Leu Val Lys Ala Gln Lys
 50 55 60
 Ile Leu Arg Glu Ala Gly Tyr Pro Gln Pro Asp Gly Tyr Thr Gly Pro
 65 70 75 80
 Asp Gly Trp Lys Arg Met Cys Glu Arg Asp Asp Ile Asp Leu Val Phe
 85 90 95
 Ile Cys Thr Asp Trp Leu Thr His Thr Pro Met Ala Val Tyr Ser Met
 100 105 110
 Glu His Gly Lys His Val Ala Ile Glu Val Pro Ala Ala Met Thr Val
 115 120 125
 Glu Glu Cys Trp Lys Leu Val Asp Thr Ala Glu Lys Thr Arg Gln His
 130 135 140
 Cys Met Met Leu Glu Asn Cys Cys Tyr Asp Pro Phe Ala Leu Thr Thr
 145 150 155 160
 Leu Asn Met Ala Gln Gln Gly Val Phe Gly Glu Ile Thr His Val Glu
 165 170 175
 Gly Ala Tyr Ile His Asp Leu Arg Ser Ile Tyr Phe Ala Asp Glu Ser
 180 185 190
 Lys Gly Gly Phe His Asn His Trp Gly Lys Lys Tyr Ser Ile Glu His
 195 200 205
 Thr Gly Asn Pro Tyr Pro Thr His Gly Leu Gly Pro Val Cys Gln Ile
 210 215 220
 Leu Asn Ile His Arg Gly Asp Arg Met Asn Tyr Leu Val Ser Leu Ser
 225 230 235 240
 Ser Leu Gln Ala Gly Met Thr Glu Tyr Ala Arg Lys Asn Phe Gly Ala
 245 250 255
 Asp Ser Pro Glu Ala Arg Gln Lys Tyr Leu Leu Gly Asp Met Asn Thr
 260 265 270
 Thr Leu Ile Gln Thr Val Lys Gly Lys Ser Ile Met Ile Gln Tyr Asn
 275 280 285
 Val Val Thr Pro Arg Pro Tyr Ser Arg Leu His Thr Val Cys Gly Thr
 290 295 300
 Lys Gly Phe Ala Gln Lys Tyr Pro Val Pro Ser Ile Ala Leu Glu Pro
 305 310 315 320
 Asp Ala Gly Ser Pro Leu Glu Gly Lys Ala Leu Glu Glu Ile Met Glu
 325 330 335
 Arg Tyr Lys His Pro Phe Thr Ala Thr Phe Gly Thr Glu Ala His Arg
 340 345 350
 Arg Asn Leu Pro Asn Glu Met Asn Tyr Val Met Asp Cys Arg Leu Ile
 355 360 365
 Tyr Cys Leu Arg Asn Gly Leu Pro Leu Asp Met Asp Val Tyr Asp Ala
 370 375 380
 Ala Glu Trp Ser Cys Ile Thr Glu Leu Ser Glu Gln Ser Val Leu Asn
 385 390 395 400
 Gly Ser Ile Pro Val Glu Ile Pro Asp Phe Thr Arg Gly Ala Trp Lys
 405 410 415
 Lys Cys His Ile Ser Arg Thr Ser Asp Leu Tyr
 420 425

<210> 7190

<211> 171

<212> PRT

<213> B.fragilis

<400> 7190

Lys Lys Met Lys Tyr Lys Tyr Leu Leu Leu Leu Leu Met Leu Pro
 1 5 10 15
 Phe Val Ser Gly Cys Asn Asp Ser Asp Val Asn Gly Ile Phe Thr
 20 25 30
 Gly Lys Val Trp Lys Leu Thr Tyr Ile Thr Lys Lys Asn Glu His Lys
 35 40 45
 Pro Tyr Asp Phe Trp Gly Asp Lys Asp Lys Tyr Glu Gln Ser Ile Lys
 50 55 60
 Asn Tyr Ile Asn Lys Glu Gly Ala Tyr Thr Ile Lys Phe Glu Gly Glu
 65 70 75 80
 Thr Thr Asp Asn Val Ile Ser Gly Lys Phe Ser Gly Thr Leu Leu Ser
 85 90 95
 His Ser Tyr Thr Gly Thr Trp Ser Ala Asn Gly Glu Ser Asn Ala Phe
 100 105 110
 Ser Ala Ser Val Lys Gly Ser Glu Asn Asp Pro Leu Gly Phe Ser Asn
 115 120 125
 Lys Phe Val Glu Gly Leu Asn Arg Ala Thr Ser Tyr Lys Gly Asn Tyr
 130 135 140
 Asp Asn Leu Phe Ile Tyr Tyr Lys Asp Glu Gly Gly Arg Glu Leu Cys
 145 150 155 160
 Leu Val Phe His Val Asp Lys Asp Asn Asn Lys
 165 170

<210> 7191

<211> 147

<212> PRT

<213> B.fragilis

<400> 7191

Gln Arg Met Asp Thr Ala Asn Ser Lys Gln Ser Asp Leu Asp Lys Arg
 1 5 10 15
 Tyr Ile Arg Met Ala Ser Ile Trp Ser Glu Asn Ser Tyr Cys Gln Arg
 20 25 30
 Arg Lys Val Gly Ala Leu Ile Val Lys Asp Lys Met Ile Ile Ser Asp
 35 40 45
 Gly Tyr Asn Gly Thr Pro Ser Gly Phe Glu Asn Val Cys Glu Asp Asp
 50 55 60
 Asn Asn Val Thr Lys Pro Tyr Val Leu His Ala Glu Ala Asn Ala Ile
 65 70 75 80
 Thr Lys Ile Ala Arg Ser Asn Asn Ser Ser Asp Gly Ala Thr Met Tyr
 85 90 95
 Val Thr Ala Ser Pro Cys Ile Glu Cys Ala Lys Leu Ile Ile Gln Ala
 100 105 110
 Gly Ile Lys Arg Val Val Tyr Ser Glu His Tyr Arg Leu Glu Asp Gly
 115 120 125
 Ile Glu Leu Leu Gln Arg Ala Gly Ile Glu Val Val Phe Val Asp Thr
 130 135 140
 Ser Glu Lys
 145

<210> 7192

<211> 675

<212> PRT

<213> B.fragilis

<400> 7192

465 470 475 480
 Tyr Met Glu Ala Cys Tyr Glu Lys Thr Gly Ser Leu Asp Ala Lys Ala
 485 490 495
 Gln Lys Tyr Trp Lys Ala Leu Arg Thr Arg Ala Gly Val Asp Asp Asp
 500 505 510
 Tyr Ala Lys Thr Ile Ala Ala Thr Asp Leu Ser Lys Glu Asn Asp Leu
 515 520 525
 Ala Val Tyr Ser Gly Ser Lys Met Val Asp Val Thr Leu Tyr Asn Ile
 530 535 540
 Arg Arg Glu Arg Arg Cys Glu Phe Ile Gly Glu Gly Met Arg Trp Asp
 545 550 555 560
 Asp Leu Lys Arg Trp Arg Ser Trp Asp Gln Leu Leu Thr Lys Pro Tyr
 565 570 575
 Ile Ile Glu Gly Ile Asn Phe Trp Asp Ala Ala Tyr Lys Asp His Lys
 580 585 590
 Asp Ile Lys Asp Asp Gly Thr Leu Asp Ala Asn Val Ser Pro Lys Ser
 595 600 605
 Asp Ser Lys Tyr Leu Arg Pro Leu Arg Arg Thr Ser Ile Asn Asn Glu
 610 615 620
 Leu Tyr Asp Gly Leu Thr Trp Arg Lys Ala Phe Tyr Leu Asp Pro Ile
 625 630 635 640
 Gly Ile Glu Asp Met Ser Leu Thr Ala Thr Asn Pro Glu Asp Ile Asn
 645 650 655
 Thr Thr Gln Leu Tyr Gln Asn Pro Tyr Trp Pro Met Thr Ala Gly Lys
 660 665 670
 Ala Leu Glu
 675

<210> 7193

<211> 184

<212> PRT

<213> B.fragilis

<400> 7193

Asn Leu Lys Arg Arg Lys Arg Lys Met Glu Arg Lys Lys Gln Leu Arg
 1 5 10 15
 Lys Trp Ile Ala Gln Glu Lys Lys Lys Tyr Ser Asp Ser Thr Leu Lys
 20 25 30
 Ser Leu Ser Glu Lys Val Leu Ile Thr Leu Glu Ala Cys Pro Glu Phe
 35 40 45
 Gln Lys Gly His Thr Ile Leu Leu Tyr His Ser Met Lys Asp Glu Val
 50 55 60
 Gln Thr His Ala Phe Ile Glu Lys Trp Ser Arg Ser Lys Arg Ile Ile
 65 70 75 80
 Leu Pro Val Val Thr Gly Asp Glu Leu Glu Leu Arg Val Tyr Thr Gly
 85 90 95
 Pro Gln Asp Leu Ala Ile Gly Ser Tyr Gly Ile Ala Glu Pro Thr Gly
 100 105 110
 Ala Pro Phe Thr Asp Tyr Gly Thr Ile Asp Leu Ala Val Ile Pro Gly
 115 120 125
 Val Ala Phe Asp Arg Tyr Gly His Arg Leu Gly Arg Gly Lys Gly Tyr
 130 135 140
 Tyr Asp Arg Leu Leu Pro Gln Ile Pro Ala Pro Lys Val Gly Ile Cys
 145 150 155 160
 Phe Pro Phe Gln Leu Ile Glu Glu Val Pro Ala Glu Ala Phe Asp Phe
 165 170 175
 Arg Met Asp Thr Ile Ile Ala Gln
 180

<210> 7194

<211> 494

<212> PRT

<213> B.fragilis

<400> 7194

Lys Asp Met Ser Thr Lys Asn Ser Ser Arg Phe Thr Pro Val Ile Ile
 1 5 10 15
 Ala Ile Ser Val Val Ile Gly Ile Leu Ile Gly Thr Phe Tyr Ala Lys
 20 25 30
 His Phe Ala Gly Asn Arg Leu Gly Ile Ile Asn Gly Ser Ser Asn Lys
 35 40 45
 Leu Asn Ala Leu Leu Arg Ile Val Asp Asp Gln Tyr Val Asp Thr Val
 50 55 60
 Asn Met Ala Asp Leu Val Glu Lys Ala Met Pro Gln Ile Leu Ala Glu
 65 70 75 80
 Leu Asp Pro His Ser Thr Tyr Ile Pro Ala Gln Asn Leu Glu Glu Val
 85 90 95
 Thr Ser Glu Leu Glu Gly Ser Phe Ser Gly Ile Gly Ile Gln Phe Thr
 100 105 110
 Ile Gln Asp Thr Ile His Val Asn Ser Val Ile Gln Gly Gly Pro
 115 120 125
 Ser Glu Lys Val Gly Leu Met Ala Gly Asp Arg Ile Val Met Val Asp
 130 135 140
 Asp Ser Leu Phe Val Gly Lys Lys Val Thr Asn Glu Arg Ala Met Arg
 145 150 155 160
 Thr Leu Lys Gly Pro Lys Gly Thr Gln Val Lys Leu Gly Val Lys Arg
 165 170 175
 Ala Thr Glu Lys Asp Leu Leu Asn Phe Thr Ile Thr Arg Gly Asp Ile
 180 185 190
 Pro Gln Asn Thr Ile Asp Ala Ala Tyr Met Leu Thr Asp Asp Phe Gly
 195 200 205
 Tyr Ile Gln Val Ser Lys Phe Gly Arg Thr Thr His Val Glu Leu Leu
 210 215 220
 Asn Ala Ile Ala Leu Leu Asn His Lys Asn Cys Lys Gly Leu Ile Ile
 225 230 235 240
 Asp Leu Arg Gly Asn Thr Gly Gly Tyr Met Glu Ala Ala Val Arg Met
 245 250 255
 Val Asn Glu Phe Leu Pro Glu Gly Lys Leu Ile Val Tyr Thr Glu Gly
 260 265 270
 Arg Lys Tyr Pro Arg Ala Asp Glu Phe Ala Asn Gly Thr Gly Ser Cys
 275 280 285
 Gln Lys Met Pro Val Ile Val Leu Ile Asp Glu Gly Ser Ala Ser Ala
 290 295 300
 Ser Glu Ile Phe Thr Gly Ala Ile Gln Asp Asn Asp Arg Gly Met Val
 305 310 315 320
 Val Gly Arg Arg Ser Phe Gly Lys Gly Leu Val Gln Gln Pro Ile Asp
 325 330 335
 Phe Ser Asp Gly Ser Ala Ile Arg Leu Thr Ile Ala Arg Tyr Tyr Thr
 340 345 350
 Pro Ser Gly Arg Cys Ile Gln Arg Pro Tyr Gln Asn Gly Lys Asp Arg
 355 360 365
 Asn Tyr Glu Met Asp Trp Leu Thr Arg Tyr Glu His Gly Glu Tyr Phe
 370 375 380
 Ser Lys Asp Ser Ile Lys Leu Asp Glu Asn Leu Arg Tyr Ser Thr Ala
 385 390 395 400
 Leu Gly Arg Pro Val Tyr Gly Gly Gly Gly Ile Met Pro Asp Val Phe
 405 410 415
 Val Pro Gln Asp Thr Thr Gly Val Thr Ser Tyr Leu Thr Glu Val Leu

	420		425		430										
Ser	Lys	Gly	Leu	Thr	Ile	Gln	Phe	Thr	Phe	His	Tyr	Thr	Asp	Asn	Asn
	435						440					445			
Arg	Asp	Lys	Leu	Lys	Lys	Tyr	Glu	Asp	Glu	Glu	Ser	Leu	Leu	Asn	Tyr
	450					455					460				
Met	Arg	Arg	Gln	Gly	Leu	Val	Glu	Gln	Phe	Ile	Arg	Tyr	Ala	Asp	Ser
465					470					475					480
Lys	Gly	Val	Lys	Arg	Arg	Ile	Ile	Leu	Ile	Gln	Lys	Ser	Tyr		
			485					490							

<210> 7195

<211> 609

<212> PRT

<213> B.fragilis

<400> 7195

Asn	Ile	Leu	Gly	Leu	Met	Ser	Phe	Leu	Lys	Phe	Ile	Phe	Thr	His	Cys
1				5					10					15	
Leu	Ile	Leu	Lys	Ser	Phe	Ile	Met	Arg	Ala	Leu	Ile	Tyr	Val	Val	Cys
			20					25					30		
Leu	Ile	Gly	Ala	Met	Cys	Gly	Trp	Ser	Cys	Ser	Asp	His	Ile	Ala	Asp
		35					40					45			
Ser	Ser	Asp	Leu	Ser	Val	Gln	Thr	Arg	Thr	Ile	Val	Ser	Pro	Glu	Gly
	50					55					60				
Val	Ser	Thr	Ser	Asn	Pro	Asp	Leu	Ile	Ser	Asp	Trp	Glu	His	Gln	Ser
65					70					75					80
Leu	Leu	Thr	Leu	Ser	Thr	Gly	Glu	Arg	Ile	Asn	Thr	Pro	Trp	Thr	Pro
				85					90					95	
Gly	Ala	Ser	His	Ser	Met	Ser	Glu	Glu	Thr	Val	Ser	Asp	Ile	Lys	Lys
			100					105					110		
Glu	Asp	Gly	Trp	Thr	Met	Leu	Phe	His	Thr	Phe	Lys	Ala	Leu	Asn	Glu
		115					120					125			
Ser	Pro	Asn	Ser	Asn	Tyr	Leu	Cys	Phe	Tyr	Asn	Glu	Leu	Thr	Gly	Val
	130					135					140				
Ile	Lys	Val	Phe	Tyr	Tyr	Ile	Lys	Asn	Ala	Gln	Gly	Asn	Asn	Gly	Phe
145					150					155					160
Gln	Trp	Arg	Ile	Ser	Thr	Ala	Asn	Gly	Val	Gly	Ser	Ser	Leu	Leu	Ala
				165					170					175	
Leu	Asn	Ser	Tyr	Ile	Ser	Pro	Leu	Asp	Asn	Ser	Ser	Asp	Lys	Pro	Asn
			180					185					190		
Cys	Met	Asn	Leu	Ser	Thr	Phe	Ala	Gln	Thr	Pro	Ile	Asn	Gly	Leu	Thr
	195						200						205		
Pro	Gly	Trp	Asn	Gly	Phe	Glu	Phe	Glu	Val	Pro	Tyr	Thr	Thr	Asp	Tyr
	210					215					220				
Arg	Asn	Ile	Ser	Leu	Ser	Ile	Asn	Ser	Tyr	Asn	Gln	Val	Ile	Thr	Asp
225					230					235					240
Phe	Asn	Phe	Ser	Gly	Thr	Thr	Glu	Leu	Lys	Thr	Glu	Gly	Thr	Ile	Thr
				245					250					255	
Lys	Asn	Val	Ala	Asn	Gly	Gly	Gly	Thr	Thr	Lys	Thr	Ala	Ala	Thr	Leu
			260					265						270	
Ala	Ser	Ser	Gly	Ala	Lys	Lys	Tyr	Met	Asp	Glu	Leu	Lys	Lys	Lys	Ala
		275					280					285			
Asn	Gly	Gln	Pro	Ser	Asn	Ile	Ala	Gly	Asp	Val	Lys	Leu	Gly	Lys	Lys
	290					295					300				
Ile	Val	Asp	Ala	Leu	Thr	Ser	Gly	Asn	Tyr	Phe	Ser	Ala	Ile	Ala	Lys
305					310					315					320
Gly	Leu	Lys	Phe	Ile	Phe	Gly	Ser	Thr	Thr	Thr	Arg	Pro	Glu	Val	Ser
				325					330					335	
Lys	Val	Ser	Leu	Thr	Thr	Thr	Gly	Val	Val	Thr	Met	Gly	Gly	Thr	Ser

340					345					350					
Gln	Ser	Gly	Ser	His	Asp	Asn	Val	Glu	Pro	Leu	Phe	Ser	Ile	Asn	Leu
355					360					365					
Tyr	Asp	Leu	Met	Asn	Gly	Asn	Leu	Ala	Ala	Leu	Lys	Lys	Ser	Pro	Ser
370					375					380					
Phe	Asn	Ser	Leu	Val	Leu	Pro	Val	Asp	Val	Thr	Thr	Arg	Ser	Gly	Gly
385					390					395					
Glu	Arg	Tyr	Ala	Gly	Val	Trp	Thr	Leu	Lys	Glu	Ser	Pro	Val	Ile	Arg
405					410					415					
Met	Thr	Arg	Tyr	Gly	Arg	Val	Leu	Asn	Tyr	Asn	Ile	Ser	Gly	Gly	Val
420					425					430					
Phe	Thr	Val	Ala	Ser	Val	Leu	Leu	Pro	Tyr	Leu	Asp	Ser	Asn	Val	Asn
435					440					445					
Lys	Lys	Ala	Ser	Val	Ile	Leu	Asn	Pro	Tyr	Leu	Ser	Gln	Tyr	Val	Thr
450					455					460					
Ser	Met	Gln	Thr	Met	Val	Asp	Val	Val	Ser	Cys	Ala	Lys	Leu	Asn	Gly
465					470					475					
Glu	Lys	Tyr	Phe	Asn	Gly	Tyr	Ala	Ile	Ser	Asp	Phe	Met	Ser	Glu	Asp
485					490					495					
Pro	Ile	Tyr	Glu	Asp	Lys	Asp	Leu	Ala	Ile	Arg	Lys	Ser	Ala	Phe	Ser
500					505					510					
Gly	Ser	Gly	Gly	Glu	Ile	Cys	Asn	Gln	Ser	Ile	Ser	Ile	Ser	Asp	Tyr
515					520					525					
Asn	Ile	Gly	Asp	Gly	Gly	Asn	Gln	Asn	Met	Tyr	Phe	Phe	Asp	Trp	Gly
530					535					540					
Thr	Asn	Ile	Lys	Gly	Asp	Glu	Val	Ala	Val	Val	Thr	Val	Asn	Ile	Ala
545					550					555					
Tyr	Asn	Tyr	Lys	Gly	Lys	Val	His	Asn	Val	Ser	Ile	Ser	Arg	Asn	Tyr
565					570					575					
Lys	Val	Gln	Tyr	Val	His	Asp	Pro	Ala	Thr	Asp	Val	Lys	Ile	Leu	Gly
580					585					590					
Thr	Ala	Gly	Thr	Lys	Lys	Val	Val	Ile	Val	Asn	Asn	Tyr	Pro	Gln	Phe
595					600					605					
Glu															

<210> 7196
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 7196
 Lys Lys Met Gly Lys Ser Thr Phe Leu Gln Asp Phe Lys Ala Phe Ala
 1 5 10 15
 Met Lys Gly Asn Val Val Asp Met Ala Val Gly Val Ile Ile Gly Gly
 20 25 30
 Ala Phe Gly Lys Ile Val Ser Ser Val Val Ala Asp Ile Ile Met Pro
 35 40 45
 Pro Leu Gly Leu Leu Ile Gly Gly Val Asn Phe Thr Asp Leu Lys Trp
 50 55 60
 Val Met Lys Ala Ala Glu Tyr Gly Ala Asp Gly Lys Glu Thr Ala Ala
 65 70 75 80
 Ala Val Thr Leu Asn Tyr Gly Asn Phe Leu Gln Ala Thr Phe Asp Phe
 85 90 95
 Leu Ile Ile Ala Phe Ser Ile Phe Leu Phe Ile Lys Leu Ile Thr Lys
 100 105 110
 Leu Thr Gln Lys Lys Ala Glu Ala Pro Ala Ala Pro Pro Ala Pro Pro
 115 120 125
 Ala Pro Thr Lys Glu Glu Ile Leu Leu Thr Glu Ile Arg Asp Leu Leu

130 135 140
 Lys Glu Lys Gln
 145

<210> 7197
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 7197
 Lys Gln Gly Val Pro Ser Glu Val Gly Asp Val Pro Val Arg Ala His
 1 5 10 15
 Val Phe Ala Lys Glu Phe Ser Cys Val Val Arg Met Leu Gly Leu Tyr
 20 25 30
 Ile Lys Lys Glu Asn Leu Ile Ser Gln Ile Leu Phe Arg Ala Glu Asp
 35 40 45
 Gly Ala Gln Thr Arg Asp Pro Gln Leu Gly Arg Leu Met Leu Tyr Gln
 50 55 60
 Leu Ser Tyr Phe Arg Asn Phe Cys Gly Gln Arg Trp Ile Arg Thr Thr
 65 70 75 80
 Glu Val Glu Arg Gln Gln Ile Tyr Ser Leu Pro His Leu Ala Thr Leu
 85 90 95
 Val Phe Ala Leu Leu Phe Ala Phe Glu Ser Leu Cys Phe Leu Leu Ser
 100 105 110
 Arg Phe Val Ser Gln Leu Arg Cys Lys Asp Thr Thr Ile Tyr Leu Asn
 115 120 125
 Ser Lys Gln Asn Arg Ser Phe Leu Leu Gln
 130 135

<210> 7198
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7198
 Ser His Leu Phe Arg Phe Thr Ile Glu Asn Leu Val Val Glu Ile Ala
 1 5 10 15
 Asn Ile Ser Phe Ile Thr Val Tyr Val Leu Trp Gly Glu Lys Leu Glu
 20 25 30
 Leu Ser Phe Asp Ile Ser Leu Glu Thr Lys Ile Leu Trp Pro Phe Leu
 35 40 45
 Leu Pro Ser Gly Asn Ala Cys Phe Asn Ser Met Leu Lys Gln Val Phe
 50 55 60
 Cys Ile
 65

<210> 7199
 <211> 83
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (20)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7199
 His Phe Arg Ala Gly Gln Ile Leu Arg Ile Phe Pro Lys Lys Val Thr
 1 5 10 15

Gly	Lys	Val	Xaa	Pro	Thr	Leu	Arg	Pro	Cys	Ser	Ser	Asp	Thr	Ile	Leu
			20					25					30		
Arg	Ala	Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp
		35					40					45			
Gln	Gly	Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu
	50					55					60				
Val	Ile	Asn	Ala	Leu	Gly	Phe	Thr	Gly	Gln	Leu	Lys	Glu	Ile	Trp	Glu
65					70					75					80
Ile	Arg	Cys													

<210> 7200

<211> 696

<212> PRT

<213> B.fragilis

<400> 7200

Lys	Ala	Leu	Leu	Leu	Leu	Tyr	Leu	Lys	Ser	Asn	Gln	Lys	Pro	Met	Ile
1				5					10					15	
Lys	Lys	Ile	Leu	Ala	Ala	Leu	Leu	Leu	Phe	Pro	Thr	Phe	Ala	Tyr	Ala
			20					25					30		
Gln	Ile	Asn	Thr	Asp	Arg	Val	Met	Met	Ile	Ala	Arg	Asn	Ala	Leu	Tyr
		35					40					45			
Phe	Glu	Asp	Tyr	Val	Leu	Ser	Ile	Gln	Tyr	Phe	Asn	Gln	Val	Ile	Asn
	50					55					60				
Ala	Lys	Pro	Tyr	Leu	Tyr	Glu	Pro	Tyr	Phe	Phe	Arg	Gly	Leu	Ala	Lys
65					70					75					80
Ile	Asn	Leu	Asp	Asp	Tyr	Gln	Gly	Ala	Glu	Ala	Asp	Cys	Asp	Ala	Ala
				85					90					95	
Ile	Asp	Arg	Asn	Pro	Phe	Val	Val	Gly	Ala	Tyr	Gln	Ile	Arg	Gly	Leu
			100					105					110		
Ala	Arg	Ile	Lys	Gln	Asn	Lys	Tyr	Asp	Gly	Ala	Ile	Glu	Asp	Tyr	Lys
		115					120					125			
Lys	Ala	Leu	His	Phe	Asp	Pro	Glu	Asn	Ile	Thr	Leu	Trp	His	Asn	Leu
	130					135					140				
Thr	Leu	Cys	His	Ile	Gln	Lys	Glu	Asp	Tyr	Lys	Ala	Ala	Glu	Asp	Asp
145					150					155					160
Leu	Gly	Lys	Leu	Leu	Ala	Val	Ala	Pro	Lys	Tyr	Thr	Arg	Ala	Tyr	Leu
				165					170						175
Met	Arg	Gly	Glu	Val	Ala	Leu	Lys	Gln	Gln	Asp	Thr	Leu	Arg	Ala	Leu
			180					185					190		
Asn	Asp	Phe	Asn	Thr	Ala	Ile	Glu	Met	Asp	Lys	Tyr	Asp	Pro	Asp	Ala
		195					200					205			
Trp	Ala	Ser	Arg	Ala	Ile	Val	Arg	Leu	Gln	Gln	Gly	Lys	Tyr	Ala	Glu
	210					215					220				
Ala	Glu	Ser	Asp	Leu	Asn	His	Ala	Thr	His	Leu	Asn	Ala	Lys	Asn	Ala
225					230					235					240
Gly	Asn	Tyr	Ile	Asn	Arg	Ala	Leu	Ala	Arg	Phe	His	Gln	Asn	Asn	Leu
				245					250					255	
Arg	Gly	Ala	Met	Ser	Asp	Tyr	Asp	Leu	Ala	Leu	Asp	Ile	Asp	Pro	Asn
			260					265					270		
Asn	Phe	Ile	Gly	His	Tyr	Asn	Arg	Gly	Leu	Leu	Arg	Ala	Gln	Val	Gly
		275					280					285			
Asp	Asp	Asn	Arg	Ala	Ile	Glu	Asp	Phe	Asp	Phe	Val	Leu	Gln	Ile	Glu
	290					295					300				
Pro	Asp	Asn	Met	Met	Ala	Thr	Phe	Asn	Arg	Gly	Leu	Leu	Arg	Ala	Gln
305					310					315					320
Thr	Gly	Asp	Tyr	Arg	Gly	Ala	Ile	Lys	Asp	Tyr	Thr	Lys	Val	Ile	Asp
				325					330					335	

Val Tyr Pro Asn Phe Leu Ala Gly Tyr Tyr Gln Arg Ala Glu Ala Arg
 340 345 350
 Arg Lys Ile Gly Asp Arg Lys Gly Ala Glu Met Asp Glu Phe Lys Val
 355 360 365
 Met Lys Ala Gln Leu Asp Lys Gln Asn Gly Val Ser Asn Ala Asp Lys
 370 375 380
 Ser Val Ala Asp Asn Lys Asn Gly Asn Asn Lys Asp Glu Asn Lys Thr
 385 390 395 400
 Arg Lys Lys Ser Asp Lys Asp Met Asn Asn Tyr Arg Lys Ile Val Ile
 405 410 415
 Ala Asp Asn Ser Glu Val Glu Gln Lys Tyr Lys Ser Asp Ile Arg Gly
 420 425 430
 Arg Val Gln Asp Arg Asn Val Asn Ile Lys Met Glu Pro Met Tyr Ala
 435 440 445
 Leu Thr Tyr Tyr Glu Lys Met Ser Asp Val Lys Arg Ala Val His Tyr
 450 455 460
 Tyr Lys Tyr Ile Asp Asp Leu Asn Arg Ala Gly Val Leu Pro Lys Arg
 465 470 475 480
 Leu Tyr Ile Thr Asn Met Glu Ser Pro Leu Thr Glu Glu Gln Val Lys
 485 490 495
 Phe His Phe Ala Leu Ile Asp Thr His Thr Ser Ala Ile Val Glu Asn
 500 505 510
 Pro Lys Asp Ala Arg Thr Arg Phe Ser Arg Ala Leu Asp Phe Tyr Leu
 515 520 525
 Val Gln Asp Phe Ala Ser Ser Ile Glu Asp Leu Thr Gln Ala Ile Leu
 530 535 540
 Leu Asp Asp Ser Phe Phe Pro Ala Tyr Phe Met Arg Ser Leu Val Arg
 545 550 555 560
 Cys Lys Gln Leu Glu Tyr Gln Lys Ala Glu Glu Ala Asn Ala Ala Ser
 565 570 575
 Ala Thr Pro Ala Thr Leu Pro Gly Ile Ser Ala Pro Gln Lys Ser Glu
 580 585 590
 Val Ser Ala Leu Asp Tyr Asp Ile Val Lys Ser Asp Leu Asp His Val
 595 600 605
 Ile Thr Leu Ala Pro Asp Phe Val Tyr Ala Tyr Tyr Asn Arg Ala Asn
 610 615 620
 Val Leu Ala Met Leu Lys Asp Tyr Arg Ala Ala Ile Ala Asp Tyr Asp
 625 630 635 640
 Lys Ala Ile Glu Leu Asn Lys Glu Phe Ala Glu Ala Tyr Phe Asn Arg
 645 650 655
 Gly Leu Thr His Ile Phe Leu Gly Asn Asn Lys Asn Gly Ile Ala Asp
 660 665 670
 Leu Ser Lys Ala Gly Glu Leu Gly Ile Val Ser Ala Tyr Asn Ile Leu
 675 680 685
 Lys Arg Phe Thr Glu Val Pro Glu
 690 695

<210> 7201

<211> 649

<212> PRT

<213> B.fragilis

<400> 7201

His Asn Ile Met Ile Lys Ile Thr Phe Pro Asp Gly Ser Val Arg Glu
 1 5 10 15
 Tyr Asn Glu Gly Val Asn Gly Leu Gln Ile Ala Glu Ser Ile Ser Ser
 20 25 30
 Arg Leu Ala Gln Asp Val Leu Ala Cys Gly Val Asn Gly Glu Ile Tyr
 35 40 45

Asp Leu Gly Arg Pro Ile Asn Glu Asp Ala Ser Val Val Leu Tyr Lys
 50 55 60
 Trp Glu Asp Glu Gln Gly Lys His Ala Phe Trp His Thr Ser Ala His
 65 70 75 80
 Leu Leu Ala Glu Ala Leu Gln Glu Leu Tyr Pro Gly Ile Gln Phe Gly
 85 90 95
 Ile Gly Pro Ala Ile Glu Asn Gly Phe Tyr Tyr Asp Val Asp Pro Gly
 100 105 110
 Glu Ala Val Ile Lys Glu Ala Asp Leu Pro Ala Ile Glu Ala Lys Met
 115 120 125
 Ala Glu Leu Val Ala Lys Lys Glu Ala Val Val Arg Arg Asp Ile Ala
 130 135 140
 Lys Gly Asp Ala Leu Lys Met Phe Gly Asp Arg Gly Glu Thr Tyr Lys
 145 150 155 160
 Cys Glu Leu Ile Ser Glu Leu Glu Asp Gly His Ile Thr Thr Tyr Thr
 165 170 175
 Gln Gly Asp Phe Thr Asp Leu Cys Arg Gly Pro His Leu Met Thr Thr
 180 185 190
 Ala Pro Ile Lys Ala Ile Lys Leu Thr Ser Val Ala Gly Ala Tyr Trp
 195 200 205
 Arg Gly His Glu Asp Arg Lys Met Leu Thr Arg Ile Tyr Gly Ile Thr
 210 215 220
 Phe Pro Lys Lys Lys Met Leu Asp Glu Tyr Leu Ala Leu Met Glu Glu
 225 230 235 240
 Ala Lys Lys Arg Asp His Arg Lys Ile Gly Lys Glu Met Gln Leu Phe
 245 250 255
 Met Phe Ser Asp Thr Val Gly Lys Gly Leu Pro Met Trp Leu Pro Lys
 260 265 270
 Gly Thr Ala Leu Arg Leu Arg Leu Gln Asp Phe Leu Arg Arg Ile Gln
 275 280 285
 Thr Arg Tyr Asp Tyr Gln Glu Val Ile Thr Pro Pro Ile Gly Asn Lys
 290 295 300
 Leu Leu Tyr Val Thr Ser Gly His Tyr Ala Lys Tyr Gly Lys Asp Ala
 305 310 315 320
 Phe Gln Pro Ile His Thr Pro Glu Glu Gly Glu Glu Tyr Phe Leu Lys
 325 330 335
 Pro Met Asn Cys Pro His His Cys Glu Ile Tyr Lys Asn Phe Pro Arg
 340 345 350
 Ser Tyr Lys Asp Leu Pro Leu Arg Ile Ala Glu Phe Gly Thr Val Cys
 355 360 365
 Arg Tyr Glu Gln Ser Gly Glu Leu His Gly Leu Thr Arg Val Arg Ser
 370 375 380
 Phe Thr Gln Asp Asp Ala His Ile Phe Cys Arg Pro Asp Gln Val Lys
 385 390 395 400
 Gly Glu Phe Leu Arg Val Met Asp Ile Ile Ser Ile Val Phe Arg Ser
 405 410 415
 Met Asp Phe Asp Asn Phe Glu Ala Gln Ile Ser Leu Arg Asp Lys Val
 420 425 430
 Asn Arg Glu Lys Tyr Ile Gly Ser Asp Glu Asn Trp Glu Lys Ala Glu
 435 440 445
 Gln Ala Ile Ile Glu Ala Cys Glu Glu Lys Gly Leu Lys Ala Lys Ile
 450 455 460
 Glu Tyr Gly Glu Ala Ala Phe Tyr Gly Pro Lys Leu Asp Phe Met Val
 465 470 475 480
 Lys Asp Ala Ile Gly Arg Arg Trp Gln Leu Gly Thr Ile Gln Val Asp
 485 490 495
 Tyr Asn Leu Pro Glu Arg Phe Glu Leu Glu Tyr Met Gly Ser Asp Asn
 500 505 510
 Gln Lys His Arg Pro Val Met Ile His Arg Ala Pro Phe Gly Ser Met

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<210> 7202
<211> 421
<212> PRT
<213> B.fragilis
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<400> 7202															
Lys 1	Arg	Leu	Ile	Ala 5	Asn	Tyr	Thr	Phe	Ile 10	His	Leu	Ile	Ile	Ile 15	Asn
Met	Arg	Gln	Lys 20	Ser	Leu	Leu	Leu	Leu 25	Leu	Pro	Phe	Leu	Leu 30	Leu	Ser
Cys	Gly 35	Gly	Lys	Lys	Asn	Ser	Gly 40	Gln	Leu	Ser	Asp	Thr 45	Ala	Val	Gln
Ile	Val 50	Lys	Pro	Glu	Phe	Pro 55	Gln	Ile	Val	Pro	Phe 60	Glu	Thr	Gly	Ile
Glu 65	Thr	Glu	Gln	Glu	Ile 70	Leu	Leu	Ser	Glu	Ile 75	Ala	Asp	Ser	Ile 80	Arg
Tyr	Ile	Pro	Leu	Glu 85	Thr	Asn	Asn	Lys 90	Cys	Leu	Ile	Arg	Gly 95	Leu	Lys
Gly	Ser	Asn 100	Ile	Ile	Arg	Thr	Lys 105	Glu	Tyr	Phe	Phe 110	Leu	Pro	Trp	Ile
Asp	Lys 115	Leu	Phe	Gln	Tyr	Thr	Lys 120	Asp	Gly	Lys	Phe 125	Ile	Arg	Thr	Leu
Gly 130	Arg	Lys	Gly	Gly	Gly 135	Pro	Gly	Glu	Phe	Asn	Trp 140	Ile	Met	Gln	Ile
Asp 145	Val	Asp	Glu	Lys 150	Lys	Gly	Leu	Val	Tyr	Met 155	Leu	Thr	Thr	Thr	Gly
Lys	Ile	Asn	Ile	Tyr 165	Ser	Met	Glu	Thr	Gly 170	Lys	Phe 175	Ile	Arg	Ala	Met
Lys	Val	Pro	Asn 180	Ile	Glu	Val	Ser	Glu 185	Phe	Ala	Met 190	Leu	Arg	Val	Gln
Asp	Thr 195	Ile	Ala	Ala	Thr	Phe	Met 200	Arg	Asn	Asn	Asn 205	Gly	Lys	Arg	Lys
Glu	Arg 210	Ile	Tyr	Leu	Ser	Asn 215	Leu	Lys	Gly	Asp 220	Thr	Leu	Lys	Ile	Phe
Asn 225	Arg	Trp	Asp	Leu 230	Phe	Asp	Leu	Asn	Ser	Lys 235	Tyr	Arg	Trp	Met	Ile
Ser	Ser	Asp	Ile	Asp 245	Arg	Tyr	Met	Phe 250	His	Tyr	Lys 255	Ser	His	Thr	Cys
Tyr	Lys	Glu	Tyr 260	Tyr	Asn	Asp	Thr	Leu 265	Phe	Thr	Ile 270	Thr	Gln	Glu	Thr
Leu	Glu	Pro	Arg	Tyr	Ile	Phe	Gln	Met	Gly	Lys	Tyr	Ser	Leu	Pro	Ile

275 280 285
 Glu Cys Arg Phe Glu Tyr Leu Asn Gly Asp Gly Lys Arg Phe Gln Glu
 290 295 300
 Val Ala Ala Pro Tyr Ile Gln Tyr Asn Thr Ile Glu Thr Asp Ser Tyr
 305 310 315 320
 Ile Phe Met Pro Tyr Ser Asn Trp Ala Gly Glu Lys Ala Gln Glu Lys
 325 330 335
 Gln Met Ala Ile Tyr Asp Lys Lys Ala Lys Asn Cys Phe Lys Val Ser
 340 345 350
 Thr Gly His Ile Lys Asn Asp Leu Thr Pro Gly Leu Pro Leu Arg Pro
 355 360 365
 Ile Thr Ala Leu Asp Ser His Thr Leu Leu Tyr Val Trp Glu Ala Pro
 370 375 380
 Glu Leu Leu Glu Lys Ala Glu Lys Thr Pro Ser Ile Leu Gln Ile Glu
 385 390 395 400
 Pro Leu Lys Gly Leu Lys Glu Asp Asp Asn Pro Val Met Met Ile Val
 405 410 415
 Tyr Leu Lys Gln Pro
 420

<210> 7203

<211> 116

<212> PRT

<213> B.fragilis

<400> 7203

Leu Asn Leu Val Asp Asn Lys Lys Gln Thr Gly Ser Lys Arg Tyr Leu
 1 5 10 15
 Met Lys Asn Asp Ser Met Lys Ser Gln Tyr Arg Ile Asn Glu Gln Ile
 20 25 30
 Arg Ala Lys Glu Val Arg Ile Val Gly Asp Asp Val Glu Pro Lys Val
 35 40 45
 Tyr Pro Ile Phe Gln Ala Leu Lys Leu Ala Glu Glu Lys Glu Leu Asp
 50 55 60
 Leu Val Glu Ile Ser Pro Asn Ala Gln Pro Pro Val Cys Arg Ile Ile
 65 70 75 80
 Asp Tyr Ser Lys Phe Leu Tyr Gln Leu Lys Lys Arg Gln Lys Glu Gln
 85 90 95
 Lys Ala Lys Gln Val Lys Val Asn Val Lys Glu Ile Arg Phe Gly Pro
 100 105 110
 Gln Thr Asp Asp
 115

<210> 7204

<211> 74

<212> PRT

<213> B.fragilis

<400> 7204

Tyr Ser Lys Ser Lys Cys Val Arg Phe Met Lys Ile Ala Glu Ile Lys
 1 5 10 15
 Glu Met Ser Thr Asn Asp Leu Val Glu Arg Val Glu Ala Glu Val Val
 20 25 30
 Asn Tyr Asn Gln Met Val Ile Asn His Ser Ile Ser Pro Leu Glu Asn
 35 40 45
 Pro Ala Gln Ile Lys Gln Leu Arg Arg Thr Ile Ala Arg Met Arg Thr
 50 55 60
 Glu Leu Arg Gln Arg Glu Leu Asn Asn Lys
 65 70

<210> 7205
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7205
 Glu Thr Met Leu Gln Pro Lys Lys Thr Lys Phe Arg Arg Gln Gln Lys
 1 5 10 15
 Gly Arg Ala Lys Gly Asn Ala Gln Arg Gly Asn Gln Leu Ala Phe Gly
 20 25 30
 Ser Phe Gly Ile Lys Ala Leu Glu Thr Lys Trp Ile Thr Gly Arg Gln
 35 40 45
 Ile Glu Ala Ala Arg Ile Ala Val Thr Arg Tyr Met Gln Arg Gln Gly
 50 55 60
 Gln Ile Trp Ile Arg Ile Phe Pro Asp Lys Pro Ile Thr Arg Lys Pro
 65 70 75 80
 Ala Asp Val Arg Met Gly Lys Gly Lys Gly Ser Pro Glu Gly Phe Val
 85 90 95
 Ala Pro Val Thr Pro Gly Arg Ile Ile Ile Glu Ala Glu Gly Val Ser
 100 105 110
 Tyr Glu Ile Ala Lys Glu Ala Leu Arg Leu Ala Ala Gln Lys Leu Pro
 115 120 125
 Ile Thr Thr Lys Phe Val Val Arg Arg Asp Tyr Asp Ile Gln Asn Gln
 130 135 140
 Asn Ala
 145

<210> 7206
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 7206
 Met Gly Gln Lys Val Asn Pro Ile Ser Asn Arg Leu Gly Ile Ile Arg
 1 5 10 15
 Gly Trp Asp Ser Asn Trp Tyr Gly Gly Asn Asp Tyr Gly Asp Ser Leu
 20 25 30
 Leu Glu Asp Ser Lys Ile Arg Lys Tyr Leu Asn Ala Arg Leu Ala Lys
 35 40 45
 Ala Ser Val Ser Arg Ile Val Ile Glu Arg Thr Leu Lys Leu Val Thr
 50 55 60
 Ile Thr Val Cys Thr Ala Arg Pro Gly Ile Ile Ile Gly Lys Gly Gly
 65 70 75 80
 Gln Glu Val Asp Lys Leu Lys Glu Glu Leu Lys Lys Val Thr Asp Lys
 85 90 95
 Asp Ile Gln Ile Asn Ile Phe Glu Val Lys Arg Pro Glu Leu Asp Ala
 100 105 110
 Val Ile Val Ala Asn Asn Ile Ala Arg Gln Val Glu Gly Lys Ile Ala
 115 120 125
 Tyr Arg Arg Ala Ile Lys Met Ala Ile Ala Asn Thr Met Arg Met Gly
 130 135 140
 Ala Glu Gly Ile Lys Ile Gln Ile Ser Gly Arg Leu Asn Gly Ala Glu
 145 150 155 160
 Met Ala Arg Ser Glu Met Tyr Lys Glu Gly Arg Thr Pro Leu His Thr
 165 170 175
 Phe Arg Ala Asp Ile Asp Tyr Cys His Ala Glu Ala Leu Thr Lys Val
 180 185 190
 Gly Leu Leu Gly Ile Lys Val Trp Ile Cys Arg Gly Glu Val Phe Gly

	195		200		205										
Lys	Arg	Glu	Leu	Ala	Pro	Asn	Phe	Thr	Gln	Ser	Lys	Glu	Ser	Gly	Arg
	210					215					220				
Gly	Asn	Asn	Gly	Gly	Asn	Asn	Gly	Gly	Gly	Lys	Asn	Phe	Lys	Arg	Lys
225					230					235					240
Lys	Asn	Asn	Arg												

<210> 7207
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 7207

Lys	Ile	Met	Glu	Val	Asn	Val	Tyr	Asn	Ile	Lys	Gly	Glu	Asp	Thr	Gly
1				5				10						15	
Arg	Lys	Val	Thr	Leu	Asn	Glu	Ser	Ile	Phe	Gly	Ile	Glu	Pro	Asn	Asp
			20					25					30		
His	Ala	Ile	Tyr	Leu	Asp	Val	Lys	Gln	Phe	Met	Ala	Asn	Gln	Arg	Gln
	35						40					45			
Gly	Thr	His	Lys	Ser	Lys	Glu	Arg	Ser	Glu	Ile	Ser	Gly	Ser	Thr	Arg
50						55					60				
Lys	Ile	Gly	Arg	Gln	Lys	Gly	Gly	Gly	Gly	Ala	Arg	Arg	Gly	Asp	Met
65				70						75					80
Asn	Ser	Pro	Val	Leu	Val	Gly	Gly	Gly	Arg	Val	Phe	Gly	Pro	Lys	Pro
			85					90						95	
Arg	Asp	Tyr	Tyr	Phe	Lys	Leu	Asn	Lys	Lys	Val	Lys	Thr	Leu	Ala	Arg
			100					105					110		
Lys	Ser	Ala	Leu	Ser	Tyr	Lys	Ala	Gln	Asp	Asn	Ala	Ile	Val	Val	Val
		115					120					125			
Glu	Asp	Phe	Asn	Phe	Glu	Ala	Pro	Lys	Thr	Lys	Val	Phe	Val	Glu	Met
130						135					140				
Thr	Lys	Asn	Leu	Lys	Val	Ser	Asp	Lys	Lys	Leu	Leu	Val	Val	Leu	Pro
145					150					155					160
Glu	Ala	Asn	Lys	Asn	Val	Tyr	Leu	Ser	Ala	Arg	Asn	Ile	Glu	Gly	Ala
			165						170					175	
Asn	Val	Gln	Thr	Ile	Ser	Gly	Leu	Asn	Thr	Tyr	Arg	Val	Leu	Asn	Ala
		180						185					190		
Gly	Val	Val	Val	Leu	Thr	Glu	Ser	Leu	Lys	Ala	Ile	Asp	Asn	Ile	
	195					200					205				
Leu	Ile														
210															

<210> 7208
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 7208

Thr	Met	Ser	Arg	Ser	Leu	Lys	Lys	Gly	Pro	Tyr	Ile	Asn	Val	Lys	Leu
1				5					10					15	
Glu	Lys	Lys	Val	Leu	Ala	Met	Asn	Glu	Ser	Gly	Lys	Lys	Val	Val	Val
			20					25					30		
Lys	Thr	Trp	Ser	Arg	Ala	Ser	Met	Ile	Ser	Pro	Asp	Phe	Val	Gly	His
		35					40					45			
Thr	Val	Ala	Val	His	Asn	Gly	Asn	Lys	Phe	Ile	Pro	Val	Tyr	Val	Thr
50						55					60				
Glu	Asn	Met	Val	Gly	His	Lys	Leu	Gly	Glu	Phe	Ala	Pro	Thr	Arg	Thr
65					70					75					80

Phe Arg Gly His Ala Gly Asn Lys Lys Lys
85 90

<210> 7209

<211> 279

<212> PRT

<213> B.fragilis

<400> 7209

Gln Tyr Leu Ile Lys Met Ala Val Arg Lys Phe Lys Pro Thr Thr Pro
1 5 10 15
Gly Gln Arg His Lys Ile Ile Gly Thr Phe Glu Glu Ile Thr Ala Ser
20 25 30
Val Pro Glu Lys Ser Leu Val Tyr Gly Lys Lys Ser Ser Gly Gly Arg
35 40 45
Asn Asn Glu Gly Lys Met Thr Met Arg Tyr Leu Gly Gly Gly His Arg
50 55 60
Lys Val Ile Arg Ile Val Asp Phe Lys Arg Asn Lys Asp Gly Val Pro
65 70 75 80
Ala Val Val Lys Thr Ile Glu Tyr Asp Pro Asn Arg Ser Ala Arg Ile
85 90 95
Ala Leu Leu Phe Tyr Ala Asp Gly Glu Lys Arg Tyr Ile Ile Ala Pro
100 105 110
Asn Gly Leu Gln Val Gly Ala Thr Leu Met Ser Gly Glu Asn Ala Ala
115 120 125
Pro Glu Ile Gly Asn Ala Leu Pro Leu Gln Asn Ile Pro Val Gly Thr
130 135 140
Val Ile His Asn Ile Glu Leu Arg Pro Gly Gln Gly Ala Ala Leu Val
145 150 155 160
Arg Ser Ala Gly Asn Phe Ala Gln Leu Thr Ser Arg Glu Gly Lys Tyr
165 170 175
Cys Val Ile Lys Leu Pro Ser Gly Glu Val Arg Gln Ile Leu Ser Thr
180 185 190
Cys Lys Ala Thr Ile Gly Ser Val Gly Asn Ser Asp His Gly Leu Glu
195 200 205
Ser Ser Gly Lys Ala Gly Arg Ser Arg Trp Gln Gly Arg Arg Pro Arg
210 215 220
Asn Arg Gly Val Val Met Asn Pro Val Asp His Pro Met Gly Gly Gly
225 230 235 240
Glu Gly Arg Ala Ser Gly Gly His Pro Arg Ser Arg Lys Gly Leu Tyr
245 250 255
Ala Lys Gly Leu Lys Thr Arg Ala Pro Lys Lys Gln Ser Ser Lys Tyr
260 265 270
Ile Ile Glu Arg Arg Lys Lys
275

<210> 7210

<211> 97

<212> PRT

<213> B.fragilis

<400> 7210

Ile Met Gly Ile Ile Ile Lys Pro Leu Val Thr Glu Lys Met Thr Ala
1 5 10 15
Ile Thr Asp Lys Leu Asn Arg Phe Gly Phe Ile Val Arg Pro Glu Ala
20 25 30
Asn Lys Leu Glu Ile Lys Ser Glu Val Glu Ala Leu Tyr Asn Val Thr
35 40 45
Val Val Asp Val Asn Thr Val Lys Tyr Ala Gly Lys Asn Lys Ser Arg

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<210> 7211
<211> 64
<212> PRT
<213> B.fragilis
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<210> 7212
<211> 89
<212> PRT
<213> B.fragilis
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<210> 7213
<211> 143
<212> PRT
<213> B.fragilis
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<400> 7213															
Asn	Asn	Lys	Val	Ile	Asn	Ile	Met	Gly	Ala	Arg	Lys	Lys	Ile	Ser	Ala
1				5					10					15	
Glu	Lys	Arg	Lys	Glu	Ala	Leu	Lys	Thr	Met	Tyr	Phe	Ala	Lys	Leu	Gln
			20					25					30		
Asn	Val	Pro	Thr	Ser	Pro	Arg	Lys	Met	Arg	Leu	Val	Ala	Asp	Met	Ile
		35					40					45			
Arg	Gly	Met	Glu	Val	Asn	Arg	Ala	Leu	Gly	Val	Leu	Lys	Phe	Ser	Ser
	50					55					60				
Lys	Glu	Ala	Ala	Ala	Arg	Val	Glu	Lys	Leu	Leu	Arg	Ser	Ala	Ile	Ala
65					70					75					80
Asn	Trp	Glu	Gln	Lys	Asn	Glu	Arg	Lys	Ala	Glu	Ser	Gly	Glu	Leu	Phe

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<210> 7214
<211> 245
<212> PRT
<213> B.fragilis
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<220>
<221> UNSURE
<222> (245)
<223> Identity of amino acid sequences at the above locations are unknown.
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<210> 7215
<211> 400
<212> PRT
<213> B.fragilis
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<400> 7215
Ser Phe His Pro Arg Gly Glu Asp Val Ser Trp Leu Ser Leu Phe Asp

1		5		10		15
Ile Gly Ile Gly Asn Gly Leu Lys Asn Lys Leu Thr Glu Ser Leu Ala						
	20		25		30	
Val Asn Asn Ile Glu Tyr Ser Arg Lys Leu Val Ser Thr Ser Tyr Val						
	35		40		45	
Tyr Ser Ala Leu Ile Phe Ser Val Ile Leu Val Ile Ser Leu Ile Ile						
	50		55		60	
Asn Cys Phe Ile Lys Trp Asn Leu Leu Leu Asn Val Glu Gln Ile Phe						
65		70		75		80
Asn Asn Asp Leu Thr Ile Thr Ala Phe Leu Val Ile Ile Ala Phe Cys						
	85		90		95	
Val Arg Phe Ile Leu Gln Ile Ile Thr Pro Val Leu Ala Ala Thr Gln						
	100		105		110	
Asn Ile Arg Phe Asn Ser Leu Ile Glu Phe Ile Gly Gln Ile Gly Ala						
	115		120		125	
Phe Ile Gly Val Ile Leu Leu Asn Tyr Leu Gly Val Lys Ser Ile Ile						
	130		135		140	
Ile Phe Thr Ile Val Val Leu Tyr Val Pro Leu Ile Ile Leu Phe Val						
145		150		155		160
Phe Ser Ile Tyr Leu Tyr Ser Asn Lys Leu Lys Glu Leu Arg Pro Cys						
	165		170		175	
Ile Arg Phe Ser Asp Lys Gln His Phe Ser Glu Ile Phe Ser Leu Gly						
	180		185		190	
Ile Asn Phe Phe Ile Ile Gln Ile Ser Ala Ile Val Ile Phe Gln Thr						
	195		200		205	
Asn Ser Phe Leu Ile Ala Asn Ser Phe Gly Pro Ala Asp Val Thr Lys						
	210		215		220	
Tyr Asn Ile Val Phe Lys Tyr Tyr Asn Ile Leu Ile Leu Leu Trp Gly						
225		230		235		240
Ile Leu Met Thr Pro Leu Trp Pro Ser Tyr Thr Asn Ala Tyr Ile Leu						
	245		250		255	
Gly Asn Tyr Lys Trp Ile Lys Lys Ser Val Lys Tyr Cys Leu Phe Met						
	260		265		270	
Phe Leu Leu Thr Ile Ile Val Ala Val Ile Met Ala Phe Val Gly Pro						
	275		280		285	
Ala Val Ile Glu Tyr Trp Leu Gly Gln Asp Leu Asn Ile Ser Arg Ser						
	290		295		300	
Leu Leu Leu Ala Met Leu Leu Phe Ala Leu Val Ser Ile Trp Asn Asn						
305		310		315		320
Ile Phe Gly Cys Val Val Gly Ala Ile Gly Lys Val Arg Leu Gly Val						
	325		330		335	
Tyr Ser Thr Ser Leu Ser Ala Leu Ile Phe Phe Pro Leu Phe Tyr Leu						
	340		345		350	
Leu Lys Ser Leu Arg Leu Ala Ile Glu Gly Ala Ile Trp Ser Met Ile						
	355		360		365	
Ile Cys Ile Ser Leu Ser Ala Phe Leu Ser Pro Ile Gln Ile Tyr Tyr						
	370		375		380	
Phe Ile Tyr Thr Lys Lys Lys Ser Leu Phe Leu Thr Lys Leu Leu Ser						
385		390		395		400

<210> 7216

<211> 61

<212> PRT

<213> B.fragilis

<400> 7216

Asn Asn Ser Phe Asn His Ser Glu Ile Ser Ile Leu Lys Pro Arg Tyr
1 5 10 15
Phe Pro Tyr Gly Ser Phe Val Ser Glu Ala Pro Leu Leu Arg Ile Ser

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<210> 7217
<211> 383
<212> PRT
<213> B.fragilis
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<400> 7217																
Phe 1	Thr	Lys	Phe	Tyr 5	Pro	Met	Lys	Leu	Ile 10	Ile	Asn	Ala	Ser	Thr 15	Leu	
Ser	Gly	Thr	Gly 20	Val	Thr	Gln	Val	Ala 25	Val	Ser	Phe	Ile	Glu 30	Glu	Cys	
Lys	Arg	Phe	Glu	Glu	Asn	Tyr	Tyr 40	Phe	Val	Phe	Leu	Ser	Asn 45	His	Val	
Tyr	Ser	Gln	Val	Glu	Ile	Glu	Lys 55	Phe	Pro	Ser	Asn 60	Phe	Lys	Phe	Tyr	
Val 65	Ile	Asp	Lys	His	Pro	Arg	Tyr 70	Phe	Ile	Glu	Gly 75	Tyr	Ser	Thr	Arg	
Arg	Tyr	Leu	Arg	Thr 85	Met	Glu	Ala	Ile	Ile 90	Lys	Pro	Asp	Cys	Val 95	Phe	
Ser	Ile	Phe	Gly 100	Pro	Ser	Tyr	Trp	Thr 105	Pro	Lys	Ala	Pro	His	Leu 110	Met	
Gly	Tyr	Ala	Tyr	Pro	His	Tyr	Val 120	Tyr	Pro	Glu	Ser	Pro	Val	Phe	Asp	
Ile	Met	Thr	Val	Lys	Asp	Lys	Ile 135	Arg	Phe	Cys	Leu	Tyr	Lys	Lys	Ile	
His 145	Lys	Tyr	Phe	Leu	Lys	Lys	Asn 150	Gly	Phe	Tyr	Tyr	Val	Cys	Glu	Thr	
Glu	Asp	Val	Ser	Asn	Arg	Leu	Lys	Lys	Tyr 170	Leu	Gly	Ile	Ser	Ser	Asp	
Arg	Val	Tyr	Thr 180	Val	Ser	Asn	Thr	Tyr 185	Asn	His	Tyr	Phe	Asp	Gln	Phe	
Lys	Leu	Pro	Leu	Asn	Ser	Phe	Val 200	Glu	Lys	Asp	Val	Thr	Glu	Phe	Lys	
Phe	Leu	Ser	Leu	Cys	Ser	Phe	Ala 215	Val	His	Lys	Asn	Leu	Gln	Ile	Leu	
Asn 225	Gln	Val	Ile	Pro	Leu	Leu	Asn 230	Asp	Thr	Leu	Lys	Asn	Ile	Lys	Ile	
Ile	Phe	Val	Leu	Thr	Val	Asp	Ser	Lys	Ser	Phe	Lys	Tyr	Tyr	Leu	Ser	
Glu	Glu	Ala	Lys	Lys	Ser	Ile	Val	Asn	Leu	Gly	Ile	Ile	Asp	Val	Ser	
Lys	Cys	Pro	Gln	Leu	Tyr	Asn	Glu	Cys	Asp	Ala	Leu	Phe	Leu	Pro	Thr	
Leu	Leu	Glu	Cys	Phe	Ser	Ala	Asn	Tyr	Val	Glu	Ala	Met	Lys	Met	Arg	
Lys 305	Pro	Ile	Val	Thr	Ser	Asn	Leu	Pro	Phe	Ala	Thr	Asn	Val	Cys	Lys	
Asn	Ala	Ala	Leu	Tyr	Phe	Asp	Pro	Met	Asn	Ala	His	Asp	Ile	Val	Glu	
Lys	Ile	Ser	Leu	Val	Arg	Asn	Lys	Gln	Leu	Tyr	Arg	Asn	Leu	Cys		
Leu	Glu	Gly	Asp	Leu	Val	Leu	Lys	Gly	Phe	Lys	Thr	Ser	Gln	Glu	Arg	
Ala	Lys	Ser	Tyr	Leu	Glu	Ile	Cys	Lys	Ser	Ile	Ile	Arg	Lys	Val		

380

<400> 7218

1	Lys	Ile	Thr	Leu	Ile	Ile	Met	Ile	His	Val	Asp	Leu	Ser	Lys	Arg
Asn	Ser	Ile	Phe	Ser	Leu	Ile	Leu	Val	Trp	Ile	Phe	Leu	Thr	Ser	Thr
			20					25					30		
Ala	Pro	Phe	Val	Phe	Phe	Arg	Trp	Pro	Gly	His	Pro	Tyr	Lys	Thr	Leu
		35					40					45			
Ser	Phe	Leu	Cys	Leu	Phe	Thr	Met	Val	Phe	His	Leu	Asn	Val	Gly	Arg
		50				55					60				
Gly	Val	Lys	Arg	Val	Asp	Ser	Ser	Ile	Phe	Ala	Ile	Val	Leu	Leu	Gln
65					70					75					80
Ile	Cys	Tyr	Tyr	Ile	Leu	Ile	Ser	Phe	Tyr	His	Ser	Asp	Phe	Lys	Asn
				85					90					95	
Ile	Asn	Leu	Cys	Ile	Gln	Leu	Ile	Ser	Leu	Cys	Ile	Ile	Ile	Ser	Tyr
			100					105					110		
Ile	Lys	Ile	Tyr	Val	Gly	Phe	Asp	Val	Phe	Val	Lys	Ser	Phe	Ile	Trp
			115				120					125			
Ile	Met	Leu	Ile	Met	Gly	Val	Gly	Gly	Thr	Leu	Thr	Phe	Phe	Leu	His
		130				135					140				
Leu	Leu	Gly	Leu	Ile	Thr	Pro	Ile	Phe	Arg	Val	Glu	Tyr	Gly	Ser	Asp
145					150					155					160
Ile	Ser	Tyr	Phe	Leu	Gly	Leu	Thr	Thr	Thr	Asn	Val	Phe	Phe	Asp	Ser
			165						170					175	
Glu	Gly	Ile	Arg	Val	Ile	Arg	Tyr	Ala	Gly	Phe	Phe	Asp	Glu	Pro	Gly
			180					185					190		
Thr	Phe	Ser	Leu	Phe	Ser	Ile	Phe	Ala	Leu	Ile	Leu	Asn	Lys	Val	Tyr
		195					200					205			
Phe	Asn	Asp	Lys	Asn	Lys	Glu	Leu	Leu	Leu	Ile	Leu	Val	Thr	Ile	Phe
		210				215					220				
Thr	Phe	Ser	Ile	Ala	Phe	Tyr	Val	Thr	Ile	Phe	Phe	Tyr	Phe	Leu	Phe
225					230					235				240	
Phe	Tyr	Val	Thr	Lys	Lys	Asp	Met	Lys	Tyr	Val	Pro	Leu	Ile	Ile	Ser
				245					250					255	
Val	Val	Phe	Ile	Cys	Tyr	Leu	Ser	Leu	Gln	Asn	Ser	Asn	Gly	Gly	Ser
			260					265					270		
Leu	Gly	Thr	Ile	Tyr	Lys	Leu	Thr	Phe	Glu	Arg	Leu	Asp	Phe	Ser	Glu
		275					280					285			
Asp	Ala	Arg	Gly	Asn	Asn	Asn	Arg	Ala	Gly	Pro	Met	Glu	Asn	Asp	Arg
		290				295					300				
Arg	Ile	Phe	Phe	Asn	Asn	Phe	Leu	Leu	Gly	Val	Gly	Leu	Gly	Ser	Glu
305					310					315					320
Glu	Val	Glu	Gly	Ser	Asn	Val	Phe	Ala	Val	Phe	Ala	Arg	Tyr	Gly	Val
				325					330					335	
Ile	Gly	Ser	Phe	Phe	Phe	Tyr	Ala	Phe	Leu	Ile	Tyr	Leu	Leu	Leu	Leu
			340					345					350		
Ile	Val	Asn	Val	Pro	Leu	Glu	Asn	Arg	Lys	Leu	Phe	Phe	Lys	Ile	Tyr
		355													

405

<210> 7219
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 7219
 Gly Lys Met Thr Lys Ala Asp Ile Val Asn Glu Ile Ala Lys Asn Thr
 1 5 10 15
 Gly Val Asp Lys Val Thr Val Leu Thr Thr Val Glu Ala Phe Met Asp
 20 25 30
 Ala Val Lys Asp Ser Leu Ser Lys Asp Glu Asn Val Tyr Leu Arg Gly
 35 40 45
 Phe Gly Ser Phe Val Val Lys Lys Arg Ala Gln Lys Thr Ala Arg Asn
 50 55 60
 Ile Ser Lys Asn Thr Thr Ile Ile Ile Pro Glu His Asn Ile Pro Ala
 65 70 75 80
 Phe Lys Pro Ala Lys Thr Phe Thr Leu Ser Val Lys Lys
 85 90

<210> 7220
 <211> 309
 <212> PRT
 <213> B.fragilis

<400> 7220
 Tyr Met Asn Ala Leu Val Thr Asn Pro Leu Val Ser Ile Val Ile Pro
 1 5 10 15
 Val Tyr Asn Arg Glu Leu Tyr Ile Glu Asp Ala Ile Lys Ser Ala Ile
 20 25 30
 Ser Gln Thr Tyr Gln Asn Ile Glu Ile Ile Ile Val Asp Asn Cys Ser
 35 40 45
 Thr Asp Leu Thr Trp Ser Ile Leu Asn Thr Trp Ala Ser Lys Asp His
 50 55 60
 Arg Ile Lys Ile Tyr Gln Asn Lys Thr Asn Ile Gly Pro Val Leu Asn
 65 70 75 80
 Trp Asn Glu Cys Phe Lys His Ala Ser Gly Glu Tyr Ile Lys Ile Leu
 85 90 95
 Trp Ser Asp Asp Trp Met Ala Leu Asp Phe Ile Glu Arg Ala Val Asn
 100 105 110
 Leu Ile Asp Glu Lys Ser Ala Phe Val Ile Ser Asn His Lys Ile Val
 115 120 125
 Ser Glu Asn Gly Ile Val Asp Asn Val Lys Tyr Lys Lys Gln Lys Tyr
 130 135 140
 Thr Arg Lys Glu Tyr Leu Tyr Asn Ile Leu Phe Gln Asn Ile Glu Lys
 145 150 155 160
 Phe Pro Leu Ser Pro Gly Cys Ala Leu Phe Arg Thr Lys Asp Leu Asn
 165 170 175
 Asp Asn Phe Val Ile Asp Ile Pro Asn Thr Asp Gly Leu Asp Ser Lys
 180 185 190
 Lys Asn Gly Ala Gly Asn Asp Leu Leu Ile Phe Leu Asn Ile Val Leu
 195 200 205
 Asn Tyr Ala His Ile Ser Ile Leu Gln Tyr Asp Gly Ser Phe Phe Arg
 210 215 220
 Ala His Lys Glu Ser Phe Ser Ile Gln Asn Gln Leu Glu Leu Tyr Tyr
 225 230 235 240
 Glu Trp Ala Lys Val Tyr Phe Ile Gln Lys Lys Leu Asn Lys Thr Tyr
 245 250 255

Tyr Ser Asn Ile Lys Lys Ile Met Phe Trp Gln Gln Ile Asn Lys Gly
 260 265 270
 Asn Lys Ile Tyr His Asn Leu Tyr Val Cys Leu Lys Tyr Asn Tyr Trp
 275 280 285
 Met Pro Leu Ser Phe Cys Ile Ile Ile Leu Gly Gly Val Leu Asn Ser
 290 295 300
 Leu Arg Asn Arg Lys
 305

<210> 7221
 <211> 321
 <212> PRT
 <213> B.fragilis

<400> 7221

Arg Ser Tyr Leu Glu Tyr Asp Asn Leu Tyr Leu Ile Lys Arg Phe Ser
 1 5 10 15
 Ile Pro Tyr Ser Asn Ile Leu Phe Tyr Leu Tyr Glu Glu Lys Val Phe
 20 25 30
 Ile Leu Asn Glu Ile Ile Glu Leu Met Asn Asn Leu Leu Ser Ile Phe
 35 40 45
 Ile Pro Thr Tyr Asn Arg Cys Asn Val Leu Asp Thr Val Leu Asp Arg
 50 55 60
 Val Ile Ser Ser Val Lys Glu Tyr Asp Val Cys Val Gln Val Tyr Asp
 65 70 75 80
 Asn Cys Ser Leu Asp Lys Thr Glu Asn Ile Val Cys Ala Lys Gln Lys
 85 90 95
 Leu Tyr Pro Tyr Ile Phe Tyr Cys Lys Asn Glu Thr Asn Ile Gly Leu
 100 105 110
 Asp Arg Asn Met Leu Asn Val Leu Asn Lys Gln Val Ser Lys Tyr Thr
 115 120 125
 Leu Met Leu Gly Asp Asp Asp Phe Leu Val Asp Asp Phe Tyr Lys Lys
 130 135 140
 Ile Glu Ser Tyr Leu Lys Gln Cys Phe Asp Phe Ile Val Leu Ser Val
 145 150 155 160
 Asp Ser Thr Phe Lys Thr Thr Val Tyr Val Glu Lys Leu Ser Ala Phe
 165 170 175
 Ser Phe Leu Trp Asp Lys Met Pro Tyr Gly Thr Val Ile Ile Arg Asn
 180 185 190
 Gly Leu Ile Asn Arg Cys Asp Val Glu Lys Tyr Ile Gly Thr Ser His
 195 200 205
 Ala Tyr Ser Ala Ile Pro Trp Glu Ser Met Leu Ser Ser Asn Ala Ile
 210 215 220
 Gly Lys Cys Leu Phe Tyr Ser Asp Tyr Ile Leu Val Glu Leu Gly Glu
 225 230 235 240
 Ile Glu Lys Thr Trp Lys Ser Asn Ala Ile Asp Ile Phe Met Tyr Gln
 245 250 255
 Ile Pro Leu Trp Phe Ser Ile Leu Pro Glu Gln Tyr Ile Met Lys Asn
 260 265 270
 Lys Ile Tyr Arg Gly Tyr Met Arg Asn Leu Phe Ser Leu Arg Asn Ile
 275 280 285
 Trp Ser Leu Tyr Arg Arg Tyr Asn Phe Lys Ser Leu Ser Ser Met Arg
 290 295 300
 Phe Leu Ser Asn Ile Asn Lys Phe Lys Phe Val Leu Ile Ser Arg Leu
 305 310 315 320
 Gln

<210> 7222

<211> 316
 <212> PRT
 <213> B.fragilis

<400> 7222

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Leu Met Tyr Tyr Leu Ile Ile Leu Val Leu Leu Phe Leu Ala Glu Leu
1      5      10      15
Phe Tyr Phe His Ile Ala Asp Lys Tyr Asn Ile Ile Asp Lys Pro Asn
20      25      30
Glu Arg Ser Ser His Thr Arg Ile Thr Leu Arg Gly Gly Gly Ile Ile
35      40      45
Phe Tyr Leu Gly Ala Leu Ala Tyr Phe Leu Thr Asn Gln Phe Glu Tyr
50      55      60
Pro Trp Phe Met Leu Ala Leu Thr Leu Val Thr Val Ile Ser Phe Val
65      70      75      80
Asp Asp Ile Arg Ser Ile Ser Gln Gly Leu Arg Leu Val Phe His Phe
85      90      95
Thr Ala Met Gly Leu Met Phe Tyr Gln Trp Glu Leu Phe Thr Leu Pro
100     105     110
Trp Trp Thr Val Val Val Ala Leu Ile Ala Cys Thr Gly Ile Ile Asn
115     120     125
Ala Tyr Asn Phe Met Asp Gly Ile Asn Gly Ile Thr Gly Gly Tyr Ser
130     135     140
Leu Val Val Leu Gly Ser Leu Ala Phe Ile Asn His Trp Val Val Ser
145     150     155     160
Phe Val Glu Pro Gly Leu Ile Tyr Thr Met Leu Cys Ala Val Leu Val
165     170     175
Phe Asn Phe Phe Asn Phe Arg Lys Arg Ala Lys Cys Phe Ala Gly Asp
180     185     190
Val Gly Ser Val Ser Ile Ala Phe Ile Ile Leu Phe Leu Ile Gly Lys
195     200     205
Leu Ile Ile Asp Thr Glu Asp Phe Ser Trp Ile Val Leu Leu Ala Val
210     215     220
Tyr Gly Ala Asp Ser Val Leu Thr Ile Val His Arg Leu Met Leu His
225     230     235     240
Glu Asn Ile Gly Leu Pro His Arg Lys His Leu Tyr Gln Ile Met Ala
245     250     255
Asn Glu Leu Lys Ile Pro His Val Ala Val Ser Leu Thr Tyr Met Val
260     265     270
Val Gln Gly Val Val Val Ala Gly Tyr Leu Val Leu Arg Glu Tyr Gly
275     280     285
Tyr Val Tyr Leu Ala Gly Ser Ile Leu Leu Leu Ser Ile Leu Tyr Leu
290     295     300
Leu Phe Met Lys Arg Phe Phe His Leu His Gln Phe
305     310     315

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<210> 7223
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 7223

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Met Asn Ile Leu Ile Ser Gly Ile Cys Gly Phe Val Gly Thr Asn Leu
1      5      10      15
Ile Lys Val Leu Lys Lys Val His Thr Leu Tyr Gly Leu Asp Ile Ile
20      25      30
Asp Val Glu Lys Gln Met Asp Ile Lys Arg Phe Ser Trp Thr Glu Phe
35      40      45
Glu Pro Ser Ala Phe Pro Leu Gln Thr Leu Pro Lys Phe Asp Val Ile

```

50		55		60
Ile His Leu Ala Gly Lys Ala His Asp Thr Lys Lys Gln Ser Ala Ala				
65		70		75
Gln Ser Tyr Phe Asp Ile Asn Thr Gly Leu Thr Gln Lys Ile Phe Asp				
	85		90	95
Phe Phe Leu Glu Ser Ser Ala Lys Lys Phe Ile Phe Phe Ser Ser Val				
	100		105	110
Lys Ala Ala Ala Asp Ser Val Val Gly Asp Val Leu Thr Glu Asp Val				
	115		120	125
Ile Pro Thr Pro Val Gly Pro Tyr Gly Glu Ser Lys Ile Gln Ala Glu				
	130		135	140
Glu Tyr Ile Lys Lys His Phe Thr Phe Ser Asn Thr Asp Lys Gln Val				
	145		150	155
Tyr Ile Leu Arg Pro Cys Met Ile His Gly Pro Gly Asn Lys Gly Asn				
	165		170	175
Leu Asn Leu Leu Tyr Asn Val Val Lys Lys Gly Ile Pro Trp Pro Leu				
	180		185	190
Gly Asp Phe Glu Asn Arg Arg Ser Phe Thr Ser Ile Asp Asn Leu Cys				
	195		200	205
Tyr Val Ile Glu Gly Leu Leu Thr Lys Asp Val Pro Ser Gly Ile Tyr				
	210		215	220
His Met Gly Asp Asp Glu Ala Leu Ser Thr Asn Glu Leu Ile Ala Ile				
	225		230	235
Met Cys Glu Val Met Gly Lys Gln Pro His Ile Trp Lys Met Asn Lys				
	245		250	255
Arg Phe Met Glu Gly Cys Ala Gly Leu Gly Thr Leu Leu His Leu Pro				
	260		265	270
Leu Asn Thr Glu Arg Leu Arg Lys Leu Thr Glu Asn Tyr Val Val Ser				
	275		280	285
Asn Thr Lys Ile Lys Val Ala Leu Gly Ile Asp Lys Met Pro Val Thr				
	290		295	300
Ala Lys Glu Gly Leu Ile Lys Thr Ile Arg Ser Phe Glu Glu Thr Glu				
	305		310	315
				320

<210> 7224

<211> 253

<212> PRT

<213> B.fragilis

<400> 7224

Lys Val Ile Tyr Tyr Phe Met Asp Lys Ser Gly Ala Asp Pro Leu Phe				
1	5	10	15	
Ser Ile Ile Thr Val Ser Tyr Asn Ala Lys Glu Ser Ile Glu Asp Thr				
	20	25	30	
Ile Asn Ser Ile Val Asn Gln Thr Tyr Ser Asn Phe Glu Tyr Ile Ile				
	35	40	45	
Val Asp Gly Gly Ser Thr Asp Gly Thr Leu Asp Ile Ile Arg Lys Tyr				
	50	55	60	
Glu Asp Lys Ile Ser Tyr Trp Ile Ser Glu Pro Asp Asn Gly Ile Tyr				
	65	70	75	80
Asp Ala Met Asn Lys Gly Leu Ala Ile Cys Lys Gly Glu Trp Ile Asn				
	85	90	95	
Phe Met Asn Ser Gly Asp Leu Phe Tyr Asn Asp His Val Leu Val Asp				
	100	105	110	
Ile Tyr Arg Tyr Cys Asp Phe Lys Lys Phe His Ile Leu Tyr Gly Lys				
	115	120	125	
Thr Val Val Lys Glu Thr Gly Arg Val Ile Val Pro Pro Leu Lys Ile				
	130	135	140	
Arg Lys Lys Tyr Phe Leu Leu Asp Thr Ile Cys His Gln Ser Ile Phe				

145		150		155		160									
Phe	Asn	Arg	Ser	Ile	Phe	Met	Asp	Leu	Gly	Thr	Tyr	Ser	Leu	Asp	Tyr
				165					170					175	
Lys	Ile	Ile	Ala	Asp	Arg	Asp	Leu	Leu	Leu	Lys	Ser	Ile	Ile	Asn	Glu
			180					185						190	
Lys	Arg	Phe	Leu	Tyr	Val	Asp	Val	Val	Val	Ser	Leu	Trp	Glu	Ser	Leu
		195					200					205			
Gly	Phe	Ser	Gly	Asn	Asn	Leu	Lys	Leu	Phe	Lys	Asn	Glu	Glu	Lys	Leu
	210					215					220				
Leu	Val	Asn	Arg	Asn	Phe	Asn	Thr	Val	Glu	Ile	Tyr	Phe	Ile	Arg	Ile
225					230					235					240
Asn	Tyr	Lys	Phe	Arg	Gln	Phe	Leu	Asn	Lys	Leu	Lys	Leu			
				245					250						

<210> 7225

<211> 239

<212> PRT

<213> B.fragilis

<400> 7225

Arg	Ala	Phe	His	Arg	Gly	Arg	Ser	Phe	Leu	Ile	Ser	Ala	Phe	Ala	Met
1			5						10					15	
Ala	Leu	Leu	Arg	Glu	Tyr	Lys	Glu	Ile	Ala	Tyr	Gln	Trp	Gly	Ile	Trp
			20					25					30		
Lys	Thr	Glu	Glu	Ser	Pro	Glu	Glu	Leu	Leu	Ala	Leu	Leu	Pro	Asp	Pro
		35				40					45				
Glu	Arg	Tyr	Glu	Gln	Gln	Leu	Thr	Arg	Phe	Ser	Ser	Pro	His	Arg	Lys
	50				55					60					
Leu	Glu	Trp	Leu	Ser	Val	Arg	Val	Leu	Leu	Tyr	Gln	Leu	Leu	Gly	Glu
65					70					75				80	
Glu	Lys	Thr	Ile	Glu	Tyr	Ala	Pro	Ser	Gly	Lys	Pro	His	Leu	Ala	Asp
				85					90					95	
Ser	Ser	Tyr	Phe	Ile	Ser	Ile	Ser	His	Thr	Arg	Gly	Tyr	Val	Ala	Val
			100					105					110		
Ile	Leu	Ser	Pro	Val	Ser	Glu	Val	Gly	Ile	Asp	Ile	Glu	Gln	Tyr	Gly
	115					120						125			
Gln	Arg	Val	His	Lys	Val	Ala	His	Lys	Tyr	Met	Arg	Pro	Asp	Glu	Leu
	130					135					140				
Ile	Ser	Glu	Tyr	Gln	Gly	Glu	Asp	Thr	Trp	Ser	Leu	Leu	Leu	His	Trp
145					150					155					160
Ser	Ala	Lys	Glu	Val	Met	Phe	Lys	Cys	Met	Asp	Thr	Ser	Glu	Val	Asp
				165					170					175	
Phe	Arg	Glu	His	Leu	Arg	Ile	Met	Pro	Phe	Gln	Val	Cys	Glu	His	Gly
			180					185					190		
Glu	Phe	Pro	Ala	Glu	Glu	Tyr	Arg	Thr	Glu	His	Lys	Lys	Lys	Phe	Met
		195					200					205			
Ile	Arg	Tyr	Leu	Leu	His	Pro	Asp	Phe	Val	Met	Thr	Trp	Gln	Val	Thr
	210					215					220				
Ser	Ala	Tyr	Ser	Val	Asn	Glu	Cys	Asp	Ile	Met	Lys	Lys	Met	Gln	
225					230					235					

<210> 7226

<211> 404

<212> PRT

<213> B.fragilis

<400> 7226

Thr	Thr	Ile	His	Gln	Lys	Glu	Ser	Gly	Lys	Ser	Arg	Cys	Ser	Ser	Val
1				5					10					15	

Glu Asn Gly Ser Arg Tyr Ile Ala Trp Ile Phe Ser Asp His Phe Phe
 20 25 30
 Ser Tyr Leu Phe Ile Lys Leu Asn Phe Ala Ile Met Lys Lys Leu Met
 35 40 45
 Phe Leu Val Ala Ala Ser Leu Phe Val Phe Ala Ala Cys Ser Ser Glu
 50 55 60
 Asp Asp Ser Ser Pro Glu Val Asn Pro Glu Asn Ala Ala Ile Thr Phe
 65 70 75 80
 Glu Leu Ser Ala Val Asn Gly Leu Thr Asp Gly Ile Gly Thr Arg Met
 85 90 95
 Pro Val Tyr Ser Gln Glu Ala Thr Gln His Val Thr Arg Val Ser Val
 100 105 110
 Tyr Ala Phe Val Gln Asn Gly Ser Thr Tyr Leu His Gln Lys Thr Tyr
 115 120 125
 Asp Ile Thr Gly Trp Thr Asp Gly Thr Thr Phe Lys Arg Phe Ala Val
 130 135 140
 Pro Asp Ala Asp Lys Leu Pro Val Gly Val Tyr Lys Phe Leu Ala Val
 145 150 155 160
 Gly Arg Asp Ala Thr Asp Arg Phe Ser Val Thr Thr Pro Thr Ser Gly
 165 170 175
 Asn Thr Asn Tyr Thr Asp Met Leu Ala Ser Ile Val Asn Ser Gly Asp
 180 185 190
 Glu Ser Glu Ile Phe Ala Gly Ser Ala Asp Ala Glu Val Met Ala Gln
 195 200 205
 Gly Gly Thr Arg Val Ser Ile Glu Met Thr Arg Lys Val Ala Gly Val
 210 215 220
 Leu Gly Tyr Phe Lys Asn Val Pro Gln Val Leu Asn Gly Ser Thr Val
 225 230 235 240
 Lys Tyr Leu Arg Leu Lys Val Ser Asn Ser Asn Gln Gln Val Asn Leu
 245 250 255
 Thr Asn Gly Val Gly Ile Asn Thr Ala Pro Thr Pro Tyr Asn Ile Ile
 260 265 270
 Asp Met Asp Leu Ser Gly Gln Ala Val Ser Asn Gly Val Tyr Val Gly
 275 280 285
 Asn Asp Leu Ser Gly Gln Gly Val Val Lys Val Pro Asn Ser Gln Leu
 290 295 300
 Gly Gly Ser Phe Tyr Ile Pro Val Ser Gly Val Ser Met Thr Leu Gly
 305 310 315 320
 Leu Tyr Asp Ala Ser Gly Val Ala Ile Lys Glu Trp Thr Val Ser Asp
 325 330 335
 Thr Asn Ser Ser Gly Ala Thr Gln Phe Asn Leu Met Ala Asn His Phe
 340 345 350
 Tyr Ser Leu Gly Val Lys Gly Ala Thr Gly Ser Val Asp Gly Gly Thr
 355 360 365
 Pro Gly Asn Pro Gly Asp Asp Asp Ala Pro Val Asp Leu Leu Thr Asp
 370 375 380
 Gln Asn Ile Val Ile Thr Ile Ser Pro Ala Trp Glu Leu Ile His Asn
 385 390 395 400
 Leu Val Ile Gln

<210> 7227

<211> 453

<212> PRT

<213> B.fragilis

<400> 7227

Leu Lys Thr Asn Ile Leu Asp Pro Asp Ala Tyr Leu Cys Gln Leu Ala
 1 5 10 15

Glu Ile Phe Asn Gly Ile Ser Val Asn Thr Pro Ser Leu Ser Ala Ile
 20 25 30
 Ile Ala Ile Ile Leu Ala Gly Leu Leu Leu Leu Ala Ser Gly Phe Ala
 35 40 45
 Ser Ala Ser Glu Ile Ala Phe Phe Ser Leu Ser Pro Ser Asp Leu Asn
 50 55 60
 Asp Ile Glu Glu Gly Asn His Pro Ser Asp Gly Lys Ile Ser Asn Leu
 65 70 75 80
 Leu Ala Asp Ser Glu Arg Leu Leu Ala Thr Ile Leu Ile Thr Asn Asn
 85 90 95
 Phe Val Asn Val Thr Ile Ile Met Leu Cys Asn Phe Phe Phe Met Asn
 100 105 110
 Val Phe Val Phe His Ser Pro Leu Ala Glu Phe Leu Ile Leu Thr Val
 115 120 125
 Ile Leu Thr Phe Leu Leu Leu Leu Phe Gly Glu Ile Met Pro Lys Ile
 130 135 140
 Tyr Ser Ala Gln Lys Thr Leu Ala Phe Cys Arg Phe Ser Ala Pro Val
 145 150 155 160
 Ile Tyr Val Leu Arg Lys Val Phe Ala Pro Ile Ser Ala Val Leu Val
 165 170 175
 His Ser Thr Ala Phe Leu Asn Lys His Phe Ala Lys Lys Asn His Asn
 180 185 190
 Ile Ser Val Asp Glu Leu Ser His Ala Leu Glu Leu Thr Asp Lys Ala
 195 200 205
 Glu Leu Thr Glu Glu Asn Asn Ile Leu Glu Gly Ile Ile Arg Phe Gly
 210 215 220
 Gly Glu Thr Ala Lys Glu Val Met Thr Ser Arg Leu Asp Val Val Asp
 225 230 235 240
 Leu Asp Ile Arg Thr Pro Phe Lys Asp Val Ile Gln Cys Ile Ile Asp
 245 250 255
 Asn Ala Tyr Ser Arg Ile Pro Ile Tyr Ser Gly Thr Arg Asp Asn Ile
 260 265 270
 Lys Gly Val Leu Tyr Ile Lys Asp Leu Leu Pro His Leu Asn Lys Gly
 275 280 285
 Asp Asn Phe Arg Trp Gln Ser Leu Ile Arg Pro Ala Tyr Phe Val Pro
 290 295 300
 Glu Thr Lys Met Ile Asp Asp Leu Leu Arg Asp Phe Gln Ala Asn Lys
 305 310 315 320
 Ile His Ile Ala Ile Val Val Asp Glu Phe Gly Gly Thr Ser Gly Ile
 325 330 335
 Val Thr Met Glu Asp Ile Ile Glu Glu Ile Val Gly Glu Ile His Asp
 340 345 350
 Glu Tyr Asp Asp Glu Glu Arg Thr Tyr Thr Val Ile Asn Asp His Thr
 355 360 365
 Trp Val Phe Glu Ala Lys Thr Gln Leu Thr Asp Phe Tyr Lys Ile Thr
 370 375 380
 Lys Val Asp Glu Asp Asp Phe Asp Lys Val Asp Gly Asp Ala Asp Thr
 385 390 395 400
 Leu Ala Gly Leu Leu Leu Glu Ile Lys Gly Glu Phe Pro Ala Leu His
 405 410 415
 Glu Lys Val Leu Tyr His Arg Tyr Glu Phe Glu Val Leu Ala Met Asp
 420 425 430
 Ser Arg Arg Ile Leu Lys Val Lys Phe Thr Val Asn Glu Pro Ser Thr
 435 440 445
 Glu Glu Glu Ala Ser
 450

<210> 7228

<211> 64

<213> B.fragilis

Leu	His	Lys	Asn	Ile	Lys	Ser	Asp	Ile	Asp	Leu	Asn	Ile	Gly	Tyr	Asn
1				5					10					15	
Asn	Ala	Gln	Arg	Asn	Lys	Leu	Tyr	Thr	Lys	Ile	Asn	Ile	Phe	Lys	Ile
			20					25					30		
Arg	Met	Ile	Glu	Arg	Asp	Gln	Tyr	Ile	Ile	Thr	Tyr	Leu	Gln	Gln	Asp
		35					40					45			
Asn	Ser	Glu	Asn	Gly	Thr	Ile	Tyr	Pro	Leu	Asn	Thr	Ser	Ser	Asn	Ile
	50					55					60				

<211> 370

<213> B.fragilis

Leu 1	Asn	Glu	Asn	Asp 5	Tyr	Phe	Cys	Ala	Arg 10	Ile	Lys	Leu	Thr	Lys 15	Ser
Arg	Ile	Arg	Pro 20	Lys	Ser	Met	Asn	Arg 25	Asn	Phe	Ser	Asn	Ala 30	Ile	Glu
Asn	Trp	Tyr	Lys 35	Glu	Tyr	Lys	Arg 40	Glu	Leu	Pro	Trp	Arg 45	Asp	Ser	Ala
Asp	Pro	Tyr	Val	Ile	Trp	Ile	Ser 55	Glu	Ile	Ile	Leu 60	Gln	Gln	Thr	Arg
Val 65	Val	Gln	Gly	Tyr	Asp 70	Tyr	Phe	Val	Arg 75	Phe	Met	Lys	Arg	Phe	Pro
Asp	Val	Ala	Thr	Leu 85	Ala	Glu	Ala	Asp 90	Glu	Asp	Glu	Val	Met	Lys 95	Tyr
Trp	Gln	Gly	Leu 100	Gly	Tyr	Tyr	Ser	Arg 105	Ala	Arg	Asn	Leu	His 110	Ala	Ala
Ala	Lys	Ser	Met	Asn	Gly	Val	Phe 120	Pro	Lys	Thr	Tyr	Pro 125	Glu	Val	Arg
Ala	Leu	Lys	Gly	Val	Gly	Glu	Tyr 135	Thr	Ala	Ala	Ala 140	Ile	Cys	Ser	Phe
Ala 145	Tyr	Asn	Met	Pro	Tyr 150	Ala	Val	Val	Asp	Gly	Asn	Val	Tyr	Arg	Val
Leu	Ser	Arg	Tyr	Leu 165	Gly	Ile	Asp	Thr 170	Pro	Ile	Asp	Ser	Thr	Glu	Gly
Lys	Lys	Leu	Phe 180	Ala	Ala	Val	Ala	Asp 185	Glu	Leu	Leu	Asp	Arg 190	Lys	Asn
Pro	Ala	Leu	Tyr	Asn	Gln	Ala	Ile 200	Met	Asp	Phe	Gly	Ala 205	Ile	Gln	Cys
Ser	Pro	Gln	Thr	Pro	Asn	Cys	Met 215	Phe	Cys	Pro	Leu 220	Ala	Asp	Ser	Cys
Ala 225	Ala	Leu	Ala	Lys	Gly 230	Thr	Val	Ala	Glu	Leu	Pro	Val	Lys	Gln	His
Lys	Ile	Lys	Thr	Thr	Asn	Arg	Tyr	Phe	Asn 250	Tyr	Ile	Tyr	Val	Arg 255	Met
Gly	Val	His	Thr 260	Phe	Ile	Asn	Lys	Arg 265	Thr	Gly	Asn	Asp	Ile	Trp	Arg
Asn	Leu	Phe	Glu	Leu	Pro	Leu	Ile 280	Glu	Thr	Pro	Val	Ala 285	Val	Ser	Glu
Glu	Glu	Phe	Leu	Ala	Leu	Pro	Glu 295	Leu	Lys	Ala	Leu 300	Phe	Ala	Pro	Lys
Glu 305	Leu	Pro	Val	Val	Arg 310	Ser	Val	Cys	Arg	Asp 315	Val	Lys	His	Val	Leu

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<210> 7230
<211> 156
<212> PRT
<213> B.fragilis
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<210> 7231
<211> 105
<212> PRT
<213> B.fragilis
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$$\begin{array}{ll} \langle 210 \rangle & 7232 \\ \langle 211 \rangle & 77 \end{array}$$

<212> PRT

<213> B.fragilis

<400> 7232

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Leu Ile Ala Asp Phe Ile Ala Ser Ser Met Tyr Ser Ser Leu Leu Tyr
1           5           10           15
Thr Gly Ile Thr Ile Asp Thr Lys Gly Leu Val Thr Ser Ala Phe Ile
          20           25           30
Tyr Tyr Cys Asn Leu Leu Ile Asn Thr Asn Leu Asn Leu Ile Phe
          35           40           45
Asp Lys Asn Arg Ile Leu Leu Lys Leu Leu Lys Leu Tyr Arg Leu Tyr
          50           55           60
Lys Asp Gln Ile Phe Leu Lys Glu Lys Arg Phe Leu Ile
65           70           75

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<210> 7233

<211> 781

<212> PRT

<213> B.fragilis

<400> 7233

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Tyr Tyr Glu Glu Asn Ala Met Ile Lys Arg Ile Leu Leu Leu Ala Ile
1           5           10           15
Val Ile Gly Gly Gly Met Thr Thr Val Ala Gln Asn Ser Ile Asp Thr
          20           25           30
Leu Phe Met Ser Val Ser Gln Arg Leu Ser Gly His Pro Ser Glu Leu
          35           40           45
Ile Tyr Leu Gln Thr Gly Lys Asp Ile Tyr Glu Thr Gly Glu Asp Leu
          50           55           60
Trp Phe Lys Ala Tyr Gln Leu Asp Ala Lys Ser Phe Ala Leu Ser Glu
65           70           75           80
Gln Ser Glu Thr Leu Tyr Leu Gln Met Leu Asn Asp Lys Asp Ser Val
          85           90           95
Val Trp Ala Glu Lys Tyr Pro Ile Glu Lys Gly Ile Ala Glu Gly His
          100          105          110
Val Tyr Ile Asp Thr Lys Leu Ser Glu Gly Asn Tyr Arg Leu Gly Thr
          115          120          125
Tyr Thr Arg His Ser Tyr Tyr Asn Asp Thr Thr Gly Ile Ser Pro Glu
          130          135          140
Arg Lys Ile Arg Ile Val Arg Asn Ile Ala Leu Asp Ser Leu Pro Glu
145          150          155          160
His Arg Glu Lys Pro Gly Glu Phe Arg Phe Asn Leu Phe Pro Glu Gly
          165          170          175
Gly Asn Leu Val Ser Gly Leu Pro Phe Arg Leu Ala Phe Lys Ala Thr
          180          185          190
Gly Ser Gly Gly Cys Pro Val Asp Val Glu Gly Thr Leu Tyr Gln Asp
          195          200          205
Glu Ile Pro Val Leu Ser Phe Lys Ser Ser His Asp Gly Met Gly Val
          210          215          220
Ile Pro Phe Thr Pro Ser Ser Gly Lys Glu Tyr Arg Ile Glu Leu Ala
225          230          235          240
Asn Gly Tyr Ser Tyr Ala Leu Pro Glu Ile Tyr Arg Gln Gly Met Gly
          245          250          255
Leu Arg Leu Ser Gly Arg Asp Gly Lys Gln Leu Glu Phe Leu Ile Ser
          260          265          270
Gln Thr Glu Gly Leu Ser Asp Gln Glu Val Tyr Leu Val Gly Gln Ile
          275          280          285
Arg Gly Thr Val Cys Cys Val Ala Lys Gly Leu Leu Lys Asp Arg Leu
290          295          300

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Lys Met Lys Ile Pro Leu Ser Glu Phe Pro Tyr Gln Gly Ile Ala Glu
 305 310 315 320
 Phe Thr Leu Phe Asn Ala Ala Met Gln Pro Val Ala Glu Arg Leu Val
 325 330 335
 Tyr Val His Pro Glu Lys Lys Leu His Ile Asp Ile Val Thr Glu Lys
 340 345 350
 Glu Ser Tyr Val Leu Arg Glu Lys Ala Ala Leu Lys Val Lys Val Thr
 355 360 365
 Asp Asp Asn Gly Gln Pro Val Lys Ala Asp Leu Gly Ile Ser Val Phe
 370 375 380
 Asp Lys Ala Tyr Ser Asn Pro Asp Asp Arg Val Asn Met Leu Ala Tyr
 385 390 395 400
 Cys Tyr Leu Ser Ser Gln Ile Arg Gly Ala Val Cys Arg Pro Ala Tyr
 405 410 415
 Tyr Phe Asp Glu Lys Asn Ala Asp Arg Met Gln Ala Met Asp Leu Leu
 420 425 430
 Leu Leu Thr Gln Gly Trp Arg Arg Tyr Val Trp Glu Leu Asn Gly Ala
 435 440 445
 Val Arg His Gly Glu Met Phe Leu Arg Asp Asp Val Thr Gly Ile Gln
 450 455 460
 Thr Leu Gly Ser Lys Lys Lys Ser Lys Gly Thr Gly Gly Ala Lys Gln
 465 470 475 480
 Leu Ile Gln Val Ser Gly Ala Glu Gly Asn Ser Thr Tyr Leu Met Thr
 485 490 495
 Asp Ser Leu Gly Arg Phe Thr Val Asp Thr Asp Leu Met Lys Thr Leu
 500 505 510
 Arg Gly Gly Tyr Val Tyr Leu Lys Pro Met Leu Ser Lys Glu Phe Lys
 515 520 525
 Pro Glu Leu Glu Ile Gln Asp Tyr Phe Pro Ala Ile Asp Ser Ile Arg
 530 535 540
 Arg Lys Lys Ser Phe Asp Cys Ser Leu Ile Asn Cys Thr Gln Arg Pro
 545 550 555 560
 Lys Glu Glu Ile Tyr Asp Ala Pro Val Val Ser Gly Asp Ser Thr Ile
 565 570 575
 Leu Leu Asp Glu Val Val Ile Ala Arg Lys Ala Arg Lys Pro Phe Arg
 580 585 590
 Asp Lys Leu Met Gly Arg Leu Asp Ser Leu Ala Gln Met Asn Leu Asn
 595 600 605
 Ser Val Tyr Val Cys Thr Ser Cys Gly Leu Leu Leu Asn Tyr Asn Pro
 610 615 620
 Asp Tyr Gln Gly His His Ala Leu Val Gly Glu Gly Gly Cys Pro Ala
 625 630 635 640
 Lys Gly Arg Lys Gln Pro Val Asp Gly Glu Thr Tyr Arg Ile Ala Lys
 645 650 655
 Tyr Lys Tyr Tyr Gly Asp Ala Lys Gly Gly Gly Val Tyr Phe Ser Val
 660 665 670
 Val Asp Ala His Ser Val Val Tyr His Ala Ala Glu Phe Thr Glu Glu
 675 680 685
 Glu Leu Leu Arg Met Asn Asn Met Trp Arg Val Lys Gly Tyr Tyr Gly
 690 695 700
 Lys Arg Glu Phe Tyr Gln Pro Asp Glu Ile Asp Met Gln Leu Pro Val
 705 710 715 720
 Pro Asp Ala Arg Asn Thr Leu Leu Trp Ala Pro Ser Val Val Thr Asp
 725 730 735
 Glu Lys Gly Glu Ala Thr Val Ser Phe Tyr Cys Ser Asp Ile Asn Thr
 740 745 750
 Gly Phe Ile Gly Val Ala Glu Gly Val Asp Gly Thr Gly Leu Leu Gly
 755 760 765
 Thr Asp Gln Cys Glu Phe Arg Val Ile Arg Arg Ala Asp

770

775

780

<210> 7234

<211> 262

<212> PRT

<213> B.fragilis

<400> 7234

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Asn His Ile Phe Ser Phe Ile Ala Met Asn Pro Ile Leu Ser Phe Ile
1           5           10           15
Ile Ile Glu Tyr His Ser Phe Asp Asp Ile Val Glu Cys Ile Ala Thr
          20           25           30
Ile Arg Ser Ser Thr Ser Leu Ser Tyr Glu Val Ile Val Ser Ser Asn
          35           40           45
Ser Cys Tyr Leu Leu Glu Val Gln Glu Arg Ile Leu Lys Lys Met Glu
          50           55           60
His Val Lys Trp Val Phe Asn Ser Lys Asn Gly Gly Phe Ala Tyr Ala
65           70           75           80
Met Asn Arg Gly Ile Glu Lys Ala Val Gly Asp Phe Leu Val Ile Met
          85           90           95
Asn Pro Asp Val Arg Ile Lys Tyr Gly Ile Glu Tyr Met Phe Asp Phe
          100          105          110
Leu Tyr Phe Asn Glu Gln Val Gly Ile Val Ser Pro Lys Ile Val Asn
          115          120          125
Ser Leu Gly Glu Val Gln Asp Ser Phe Arg Lys Phe Leu Thr Pro Ser
          130          135          140
Asn Phe Ile Leu Arg Gln Leu Arg Arg Ile Phe Tyr Arg Arg Asn Glu
145          150          155          160
Val Ile Thr Met Thr Lys Leu Glu Asn Val Asp Trp Val Ile Gly Ala
          165          170          175
Phe Met Met Ile Ser Lys Lys Ala Tyr Glu Ala Val Cys Gly Met Asp
          180          185          190
Glu Lys Tyr Phe Leu Tyr Cys Glu Asp Met Asp Leu Cys Lys Lys Ile
          195          200          205
His Asp Lys Gly Tyr Lys Val Ile Tyr Tyr Pro Asp Ala Val Val Val
210          215          220
Tyr Glu Gly Thr Arg Ser Ala Arg Lys Ser Leu Lys Tyr Ala Cys Ile
225          230          235          240
Phe Leu Ser Ser Leu Leu His Tyr Trp Ser Lys Phe Gly Phe Lys Arg
          245          250          255
Leu Thr Ser Val Phe Gly
          260

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<210> 7235

<211> 110

<212> PRT

<213> B.fragilis

<400> 7235

```

Asn Lys Thr Arg Phe Lys Ser Lys Lys Ile Met Thr Glu Asn Tyr Glu
1           5           10           15
Leu Ile Asp Asn Glu Glu Lys His Gln Tyr Glu Phe His Val Glu Gly
          20           25           30
Tyr Val Pro Arg Ile Glu Tyr Ile Lys Ser Leu Asn Gly Glu Ile Tyr
          35           40           45
Leu Thr His Thr Glu Val Pro Ala Ala Leu Gly Gly His Gly Ile Gly
          50           55           60
Ser Gln Leu Ala Glu Lys Val Leu Thr Asp Ile Glu Arg Gln Gly Leu
65           70           75           80

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<210> 7236
<211> 318
<212> PRT
<213> B.fragilis
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Ile	Lys	Thr	Met	Asn	Ile	Leu	His	Asp	Thr	Cys	Arg	Leu	Val	Phe	Val
1				5					10					15	
Tyr	Leu	Gly	Arg	Leu	Pro	Glu	Tyr	Val	Ile	Tyr	Ser	Leu	Lys	Ile	Asn
			20					25					30		
Ser	Lys	Tyr	Asn	Arg	Ile	Thr	Leu	Leu	His	Asp	Cys	Glu	Ile	Gln	Asn
			35				40					45			
His	Val	Ala	Asn	Val	Glu	Tyr	Ile	Asn	Ile	Asp	Asp	Phe	Tyr	Asp	Arg
	50					55				60					
Arg	Gln	Phe	Val	Asn	Leu	Ile	Ala	Glu	Ser	Pro	Leu	Lys	Asn	Phe	Arg
65				70						75				80	
Asp	Gly	Phe	Trp	Tyr	Lys	Thr	Thr	Glu	Arg	Phe	Tyr	Val	Leu	Arg	Ser
				85					90				95		
Tyr	Met	Asp	His	Tyr	Asn	Val	His	Ala	Ile	Phe	His	Ala	Glu	Leu	Asp
			100					105					110		
Asn	Ile	Val	Tyr	Asn	Leu	Glu	Gly	Val	Ser	Ile	Ser	Leu	Asp	Lys	Ile
			115				120					125			
Gly	Asn	Gly	Leu	Phe	Tyr	Pro	Ile	Leu	Asn	Asn	Lys	Lys	Ala	Ala	Ala
	130					135					140				
Ser	Phe	Met	Tyr	Ile	Asn	Ser	Phe	Ser	Glu	Leu	Asp	Ala	Leu	Ile	Gly
145					150					155				160	
Tyr	Phe	Asn	Glu	Gln	Lys	Thr	Phe	Lys	Asp	Asp	Met	Gln	Leu	Leu	Ala
				165					170					175	
Glu	Tyr	Ala	Ser	Ala	Ser	Val	Asn	Val	Phe	Pro	Leu	Pro	Ser	Glu	Asn
			180					185					190		
Ser	Leu	Cys	Lys	Met	Pro	Val	Ser	Asn	Glu	Val	Gln	Cys	Ile	Tyr	Asp
			195				200					205			
Ala	Ala	Ser	Ile	Gly	Gln	Tyr	Leu	Leu	Gly	Ile	Asp	Phe	Arg	Asn	Ala
	210					215					220				
Ser	Arg	Pro	Ile	Phe	Asn	Gly	Phe	Gln	Asn	Glu	Asn	Cys	Ile	Ile	Asp
225					230					235				240	
Leu	Ser	Gln	Leu	Lys	Phe	Ile	Gln	Asp	Gly	Asp	Lys	Gly	Ile	Leu	Met
				245					250					255	
Phe	Tyr	Asp	Gln	Ala	Ile	Tyr	Leu	Leu	Lys	Asn	Ile	His	Val	His	Ser
			260					265					270		
Lys	Val	Phe	Lys	Arg	Met	Tyr	Leu	Ser	Glu	Ser	Tyr	Val	Pro	Arg	Ile
			275				280					285			
Met	Lys	Lys	Ile	Asn	Gly	Gly	Lys	Lys	Ser	Leu	Met	Ser	Leu	Asn	Phe
	290					295					300				
Lys	Asn	Met	Ile	Lys	Leu	Phe	Leu	Asp	Lys	Ser	Lys	Leu	Leu		
305					310					315					

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<210> 7237
<211> 61
<212> PRT
<213> B.fragilis
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Asn Val Ile Ile Phe Lys Asn Asn Ile Val Phe Ser Asn Ile Ser Arg

1	5	10	15
Thr Lys Thr Ile Ser Tyr Lys Lys Thr Ile Ser Leu Glu Tyr Tyr Asn			
	20	25	30
Ser Arg Tyr Leu Tyr Asn Lys Lys Ile Asn Thr Lys Arg Lys Asp Phe			
	35	40	45
Arg Lys Met Leu Phe Ile Arg Lys Ser Asn Thr Arg Ser			
	50	55	60

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 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 7238
Glu Leu Ile Ile Met Leu Tyr Ser Lys Val Ser Ile Ile Thr Ala Ser
1 5 10 15
Tyr Asn Ser Glu Ala Thr Leu Glu Ala Thr Ile Glu Ser Val Tyr Asn
20 25 30
Gln Thr Tyr Gln Asp Ile Glu Tyr Ile Ile Ile Asp Gly Gly Ser Ser
35 40 45
Asp Lys Thr Val Ser Ile Ile Gln Lys Phe Glu Pro Leu Phe Ser Gly
50 55 60
Arg Leu Lys Trp Ile Ser Glu Pro Asp Lys Gly Ile Tyr Asp Ala Trp
65 70 75 80
Asn Lys Gly Leu Glu Ile Ala Thr Gly Glu Trp Ile Ala Phe Leu Gly
85 90 95
Ser Asp Asp Ile Tyr Leu Pro Asp Ser Ile His Lys Tyr Met Asn Val
100 105 110
Leu Ile Ser Lys Lys Cys Val Asn Phe Ile Ser Ser Lys Cys Lys Leu
115 120 125
Val Asn Ser Glu Leu Lys Thr Leu Met Ile Tyr Gly Lys Pro Trp Gly
130 135 140
Lys Leu Met Asn Ser Tyr Cys Cys Ile Ala His Val Gly Cys Met His
145 150 155 160
Lys Arg Cys Leu Phe Asp Asn Tyr Gly Ser Phe Asn Ser Asp Tyr Lys
165 170 175
Ile Ala Gly Asp Tyr Asp Phe Leu Leu Arg Val Lys Asp Val Ile Ile
180 185 190
Pro Tyr Tyr Leu Pro Glu Ile Thr Ala Ile Val Gln Asp Gly Gly Ile
195 200 205
Ser Asn Arg Asn Ile Leu Lys Val Cys Gly Glu Thr Leu Lys Ile Lys
210 215 220
Val Ser His Lys Thr Lys Asn Leu Tyr Phe Ser Leu Trp Asp Tyr Cys
225 230 235 240
Val Ala Val Phe Lys Tyr Tyr Val Arg Ser Phe Met Ile Lys
245 250

<210> 7239
 <211> 526
 <212> PRT
 <213> B.fragilis

<400> 7239
Ile Ser Lys Ile Met Lys Arg Pro Tyr Leu Leu Leu Ala Cys Leu Ser
1 5 10 15
Pro Val Ala Cys Leu Met Ala Ala Ser Gly Gln Lys Gly Gly Lys Asn
20 25 30
Lys Gln Lys Val Asn Asp Arg Gln Leu Pro Asn Val Val Phe Ile Tyr
35 40 45

515

520

525

<210> 7240
 <211> 299
 <212> PRT
 <213> B.fragilis

<400> 7240

Ile	Lys	Lys	Met	Glu	Ile	Asp	Leu	Val	Phe	Val	Thr	Lys	Ile	Asp	His
1				5					10					15	
Leu	Tyr	Val	Leu	Asn	Leu	Ala	Leu	Lys	Lys	Met	Val	Met	Leu	Asn	Asp
			20					25					30		
Ile	Arg	Ser	Val	Phe	Ile	Ile	Thr	Asn	Lys	Lys	Tyr	Phe	Lys	Tyr	Phe
	35						40					45			
Pro	Val	Arg	Lys	Asp	Ile	Lys	Ile	Asn	Leu	Ile	Asp	Glu	Asp	Ser	Val
	50					55					60				
Leu	Pro	Asp	Met	Thr	Leu	Asn	Gln	Leu	Ser	Lys	Leu	Ser	Leu	Pro	Phe
65					70					75				80	
Phe	Pro	Lys	Arg	Ser	Gly	Trp	Tyr	Phe	Gln	Gln	Phe	Leu	Lys	Leu	Gly
				85				90					95		
Ile	Ser	Lys	Leu	Asp	Asp	Leu	Ser	Glu	Asn	Tyr	Leu	Val	Leu	Asp	Ala
	100						105						110		
Asp	Thr	Ile	Phe	Leu	Gln	Arg	Ile	Pro	Leu	Phe	Asp	Asn	Gly	Arg	Phe
	115						120					125			
Val	Phe	Thr	Lys	Ala	Gln	Glu	Tyr	His	Lys	Pro	Tyr	Phe	Glu	Asn	Tyr
	130					135					140				
Ile	Asn	Leu	Leu	Lys	Glu	Ser	Pro	Ser	Arg	Glu	Phe	Ser	Phe	Ile	Ser
145					150					155				160	
Gln	Tyr	Met	Leu	Phe	Asn	Lys	Asn	Ile	Val	Thr	Glu	Met	Leu	Asn	Lys
				165				170					175		
Ile	Glu	Ser	Asn	Phe	Asn	Phe	Glu	Asn	His	Trp	Asn	Trp	Ile	Ile	Ile
			180					185					190		
Asn	Asn	Leu	Leu	Gly	Asp	Asp	Ala	Ser	Leu	Phe	Ser	Glu	Tyr	Glu	Thr
	195						200					205			
Tyr	Gly	Asn	Tyr	Ile	Lys	Asn	His	Tyr	Pro	Glu	Lys	Val	Cys	Phe	Leu
	210					215					220				
Asp	Leu	Lys	Trp	Leu	Arg	Glu	Gly	Ser	Lys	Val	Leu	Gly	Ser	Leu	Phe
225					230					235				240	
Pro	Lys	Ile	Glu	Asp	Ile	Glu	Lys	Leu	His	Gly	Tyr	Tyr	Phe	Val	Ser
				245					250				255		
Phe	Glu	Leu	Asn	Thr	Val	Gly	Ala	Ser	Phe	Phe	Thr	Lys	Val	Lys	Lys
			260					265					270		
His	Leu	Phe	Cys	Phe	Leu	Tyr	Pro	Arg	Phe	Ser	Phe	Leu	Lys	Arg	Ile
	275						280					285			
Ile	Tyr	Lys	Val	Leu	Pro	Tyr	Glu	Ile	Asn	Asn					
	290					295									

<210> 7241
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 7241

Thr	Leu	Glu	Ile	Met	Asn	Arg	Arg	Val	Ile	Gln	Ile	Phe	Cys	Met	Val
1				5					10				15		
Val	Gly	Met	Val	Leu	Ala	Ser	Ser	Cys	Gly	Asp	Glu	Cys	Pro	Val	Glu
			20					25					30		
Gln	Pro	Tyr	Ser	Val	Arg	Val	Ser	Val	Lys	Asp	Lys	Asn	Tyr	Leu	Asn
	35						40					45			

Ile Ser Gln Phe Pro Gln Leu Ser Pro Val Asp Glu Asn Leu Pro Phe
 50 55 60
 Arg Thr Tyr Ala Gly Thr Leu Tyr Tyr Ala Leu Tyr Asp Ala Ser Thr
 65 70 75 80
 Gly Ala Leu Ile Arg Glu Ser Ala Val Val Ser Thr Glu Gly Glu Glu
 85 90 95
 Lys Glu Tyr Thr Leu Thr Phe Pro Gly Val Pro Asp Gly Asp Tyr Lys
 100 105 110
 Leu Ala Val Trp Gly Asn Leu Thr Thr Asp Tyr Pro Ala Gly Ile Leu
 115 120 125
 His Gln Asp Gly Lys Glu His Thr Asp Ile Tyr Val Thr Ser Gly Asp
 130 135 140
 Leu His Phe Ser Pro Asp Tyr Gln Thr Glu Glu Leu Thr Leu Glu Arg
 145 150 155 160
 Thr Lys Gly Lys Leu Leu Leu Leu Cys Ser Asn Phe Pro Ser Glu Ile
 165 170 175
 Thr Arg Ile Glu Gln Asn Val Ser His Val Tyr Gln Ser Thr Asp Ala
 180 185 190
 Ala Leu Asn Tyr Ser Gly Ser Thr Gln Val Asp Lys Asn Val Pro Phe
 195 200 205
 Thr Ser Val Leu Glu Thr Leu Leu Ala Pro Thr Ser Ala Glu Gly His
 210 215 220
 Ser Lys Leu Thr Leu Thr Phe Tyr Thr Gly Gly Thr Arg Ala Ser Glu
 225 230 235 240
 Thr Pro Tyr Leu Lys Leu Pro Val Met Glu Met Asp Met Arg Arg Asn
 245 250 255
 Glu Ile Thr Ala Val Ser Ile Asp Tyr Asn Thr Ser Glu Gly Ile Trp
 260 265 270
 Glu Ile Lys Met Phe Ile Arg Gly Glu Trp Ile Thr Ile His Arg Leu
 275 280 285
 Asp Ile Phe
 290

<210> 7242
 <211> 123
 <212> PRT
 <213> B.fragilis

<400> 7242
 Val His Asn Leu Gln Arg Lys Phe Ser Leu Thr Leu Asn Gly Arg Asp
 1 5 10 15
 Cys Ala Trp Phe Leu Ser Val Arg Ser Leu Arg Asp Ile Tyr Ile Ser
 20 25 30
 Ile Arg Asn Gly Ser Val Leu Tyr Phe Val Val Phe Thr Phe Asn Asn
 35 40 45
 Ile Lys Thr Val Met Gly Lys Gln Ile Glu Tyr Ser Asn Gly Glu Leu
 50 55 60
 Thr Ile Val Trp Gln Pro Glu Leu Cys Arg His Ala Gly Ile Cys Val
 65 70 75 80
 Lys Thr Leu Pro Asn Val Tyr His Pro Lys Glu Arg Pro Trp Ile Lys
 85 90 95
 Met Glu Asn Ala Thr Thr Glu Glu Leu Ile Ala Gln Ile Lys Met Cys
 100 105 110
 Pro Ser Gly Ala Leu Ser Tyr Lys Leu Lys Lys
 115 120

<210> 7243
 <211> 68
 <212> PRT

<400> 7243

<210> 7244

<211> 527

<212> PRT

<213> B.fragilis

<400> 7244

Glu 1	Ile	Glu	Val	Thr 5	Ser	Glu	Leu	Val	Val 10	Asp	Val	Gln	Pro	Lys 15	Glu
Val	Ser	Ile	Ala 20	Leu	Leu	Glu	Asp	Lys 25	Ser	Leu	Val	Glu	Leu 30	Gln	Ser
Glu	Gly	Arg	Asn 35	Ile	Ser	Phe	Ser	Val 40	Gly	Asn	Met	Tyr	Leu 45	Gly	Arg
Val	Lys 50	Lys	Leu	Met	Pro	Gly 55	Leu	Asn	Ala	Cys	Phe	Val	Asp	Val	Gly
Tyr 65	Glu	Lys	Asp	Ala	Phe 70	Leu	His	Tyr	Leu	Asp	Leu	Gly	Pro	Gln	Phe 80
Asn	Ser	Leu	Glu	Lys 85	Tyr	Val	Lys	Gln	Thr 90	Leu	Ser	Asp	Lys	Lys 95	Lys
Leu	Asn	Pro	Ile 100	Ser	Lys	Ala	Thr	Leu	Leu 105	Pro	Asp	Leu	Asp	Lys	Asp
Gly	Thr	Val	Ala 115	Asn	Thr	Leu	Lys	Val	Gly	Gln	Glu	Val	Val	Val	Gln
Ile	Val 130	Lys	Glu	Pro	Ile	Ser	Thr	Lys	Gly	Pro	Arg	Leu	Thr	Ser	Glu
Ile 145	Ser	Phe	Ala	Gly	Arg	Tyr	Leu	Val	Leu	Ile	Pro	Phe	Asn	Asp	Lys 160
Val	Ser	Val	Ser	Gln	Lys	Ile	Lys	Ser	Ser 170	Glu	Glu	Arg	Ala	Arg	Leu
Lys	Gln	Leu	Leu 180	Met	Ser	Ile	Lys	Pro	Lys 185	Asn	Phe	Gly	Val	Ile	Val
Arg	Thr	Val 195	Ala	Glu	Gly	Lys	Arg	Val	Ala	Glu	Leu	Asp	Gly	Glu	Leu
Lys	Val 210	Leu	Leu	Lys	His	Trp	Glu	Glu	Ser	Ile	Thr	Lys	Val	Gln	Lys
Ala 225	Thr	Lys	Phe	Pro	Thr	Leu	Ile	Tyr	Glu	Glu	Thr	Ser	Arg	Ala	Val
Ala	Leu	Leu	Arg	Asp	Leu	Phe	Asn	Pro	Ser 250	Phe	Glu	Asn	Ile	Tyr	Val
Asn	Asn	Glu	Ala 260	Val	Phe	Asn	Glu	Ile	Arg	Asp	Tyr	Val	Thr	Leu	Ile
Ala	Pro	Glu	Arg	Ala	Gly	Ile	Val	Lys	Leu	Tyr	Lys	Gly	Gln	Leu	Pro
Ile	Tyr 290	Asp	Asn	Phe	Gly	Ile	Thr	Lys	Gln	Ile	Lys	Ser	Ser	Phe	Gly
Lys	Thr	Val	Ser	Tyr	Lys	Ser	Gly	Ala	Tyr	Leu	Ile	Ile	Glu	His	Thr

305 310 315 320
 Glu Ala Leu His Val Val Asp Val Asn Ser Gly Asn Arg Thr Lys Asn
 325 330 335
 Ala Asn Gly Gln Glu Gly Asn Ala Leu Glu Val Asn Leu Gly Ala Ala
 340 345 350
 Asp Glu Leu Ala Arg Gln Leu Arg Leu Arg Asp Met Gly Gly Ile Ile
 355 360 365
 Val Val Asp Phe Ile Asp Met Asn Glu Ala Glu Asn Arg Gln Lys Leu
 370 375 380
 Tyr Glu Arg Met Cys Ala Asn Met Gln Lys Asp Arg Ala Arg His Asn
 385 390 395 400
 Ile Leu Pro Leu Ser Lys Phe Gly Leu Met Gln Ile Thr Arg Gln Arg
 405 410 415
 Val Arg Pro Ala Met Asp Val Asn Thr Thr Glu Thr Cys Pro Thr Cys
 420 425 430
 Phe Gly Lys Gly Thr Ile Lys Ser Ser Ile Leu Phe Thr Asp Thr Leu
 435 440 445
 Glu Ser Lys Ile Asp Tyr Leu Val Asn Lys Leu Lys Ile Lys Lys Phe
 450 455 460
 Ser Leu His Ile His Pro Tyr Val Ala Ala Tyr Leu Asn Gln Gly Leu
 465 470 475 480
 Met Ser Leu Lys Arg Lys Trp Gln Met Lys Tyr Gly Phe Gly Ile Lys
 485 490 495
 Ile Ile Pro Ser Gln Lys Leu Ala Phe Leu Glu Tyr Val Phe Tyr Asp
 500 505 510
 Ser His Gly Glu Glu Ile Asp Met Lys Glu Glu Phe Glu Ile Lys
 515 520 525

<210> 7245

<211> 207

<212> PRT

<213> B.fragilis

<400> 7245

Ile Asn Asn Ser Glu Ser Met Arg Tyr Leu Leu Met Asn Tyr Gly Val
 1 5 10 15
 Leu Gly Val Ile Arg Leu Ala Leu Asp Phe Ile Gly Thr Lys Ile Ala
 20 25 30
 Phe Arg Lys Ser Arg Leu Ile Arg Phe Pro Ile Asp Ile Arg Gly Arg
 35 40 45
 Ser Phe Ile Asp Phe Gly Ser Asn Leu Thr Thr Gly Arg Tyr Cys Arg
 50 55 60
 Leu Glu Val Tyr Pro Ile Glu His Lys Lys Gly Ile Leu Lys Ile Gly
 65 70 75 80
 Asp Asn Val Glu Ile Asn Asp Phe Val His Ile Ala Ala Arg Leu Ser
 85 90 95
 Val Gln Ile Gly Asn Asn Val Leu Ile Ala Ser Lys Val Phe Ile Ser
 100 105 110
 Asp Ile Gln His Gly Cys Tyr Asn Ser Asn Lys Met Phe Asn Asp Cys
 115 120 125
 Tyr Pro Asp Ile Pro Pro Lys Glu Arg Ser Leu Phe Ala Glu Ser Val
 130 135 140
 Phe Val Gly Asp Asn Val Trp Ile Gly Glu Ser Val Ser Ile Leu Ala
 145 150 155 160
 Gly Val Lys Ile Gly Asp Phe Ser Ile Ile Gly Ala Asn Ser Val Val
 165 170 175
 Cys Lys Ser Ile Pro Ser Tyr Ser Ile Ala Val Gly Asn Pro Ala Thr
 180 185 190
 Val Ile Lys Lys Phe Asn Lys Thr Thr Asn Lys Trp Glu Lys Val

195

200

205

<210> 7246
 <211> 335
 <212> PRT
 <213> B.fragilis

<400> 7246

Ile	Arg	Leu	Ser	Asp	Tyr	Leu	His	Asn	Leu	Tyr	Leu	Lys	Lys	Ile	Cys
1			5					10						15	
Lys	Leu	Lys	Thr	Arg	Asn	Lys	Met	Asn	Glu	Thr	Leu	Thr	Val	Phe	Met
			20					25					30		
Ile	Ser	Glu	Ile	Glu	Arg	Leu	Arg	Glu	Glu	Gly	Arg	Glu	Pro	Ala	Arg
	35						40					45			
Arg	Ile	Tyr	His	Asn	Met	Leu	Arg	Thr	Leu	Arg	Glu	Ser	Ala	Gly	Lys
	50					55					60				
Glu	Glu	Ile	Gly	Phe	Glu	Glu	Val	Thr	Pro	Val	Phe	Leu	Gly	Lys	Tyr
65					70				75					80	
Glu	His	Trp	Leu	Leu	Gly	Lys	Arg	Leu	Ser	Trp	Asn	Thr	Val	Ser	Thr
			85					90					95		
Tyr	Met	Arg	Ala	Leu	Arg	Ala	Gly	Tyr	Asn	Arg	Gly	Met	Lys	Gly	Arg
			100					105					110		
Pro	Gly	Tyr	Val	Thr	Gly	Leu	Phe	Asp	Lys	Val	Tyr	Thr	Gly	Thr	Arg
	115						120					125			
Ser	Asp	Val	Lys	Arg	Ala	Val	Asp	Ala	Arg	Thr	Val	Gly	Arg	Met	Ile
	130					135					140				
Arg	Met	Ser	Gly	Cys	Pro	Asp	Glu	Ser	Ala	Ser	Ala	Lys	Ala	Val	Asp
145					150				155					160	
Trp	Phe	Val	Leu	Met	Phe	Met	Leu	Arg	Gly	Ile	Pro	Phe	Val	Asp	Leu
			165					170						175	
Ala	His	Leu	Arg	Arg	Ser	Asn	Leu	Asp	Lys	Gly	Val	Leu	Thr	Tyr	Cys
			180					185					190		
Arg	His	Lys	Thr	Gly	Gln	Glu	Val	Ser	Ile	Ser	Val	Pro	Arg	Glu	Ala
	195					200					205				
Met	Glu	Ile	Ile	Asn	Arg	Arg	Met	Val	Glu	Asn	Cys	His	Pro	Ser	Tyr
	210					215					220				
Leu	Leu	Pro	Ile	Leu	Gly	Gln	Pro	Arg	Thr	Arg	Lys	Arg	His	Thr	Lys
225					230				235					240	
Lys	Ala	Leu	Thr	Pro	Tyr	Gln	Glu	Tyr	Gln	Tyr	Ala	Leu	Arg	Asn	Leu
			245					250						255	
Asn	Arg	Arg	Leu	Glu	Arg	Val	Ser	Val	Asp	Leu	Arg	Leu	Gly	Gly	Arg
			260					265					270		
Leu	Ser	Ser	Tyr	Thr	Ala	Arg	His	Thr	Trp	Ala	Thr	Ile	Ala	Phe	His
	275						280					285			
Gln	Glu	Thr	Pro	Val	Gly	Val	Ile	Ser	Arg	Gly	Leu	Gly	His	Ser	Ser
	290					295					300				
Val	Lys	Val	Thr	Glu	Thr	Tyr	Leu	Lys	Pro	Phe	Gly	Asp	Arg	Glu	Val
305					310				315					320	
Asp	Arg	Thr	Asn	Arg	Lys	Ile	Leu	Asn	Tyr	Val	Leu	Asn	Ala	Val	
			325					330					335		

<210> 7247
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 <212> PRT
 <213> B.fragilis

<400> 7247

Leu	Gln	Cys	Pro	Met	Asp	Thr	Pro	Ile	Asn	Ala	Pro	Leu	Arg	Lys	Leu
1				5					10					15	

Pro Ile Gly Ile Gln Ser Phe Glu Lys Leu Arg Ser Glu Asn Phe Leu
 20 25 30
 Tyr Val Asp Lys Thr Ala Leu Ile Tyr Arg Leu Ala Gln Ala Gly Asn
 35 40 45
 Pro Cys Phe Leu Ser Arg Pro Arg Arg Phe Gly Lys Ser Leu Leu Leu
 50 55 60
 Ser Ser Phe Glu Ala Tyr Phe Gln Gly Lys Lys Glu Leu Phe Arg Gly
 65 70 75 80
 Leu Ala Ile Glu Lys Leu Glu Lys Glu Trp Leu Gln Tyr Pro Val Leu
 85 90 95
 His Leu Ser Leu Asn Ala Glu Lys Tyr Asp Ser Arg Glu Gly Leu Ile
 100 105 110
 Asp Ile Leu Glu Arg Gln Leu Arg Gln Trp Glu Glu Leu Tyr Arg Thr
 115 120 125
 Gly Arg Glu Gly Ile Thr His Ser Gly Arg Phe Met Thr Val Ile Arg
 130 135 140
 Arg Ala Cys Glu Gln Thr Gly Arg Arg Val Val Val Leu Ile Asp Glu
 145 150 155 160
 Tyr Asp Lys Pro Leu Leu Arg Ser Phe Asp Ser Gln Glu Leu Gln His
 165 170 175
 Asp Phe Arg Glu Thr Leu Thr Ala Phe Tyr Thr Val Leu Lys Asp Ala
 180 185 190
 Asp Pro Trp Leu Gln Phe Val Phe Ile Thr Gly Val Thr Lys Phe Ala
 195 200 205
 Gln Met Gly Ile Phe Ser Asn Leu Asn Gln Leu Asn Asp Ile Ser Phe
 210 215 220
 Asp Leu Asp Tyr Asn Thr Leu Cys Gly Met Thr Arg Ala Glu Ile Glu
 225 230 235 240
 Ala Thr Phe Ser Pro Glu Leu Glu Ala Leu Ala Val Lys Ser Asn Ala
 245 250 255
 Thr Cys Arg Gln Val Met Asp Arg Leu Thr Arg Gln Tyr Asp Gly Tyr
 260 265 270
 Arg Phe Thr Lys Asp Glu Glu Phe Thr Ser Met Tyr Asn Pro Phe Ser
 275 280 285
 Val Leu Ser Ala Leu Gln Lys Arg Ser Tyr Gly Asn Tyr Trp Phe Ala
 290 295 300
 Ser Gly Thr Pro Thr Phe Leu Val Glu Met Leu Gln Lys Thr Asp Phe
 305 310 315 320
 Asp Leu Arg Glu Met Glu Gly Ile Glu Val Asn Glu Ala Ser Leu Ser
 325 330 335
 Asp Asp Arg Ala Asp Ile Asn Asn Pro Ile Pro Met Ile Tyr Gln Ser
 340 345 350
 Gly Tyr Leu Thr Ile Lys Asp Tyr Asp Glu Arg Phe Arg Met Tyr Thr
 355 360 365
 Leu Gly Phe Pro Asn Glu Glu Val Lys Tyr Gly Phe Leu Asn Phe Val
 370 375 380
 Ser Pro Phe Tyr Thr Pro Ile Ala Gln Thr Asp Thr Ser Phe Tyr Ile
 385 390 395 400
 Gly Lys Phe Ile Arg Glu Leu Glu Ser Gly Asp Val Asp Ala Phe Leu
 405 410 415
 Thr Arg Leu Arg Cys Phe Phe Ala Gly Ile Pro Tyr Asp Leu Asn Asp
 420 425 430
 Arg Thr Glu Arg His Tyr Gln Thr Val Phe Tyr Leu Val Phe Gln Leu
 435 440 445
 Met Gly Gln Phe Thr Glu Thr Glu Val Arg Ser Ala Arg Gly Arg Ala
 450 455 460
 Asp Ala Val Val Lys Thr Pro Asp Tyr Ile Tyr Val Phe Glu Phe Lys
 465 470 475 480
 Leu Asn Asp Ser Ala Glu Ala Ala Leu Arg Gln Ile Asp Glu Lys Gly

485 490 495
 Tyr Leu Leu Pro Tyr Gln Ala Asp Gly Arg Lys Val Val Lys Val Gly
 500 505 510
 Val Ala Phe Glu Lys Glu Glu Arg Asn Ile Gly Glu Trp Met Ile Gly
 515 520 525
 Gly

<210> 7248
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 7248
 Thr Arg Ser Ala Ala Pro Gly Ile Leu Arg Asn Leu Pro Arg Ile Leu
 1 5 10 15
 Lys Ser Met Tyr Val Ala Val Trp Ala Pro Ala Arg His Arg His Arg
 20 25 30
 Ser Gly Thr Trp Pro Phe Thr Asp Asn Arg Tyr Leu Asp Pro Gly Gly
 35 40 45
 Ile Phe Gly Ser Thr Thr Arg Lys Ile Gln Lys Lys Met Leu Ser Leu
 50 55 60
 Tyr Leu Arg Val
 65

<210> 7249
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7249
 Arg Leu His Glu Gln Glu Glu Thr Val Lys Lys Asp Ile Arg Val Leu
 1 5 10 15
 Arg Tyr Leu Ile Ala Lys Glu Glu Glu Ala Ala Ser Pro Gln Ala Pro
 20 25 30
 Arg Lys Arg Lys Ile Pro Gln Lys Gln Ile Asn Asp Phe Phe Thr Arg
 35 40 45
 Ile Ala Leu Phe Tyr Glu Asp Leu Gln Arg Arg Leu Asn Leu Arg Ile
 50 55 60
 Thr Tyr Arg Cys Phe Cys Arg Trp Leu Cys Thr Arg Tyr Glu Phe Glu
 65 70 75 80
 Ser Arg Tyr His Asp Arg His Lys Leu Ser Pro Cys Thr Ile Leu Gly
 85 90 95
 Tyr Phe Lys Arg Glu Arg Gly Gly
 100

<210> 7250
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 7250
 His Cys Ala Arg Val Gly Ser Phe Gln Pro Arg Gly Glu Asp Ile Arg
 1 5 10 15
 Phe Asp Trp Ala Val Lys Arg Leu Leu Arg Asn Lys Ala Asn Phe Gly
 20 25 30
 Val Leu Glu Gly Phe Leu Thr Val Leu Leu Gly Glu Pro Ile Arg Ile
 35 40 45
 Val Glu Ile Leu Glu Ser Glu Gly Asn Gln Leu Asn Glu Thr Asp Lys

50 55 60
 Phe Asn Arg Val Asp Ile Lys Ala Arg Asn Ser Lys Asp Glu Ile Ile
 65 70 75 80
 Ile Val Glu Val Gln Asn Thr Arg Glu Ile Tyr Tyr Leu Glu Arg Ile
 85 90 95
 Leu Phe Gly Val Ala Lys Ala Ile Thr Glu His Ile Glu Leu Gly Gln
 100 105 110
 Leu Tyr Ser Glu Val Lys Lys Val Tyr Ser Ile Ser Ile Leu Tyr Phe
 115 120 125
 Asp Ile Gly Arg Gly Thr Asp Tyr Leu Tyr His Gly Gln Asn Ser Phe
 130 135 140
 Val Gly Val His Thr Gly Asp Phe Leu Glu Val Ser Thr Lys Glu Lys
 145 150 155 160
 Asp Ala Ile Val Arg Lys Leu Pro Ala Glu Ile Phe Pro Glu Tyr Phe
 165 170 175
 Leu Ile Arg Val Asn Glu Phe Asn Lys Val Ala Val Thr Pro Leu Glu
 180 185 190
 Glu Trp Ile Glu Tyr Leu Lys Thr Gly Val Ile His Pro Asp Thr Lys
 195 200 205
 Ala Pro Gly Leu Glu Glu Ala Arg Arg Lys Leu Val Tyr Tyr Asn Met
 210 215 220
 Asn Lys Ala Glu Gln Leu Ala Tyr Asp Glu His Ile Asn Ala Ile Met
 225 230 235 240
 Ile Gln Asn Asp Val Leu Ser Thr Ala Ala Met Glu Gly Arg Gln Glu
 245 250 255
 Ser Leu Ala Glu Gly Arg Gln Gly Gly Leu Ala Glu Ser Arg Met Gly
 260 265 270
 Glu Lys Gln Ala Asn Ala Pro Glu Ile Glu Ala Leu Thr Leu Pro Val
 275 280 285
 Glu Thr Ile Cys Gln Val Thr Gly Leu Ser Ala Gly Glu Ile Glu Asn
 290 295 300
 Leu
 305

<210> 7251
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 7251
 Ile Arg Val Val Ser Leu Val Val Gln His Val Lys Tyr Arg Arg Lys
 1 5 10 15
 Cys Tyr Leu Cys Ile Tyr Glu Tyr Lys Lys Asn Lys Glu Glu Cys Gln
 20 25 30
 Leu Leu His Pro Leu His Phe Val Thr Lys Cys Glu Asn Leu Lys Asn
 35 40 45
 Asn Cys Val His Leu Gln Lys Thr Asn Phe Asn Ala Pro Trp Ile His
 50 55 60
 Arg Ser Met Pro Arg Leu Glu Asn Ser Arg
 65 70

<210> 7252
 <211> 509
 <212> PRT
 <213> B.fragilis

<400> 7252
 Met Leu Asn Phe Asn Trp Val Lys Met Lys Lys Thr Ile Phe Leu Ser
 1 5 10 15

Thr Ile Ile Leu Leu Leu Thr Ala Cys Gln Asp Tyr Leu Glu Thr Asn
 20 25 30
 Pro Asp Ser Thr Phe Asp Val Gln Ile Asp Ser Glu Asp Lys Ile Ala
 35 40 45
 Glu Leu Leu Ala Gly Ala Tyr Pro Glu Ala Ser Tyr Phe Ala Phe Leu
 50 55 60
 Glu Ala Arg Thr Asp Asn Val Gly Glu Arg Thr Asn Gly Ile His Ser
 65 70 75 80
 Arg Leu Asn Glu Ala Met Tyr Tyr Trp Glu Asp Tyr Asp Gln Glu Asp
 85 90 95
 Leu Asp Thr Pro Leu Asn Tyr Trp Asn Ala Cys Tyr Ala Gly Ile Ala
 100 105 110
 Gln Ala Asn Gln Ala Leu Glu Leu Leu Ser Lys Tyr Pro Lys Ser Asp
 115 120 125
 Arg Val Lys Ala Leu Tyr Gly Glu Ala Phe Leu Leu Arg Ala Tyr Leu
 130 135 140
 His Phe Met Leu Val Asn Ile Trp Ala Glu Pro Tyr Gly Thr Thr Lys
 145 150 155 160
 Ser Ala Thr Ala Pro Gly Ile Pro Tyr Leu Thr Arg Pro Glu Lys Asn
 165 170 175
 Ala Leu Val Asp Tyr Glu Arg Gly Thr Val Lys Glu Val Tyr Glu Lys
 180 185 190
 Ile Glu Lys Asp Leu Lys Leu Gly Leu Ser Leu Val Asn Asp Asp Tyr
 195 200 205
 Tyr Val Lys Pro Lys Phe His Phe Asn Lys Lys Ala Ala Tyr Ala Phe
 210 215 220
 Ala Ser Arg Phe Tyr Leu Ile Lys Gly Glu Trp Asp Leu Val Val Ser
 225 230 235 240
 Tyr Ser Asp Tyr Val Leu Gly Val Asp Pro Lys Pro Val Leu Arg Asn
 245 250 255
 Trp Gln Lys Tyr Lys Lys Glu Phe Asn Ser Asn His Lys Tyr Leu Tyr
 260 265 270
 Ile Arg Tyr Ala Ser Val Asp Glu Pro Ala Asn Leu Leu Leu Thr Thr
 275 280 285
 Thr Glu Ser Arg Val Ala Arg Asn Ile Pro Ser Glu Lys Tyr Gly Val
 290 295 300
 Thr Ile Gln Ser Ala Glu Lys Val Tyr Asn Glu His Gly Ile Asp Gly
 305 310 315 320
 Cys Phe Asn Phe Arg Lys Met Lys Met Gln Ser Phe Phe Leu Phe Asn
 325 330 335
 Tyr Asn Asp Gly Arg Ile Asp Asp Gly Gln Tyr Ile Ala Lys Phe Asp
 340 345 350
 Glu Leu Ser Leu Ser Gly Tyr Thr Gly Ile Arg Pro Arg Gly Leu Tyr
 355 360 365
 Val Thr Asn Val Leu Phe Ser Thr Asp Glu Val Met Leu Asn Arg Met
 370 375 380
 Glu Ala Tyr Thr Met Leu Gly Glu Tyr Asp Lys Ala Ile Asp Asn Leu
 385 390 395 400
 Leu Val Tyr Leu Ser Val Lys Tyr Gly Val Tyr Pro Ser Cys Gly Arg
 405 410 415
 Ser Thr Tyr Thr Gln Thr Ser Ser Glu Asn Tyr Gln Ile Tyr Thr Pro
 420 425 430
 Phe Tyr Gly Met Ser Ile Asn Gln Leu Ala Leu Val Lys Ile Leu Leu
 435 440 445
 Gly Phe Arg Arg Gln Glu Phe Leu His Glu Gly Leu Arg Trp Phe Asp
 450 455 460
 Ile Arg Arg Phe Tyr Ile Ser Val Lys Arg Thr Ser Lys Tyr Lys Phe
 465 470 475 480
 Tyr Arg Pro Leu Glu Lys Glu Asp Ser Arg Lys Leu Leu Gln Ile Pro

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<210> 7253
<211> 362
<212> PRT
<213> B.fragilis
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Ile	Phe	Asp	Phe	Thr	Leu	Arg	Lys	Asn	Met	Lys	Lys	Met	Asn	Tyr	Leu
1				5					10					15	
Leu	Lys	Cys	Leu	Phe	Leu	Ser	Cys	Leu	Leu	Ile	Ser	Val	Val	Ala	Cys
			20					25					30		
Thr	Asp	Gly	Ile	Asn	Glu	Thr	Val	Ile	Ser	Ala	Tyr	Gln	Leu	Pro	Val
		35					40					45			
Leu	Pro	Glu	Pro	Ser	Tyr	Lys	Phe	Ser	Arg	Asn	Gly	Glu	Ser	Ser	Val
	50					55					60				
Asn	Val	Leu	Glu	Cys	Gly	Phe	Leu	Lys	Ser	Pro	Ile	Asp	Arg	Ile	Phe
65				70						75					80
Ser	Glu	Tyr	Met	Asn	Glu	Ala	Arg	Met	Ser	Thr	Lys	Arg	Asp	Tyr	Asp
			85						90					95	
Glu	Ala	Leu	Arg	Ile	Tyr	His	Glu	Gly	Asn	Phe	Gly	Leu	Lys	Pro	Gln
			100					105					110		
Lys	Glu	Val	Ser	Ala	Ser	Ser	Lys	His	Leu	Lys	Asp	Arg	Asp	Lys	Ile
		115					120				125				
Leu	Lys	Asp	Ile	Asp	Ala	Trp	Phe	Glu	Thr	Ser	Ala	Arg	Ile	Ala	Gly
	130					135					140				
Leu	Gly	Ala	Asn	Ile	Pro	Ser	Tyr	Glu	His	Arg	Asn	Arg	Glu	Ala	Val
145				150						155					160
Lys	Gly	Leu	Thr	Gly	Tyr	Val	Gly	Asn	Gly	Ile	Gly	Asp	Lys	Asp	Ile
			165					170						175	
Cys	Tyr	Val	Asp	Glu	Arg	Gly	Ile	Ala	Val	Ala	Glu	Val	Tyr	Lys	Tyr
		180						185					190		
Ala	Ile	Met	Gly	Ala	Ile	Tyr	Leu	Asp	Lys	Ile	Leu	Asn	Ile	His	Leu
		195					200					205			
Ser	Glu	Gln	Ile	Leu	Glu	Asn	Asn	Glu	Val	Leu	Val	Arg	Asn	Asp	Leu
	210					215					220				
Thr	Gln	Leu	Leu	Pro	Gly	His	Asn	Tyr	Thr	Glu	Leu	Glu	His	His	Trp
225				230						235					240
Asp	Leu	Ala	Tyr	Gly	Tyr	Tyr	Asp	Phe	Trp	Lys	Thr	Leu	Ala	Gln	Ser
			245						250					255	
Asp	Gly	Leu	Pro	Ala	Leu	Lys	Asp	Cys	His	Leu	Arg	Ile	Ser	Arg	Ser
		260						265					270		
Phe	Val	Lys	Gly	Arg	Ala	Leu	Met	Thr	Thr	Ser	Gln	Tyr	Asp	Glu	Met
		275					280					285			
Arg	Leu	Gln	Ala	Asp	Thr	Ile	Arg	Gln	Glu	Leu	Ser	Arg	Val	Val	Ala
	290					295					300				
Ile	Arg	Ala	Met	His	Leu	Leu	Val	Gly	Pro	Asn	Thr	Leu	Ala	Asn	Leu
305				310						315					320
Lys	Glu	Asn	Pro	Arg	Arg	Ala	Phe	Arg	Leu	Leu	Ser	Gln	Ala	Tyr	Gly
			325					330						335	
Leu	Ile	Tyr	Ala	Ala	Gln	Phe	Ala	Arg	Asn	Met	Glu	Gly	Lys	Ser	Leu
			340					345					350		
Ser	Ser	Pro	Arg												

$$\begin{array}{ll} \langle 210 \rangle & 7254 \\ \langle 211 \rangle & 67 \end{array}$$

<212> PRT

<213> B.fragilis

<400> 7254

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Glu Arg Asn Asn Glu Gln Ile Gln Thr Ser Ser Lys Lys Val Ser Glu
1          5          10          15
Ile His Phe Ser Asn Asn Cys Phe His Met Leu Asp Phe Ile Leu Glu
          20          25          30
Ser Ser Ser Ile Ile Leu Tyr Arg Gly Leu Gly Thr Ser Pro Arg Leu
          35          40          45
Met Ala Ser Ala Gly Ile Cys Lys Ser Phe Leu Glu Ser Ser Phe Ser
          50          55          60
Asn Gly Leu
65

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<210> 7255

<211> 344

<212> PRT

<213> B.fragilis

<400> 7255

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Phe Lys Asn Lys Ile Lys His Met Lys Thr Ile Ile Arg Lys Val Asn
1          5          10          15
Phe Arg Tyr Phe Phe Arg Arg Ser Leu Tyr Leu Leu Val Ile Ser Phe
          20          25          30
Leu Leu Ala Gly Cys Glu Glu Glu Ala Ser Leu Ser Ala Arg Ser Val
          35          40          45
Val Glu Ala Gly Glu Thr Glu Arg Glu Lys Thr Glu Leu Asp Lys Trp
          50          55          60
Ile Leu Asp Thr Phe Thr Arg Pro Tyr Gly Ile Glu Val Glu Tyr Arg
65          70          75          80
Trp Asp Lys Asn Ala Val Gln Asn Gly Ser Tyr Ile Tyr Pro Pro Glu
          85          90          95
Val Ala Asn Val Lys Ser Val Leu Asn Thr Ile Lys Thr Leu Trp Ile
          100          105          110
Asp Leu Tyr Thr Ala Pro Glu Leu Gly Gly Asp Lys Phe Leu Leu Gly
          115          120          125
Lys Asn Pro Leu Lys Ile Tyr Met Tyr Gly Gly Arg Asn Val Asp Gly
          130          135          140
Asn Gly Met Glu Leu Leu Asp Asn Leu Glu Ala Thr Thr Asn Glu Met
145          150          155          160
Phe Leu Tyr Asn Val Asn Glu Phe Asn Pro Gln Asp Glu Asp Lys Val
          165          170          175
Phe Ile Leu Met Arg Ser Val His His Gln Phe Ala Arg His Leu Met
          180          185          190
Glu Leu Phe Pro Tyr Asp Arg Ser Lys Phe Leu Ser Ile Ser Arg Asn
          195          200          205
Lys Tyr Ile Glu Ser Thr Lys Ser Ile Ala Trp Ile Phe Lys Gly Glu
          210          215          220
Thr Gln Gly Arg Arg Gly Phe Ile Leu Ala Gly Tyr Pro Asn Lys Lys
225          230          235          240
Gly Phe Phe Thr Phe His Ser Leu Leu Ser Pro Glu Lys Asp Phe Ala
          245          250          255
Glu Ile Ile Ser Leu Lys Leu Thr Tyr Gly Pro Lys Asp Leu Leu Gln
          260          265          270
Ala Leu Asp Arg Ala Lys Thr Pro Tyr Asn Ala Gly Ser Asp Lys Asp
          275          280          285
Leu Gln Lys Glu Tyr Asp Glu Gln Ala Leu Gln Ala Tyr Lys Glu Leu
290          295          300

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Val Glu Lys Gln Ala Phe Val Glu Asp Tyr Phe Ser Lys Glu Ile Lys
 305 310 315 320
 Ile Ser Leu Asn Tyr Leu Gln Leu Ile Ser Met Lys Gln Val Lys Glu
 325 330 335
 Phe Ile Asn Lys Asn Lys Lys Glu
 340

<210> 7256
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 7256
 Glu Arg Met Lys Leu Gly Phe Gln Ile Leu Ile Leu Met Val Phe Cys
 1 5 10 15
 Phe Ser Cys Lys Asp Glu Lys Val Phe Asp Ser Ser Pro Ser Glu Arg
 20 25 30
 Asn Ala Asn His Ile Gly Glu Leu Arg Lys Glu Leu Val Asn Ala Pro
 35 40 45
 Tyr Gly Trp Ala Val Thr Tyr Phe Pro Arg Thr Asp Ser Leu Leu Phe
 50 55 60
 Thr Asn Val Asn Glu Leu Ile Thr Leu Pro Lys Gly Ile Phe Glu Asp
 65 70 75 80
 Lys Asn Lys Tyr Gly Tyr Gly Gly His Tyr Phe Leu Met Lys Phe Ser
 85 90 95
 Glu Asn Gly Ile Val Glu Thr Val Ala Asp Tyr Asn Glu Glu Ser Leu
 100 105 110
 Thr Lys Lys Leu Gln Ser Glu Phe Glu Val Ser Gln Asn Thr Phe Thr
 115 120 125
 Gln Leu Ser Phe Thr Thr Tyr Thr Tyr Leu His Ser Leu Val Asn Asp
 130 135 140
 Arg Phe Thr Gly Ser Ser Asp Phe Leu Tyr Thr Gly Lys Asp Val Asp
 145 150 155 160
 Gly Asn Leu Ile Phe Lys Thr Ser Ser Tyr Ile Glu Pro Ala Arg Glu
 165 170 175
 Tyr Ile Ile Phe Thr Lys Leu Lys Asn Asp Glu Ser Trp Gln Glu Asp
 180 185 190
 Ile Gln Lys Ser Tyr Asp Asn Lys Leu Phe Phe Glu Lys Met Lys Asn
 195 200 205
 Pro Gln Leu Ile Ile Arg Arg Ala Gly Arg Val Tyr Phe His Ser Asp
 210 215 220
 Val Gln Met Asn Val Thr Tyr Gly Gly Asp Gly Ser Val Asn Gly Lys
 225 230 235 240
 Gln Pro Pro Glu Val Tyr Gln Arg Tyr Arg Leu Phe Leu Ala Arg Asp
 245 250 255
 Tyr Phe Ala Ser Gln Gly Trp Leu Gly Asn Lys Val Lys Gly Leu Gly
 260 265 270
 Ser Gly Tyr Val Gly Thr Ala Ala Gly Leu Thr Phe Lys Pro Gly Ile
 275 280 285
 Arg Tyr Ser Glu Thr Tyr Ile Phe Tyr Asp Phe Arg Arg Glu Gly Glu
 290 295 300
 Arg Phe Val Cys Glu Leu Val Lys Val Val Asp Pro Tyr Ser Lys Lys
 305 310 315 320
 Ile His Trp Val Ser Lys His Leu Ala Pro Tyr Gly Glu Glu Ser Gly
 325 330 335
 Val Ile Ala Glu Ile Arg Asp Glu Ile
 340 345

<210> 7257

<211> 227
 <212> PRT
 <213> B.fragilis

<400> 7257

Leu	Lys	Ser	Gly	Met	Lys	Phe	Lys	Leu	Glu	Asn	Asn	Arg	Ile	Asn	Met
1				5					10					15	
Lys	His	Val	Trp	Ile	Ile	Ser	Cys	Leu	Leu	Phe	Val	Cys	Ser	Cys	Asn
			20					25					30		
Thr	Val	Arg	Glu	Asp	Phe	Val	Val	Asn	Glu	Asp	Tyr	Glu	Lys	Leu	Phe
			35					40				45			
Pro	Ser	Lys	Glu	Ile	Glu	Lys	Pro	Glu	Asn	Lys	Arg	Gly	Glu	Leu	Leu
			50			55					60				
Val	Gln	Leu	Cys	Asp	Pro	Asp	Gln	Ala	Leu	Glu	Asn	Tyr	Lys	Tyr	Pro
65					70					75				80	
Gly	Thr	Glu	Thr	Pro	Asn	Gly	Ala	Asp	Gln	Tyr	Lys	Ile	Thr	Leu	Met
				85					90					95	
Cys	Ser	Phe	Gln	Glu	Lys	Arg	Trp	Asp	Gly	Asn	Leu	Thr	Lys	Asp	Val
			100					105					110		
Ser	Ala	Gln	Tyr	Lys	Val	Lys	Tyr	Ile	Asn	Glu	Lys	Lys	Glu	Leu	Val
			115				120					125			
Thr	Ile	Ser	Cys	Gly	Lys	Arg	Asn	Ile	Gly	Asn	Ala	Gly	Glu	Asp	Ala
			130			135					140				
Asp	Gly	Leu	Arg	Pro	Asn	Val	Met	Phe	Asn	Gly	Glu	Lys	Leu	Glu	Ile
145					150					155				160	
Ser	Phe	Asn	Val	His	Ser	Gly	Phe	Pro	Leu	Tyr	Leu	Ser	Val	Ser	Gly
				165					170					175	
Glu	Gly	Pro	Arg	Ser	Ser	Asn	Ile	Arg	Ala	Ser	Ile	Thr	Ala	Val	Ser
			180					185					190		
Thr	Asp	Gly	Leu	Val	Glu	Ile	Pro	Ser	Leu	Gln	Thr	Glu	Gln	Tyr	Gln
			195				200					205			
Asn	Glu	Glu	Gly	Ile	Asn	Pro	Leu	Arg	Tyr	Pro	Tyr	Cys	Glu	Tyr	Leu
			210			215					220				
Ile	Leu	Pro													
225															

<210> 7258
 <211> 646
 <212> PRT
 <213> B.fragilis

<220>

<221> UNSURE

<222> (4)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7258

Leu	Gly	Phe	Xaa	Asn	Ile	Leu	Asn	Glu	Tyr	Glu	Asn	Asn	Tyr	Leu	Lys
1				5					10					15	
Thr	Glu	Val	Leu	Asp	Leu	Lys	Leu	Gln	Gly	Glu	Leu	Ser	Tyr	Arg	Leu
			20					25					30		
Asn	Asp	His	Ile	Glu	Val	Lys	Gly	Leu	Ala	Met	Val	Arg	His	Ala	Val
			35				40					45			
Thr	Lys	Ser	Ser	His	Phe	Ile	Ala	Glu	Ala	Ser	Asn	Val	Val	Gln	Ala
			50			55				60					
Phe	Arg	Ala	Asn	Glu	Thr	Pro	Tyr	Val	Ala	Arg	Glu	Asn	Ile	Tyr	Leu
65					70					75				80	
Leu	Lys	Asn	Lys	Asp	Asp	Pro	Met	Gln	Leu	Pro	Gly	Val	Ala	Leu	Thr
				85					90					95	

His Gly Gly Ile Phe Asn Lys Thr Glu Thr Ser Leu Arg Ser Tyr Leu
 100 105 110
 Gly Arg Leu Ala Leu Asp Tyr Asn Arg Gln Leu Ser Glu His Asn Ile
 115 120 125
 Arg Ala Phe Gly Phe Thr Glu Ile Arg Tyr Ala Asp Arg Ser Met Asn
 130 135 140
 Pro Phe Gln Gly Tyr Gly Ile Gln Tyr Asp Arg Gly Asn Gln Val Phe
 145 150 155 160
 Ser Asn Pro Leu Ile Phe Glu Lys Leu Ala Asn Glu Gly Asp Thr Tyr
 165 170 175
 Phe Ser Leu Thr Glu Arg Tyr Glu Arg Gly Val Thr Leu Ser Gly Ser
 180 185 190
 Ala Thr Tyr Gly Tyr Ala Gly Lys Tyr Ile Phe Asn Gly Val Phe Asn
 195 200 205
 Tyr Glu Gly Ala Asn Thr Ala Gly Lys Tyr Ser Arg Ser Arg Trp Leu
 210 215 220
 Pro Thr Trp Asn Ile Gly Ala Lys Trp Asn Leu Asp Gln Glu Lys Phe
 225 230 235 240
 Met Arg Lys His Thr Thr Ile Ser Arg Leu Ala Leu Arg Thr Ser Tyr
 245 250 255
 Gly Leu Thr Ala Lys Met Asn Glu Gln Ala Val Asn Ser Thr Thr Val
 260 265 270
 Phe Lys His Val Met Val Asn Arg Thr Leu Leu Lys Asp Arg Glu Asn
 275 280 285
 Ala Leu Arg Ile Leu His Leu Glu Asn Arg Asp Leu Thr Trp Glu Lys
 290 295 300
 Met Tyr Glu Leu Asn Phe Gly Leu Glu Leu Gly Leu Phe Gly Asn Arg
 305 310 315 320
 Ile Ser Ala Thr Phe Asp Val Tyr Gln Arg Asn Ser Phe Asp Leu Ile
 325 330 335
 Asp Leu Ile Arg Thr Ser Gly Val Gly Gly Gln Tyr Tyr Lys Tyr Ala
 340 345 350
 Asn Phe Gly Asp Met Arg Thr Arg Gly Val Glu Leu Ala Ile Gln Thr
 355 360 365
 Gln Asn Ile Leu Thr Asp Lys Phe Ser Trp Ser Thr Thr Val Thr Ile
 370 375 380
 Ser Gly Met Lys Gln Lys Ile Thr Arg Leu Leu Asn Thr Pro Asn Thr
 385 390 395 400
 Phe Asp Met Val Ala Gly Thr Gly Arg Gly Asn Ile Val Gly Phe Pro
 405 410 415
 Arg Gly Ser Leu Phe Ser Phe Asn Phe Gln Gly Leu Asn Ser Asn Gly
 420 425 430
 Leu Pro Thr Phe Asp Phe Gly Leu Tyr Pro Ser Asn Lys Gly Ala Asn
 435 440 445
 Ser Glu Ile Ser Gly Ala Asp Phe Leu Asp Ala Gln Tyr Ser Lys Ser
 450 455 460
 Tyr Leu Ile Tyr His Gly Pro Ile Glu Pro Gln Tyr Ile Gly Gly Ile
 465 470 475 480
 Ser Asn Thr Phe Lys Tyr Lys Asn Trp Glu Phe Ser Cys Phe Val Thr
 485 490 495
 Met Gln Ala Gly Asn Lys Ile Arg Met Asn Pro Ser Phe Asp Pro Ala
 500 505 510
 Phe Ala Asp Leu Asn Val Phe Ser Lys Glu Tyr Tyr Asn Arg Trp Leu
 515 520 525
 Asn Pro Gly Asp Glu Arg Lys Thr Asn Ile Pro Val Ile Pro Ser Gln
 530 535 540
 Asp Leu Ile His Asn Ile Gly Lys Glu Asn Ile Glu Lys Ala Tyr Asn
 545 550 555 560
 Thr Tyr Asn Tyr Ser Gln Asn Arg Val Ala Asp Gly Ser Phe Val Arg

				565					570					575			
Met	Lys	Asn	Ile	Ser	Leu	Gly	Tyr	Arg	Leu	Pro	Gln	Arg	Phe	Leu	Ser		
			580					585					590				
His	Leu	Lys	Ile	Lys	Gln	Met	Asn	Val	Lys	Val	Asn	Val	Thr	Asn	Pro		
		595					600					605					
Phe	Leu	Ile	Tyr	Ser	Asp	Arg	Lys	Leu	Asn	Gly	Gln	Asp	Pro	Glu	Phe		
	610					615					620						
Tyr	Arg	Ser	Gly	Gly	Val	Ser	Leu	Pro	Thr	Pro	Lys	Gln	Tyr	Thr	Met		
	625				630					635					640		
Thr	Leu	Asn	Val	Glu	Phe												
			645														

<210> 7259
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 7259

Pro	Leu	Trp	Val	Ile	Asp	Gly	Ala	Val	Tyr	Glu	Asp	Leu	Val	Ser	Leu		
1			5					10					15				
Thr	Leu	Asp	Gln	Leu	Ala	Ser	Gly	Asp	Ala	Val	Thr	Leu	Ile	Ser	Ser		
		20					25					30					
Ala	Val	Ala	Gly	Leu	Asn	Ala	Ser	Asp	Ile	Glu	Asp	Ile	Gln	Val	Leu		
	35					40					45						
Lys	Asp	Ala	Ser	Ala	Thr	Ser	Ile	Tyr	Gly	Ala	Arg	Ala	Leu	Asn	Gly		
	50					55				60							
Val	Ile	Val	Ile	Thr	Thr	Arg	Ser	Gly	Lys	Arg	Asn	Ala	Pro	Asn	Arg		
	65			70					75					80			
Phe	Ser	Tyr	Ser	Tyr	Glu	Leu	Ser	Met	Arg	Ser	Ile	Pro	Ser	Tyr	Thr		
		85						90					95				
Asn	Phe	Asp	Leu	Leu	Asn	Ser	Gln	Glu	Ser	Met	Ser	Val	Tyr	Gln	Glu		
		100						105				110					
Met	Gly	Arg	Lys	Gly	Tyr	Phe	Ser	Leu	Gln	Asn	Thr	Leu	Tyr	Gly	Arg		
	115					120						125					
Arg	Ser	Gly	Val	Tyr	Tyr	Gln	Met	Tyr	Lys	Ala	Leu	Asn	Thr	Ile	Asp		
	130					135					140						
Pro	Ala	Thr	Gly	Gln	Tyr	Tyr	Leu	Glu	Asn	Thr	Asp	Asp	Val	Lys	Arg		
	145				150				155					160			
Ala	Phe	Met	Arg	Glu	Arg	Glu	Tyr	Ala	Asn	Thr	Asn	Trp	Phe	Lys	Glu		
		165						170					175				
Leu	Phe	Thr	His	Arg	Pro	Ile	His	Thr	His	Thr	Val	Thr	Phe	Ser	Gly		
		180					185					190					
Gly	Gly	Glu	Asn	Ser	Ala	Met	Tyr	Ala	Ser	Ile	Gly	Phe	Tyr	Asp	Asp		
	195					200					205						
Arg	Gly	Trp	Thr	Leu	Ala	Asp	Asn	Val	Lys	Arg	Ile	Thr	Ala	Asn	Ile		
	210					215					220						
Lys	Asn	Ser	Phe	Tyr	Trp	Asn	Glu	Asp	Lys	Ile	Lys	Ala	Thr	Ile	Ser		
	225				230				235					240			
Ala	Gln	Gly	Lys	Ser	Thr												
			245														

<210> 7260
 <211> 170
 <212> PRT
 <213> B.fragilis

<400> 7260

Glu	Ser	Leu	Ser	Leu	Cys	His	Ile	Asp	Cys	Val	Ser	Leu	His	Ala	Lys		
1			5					10					15				

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Thr Lys Lys Asp Asn Met Cys Gly Ile Val Gly Tyr Ile Gly Lys Arg
    20                      25                      30
Glu Ala Tyr Pro Ile Leu Ile Lys Gly Leu Lys Arg Leu Lys Tyr Arg
    35                      40                      45
Gly Tyr Asp Ser Ala Gly Val Ala Ile Ile Asn Asp Asn Gln Leu Leu
    50                      55                      60
Asn Val Tyr Arg Pro Gln Gly Glu Thr Phe Val Phe Ala Ser Asp Gly
    65                      70                      75                      80
Ile Ile Glu Thr Pro Thr Val Ile Leu Gln Glu Phe Pro Ser Gln Ser
    85                      90                      95
Tyr Ile Phe Arg Asn Ser Thr Tyr Thr Glu Val Pro Val Tyr Ser Phe
    100                      105                      110
Ser Ser Phe Arg Pro Met His Gln Phe Cys Lys Ile Thr Ala Ser Arg
    115                      120                      125
Ala Val Arg Pro Glu Thr Leu Lys Cys Ser Asp Ser Leu Ile Ile Arg
    130                      135                      140
Glu Ala Phe Ser Asp Thr Leu Leu Gln Gly Gly Lys Asp Glu Ala Thr
    145                      150                      155                      160
Gly Ile Arg Glu Glu Ser Val Thr Met Glu
    165                      170

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<210> 7261
<211> 112
<212> PRT
<213> B.fragilis

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<400> 7261
Lys His Lys Ser Phe Lys Thr Ile Thr Ile Met Cys Gly Ile Ala Gly
1      5      10      15
Ile Phe Asn Ile Lys Ile Gln Ser Arg Glu Leu Arg Asn Lys Ala Leu
    20      25      30
Arg Met Ala Arg Lys Ile Arg His Arg Gly Pro Asp Trp Ser Gly Met
    35      40      45
Tyr Cys Gly Gly Ser Ala Ile Leu Ala Thr Arg Ala Pro Phe His Ser
    50      55      60
Arg Ser Ala Lys Arg Arg Thr Ala Ser Phe Ile His Pro Thr Gly Ser
    65      70      75      80
Lys Tyr Trp Arg Leu Thr Ala Lys Ser Ile Thr Thr Val Thr Ser Ala
    85      90      95
Pro Asn Met Pro Ala Ala Thr Ser Ser Gly Pro Gly Val Thr Val Arg
    100      105      110

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<210> 7262
<211> 189
<212> PRT
<213> B.fragilis

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<400> 7262
Asp Met Lys Ser Met Asn Tyr Ser Leu Ile Arg Thr Ile Cys Ala Leu
1      5      10      15
Val Ile Gly Leu Val Leu Val Leu Trp Pro Asp Ala Ala Ile Asn Tyr
    20      25      30
Ile Val Ile Thr Ile Gly Val Leu Phe Leu Ile Pro Gly Phe Ile Val
    35      40      45
Leu Ile Gly Tyr Phe Gly Thr Lys Pro Glu Pro Gly Val Ser Arg Arg
    50      55      60
Phe Pro Ile Glu Gly Val Gly Ser Leu Leu Phe Gly Leu Trp Leu Val
    65      70      75      80
Thr Met Pro Gly Phe Phe Ala Asp Val Leu Met Phe Leu Leu Gly Phe

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				85				90					95				
Ile	Leu	Ile	Met	Gly	Gly	Val	Gln	Gln	Ile	Ala	Ser	Leu	Ser	Met	Ala		
			100					105					110				
Arg	Arg	Trp	Thr	Pro	Val	Pro	Gly	Gly	Phe	Tyr	Val	Ile	Pro	Val	Leu		
		115					120					125					
Ile	Leu	Ile	Ala	Gly	Ile	Val	Ala	Leu	Phe	Asn	Pro	Thr	Gly	Ala	Arg		
	130					135					140						
Asn	Thr	Ala	Phe	Met	Ile	Ile	Gly	Val	Ser	Ser	Leu	Val	Tyr	Ala	Val		
145					150					155					160		
Ser	Glu	Leu	Ile	Asn	Trp	Phe	Lys	Phe	Ala	Arg	Arg	Arg	Pro	Lys	Thr		
			165					170						175			
Pro	Leu	Lys	Gly	Glu	Ile	Glu	Asp	Ala	Glu	Ile	Ile	Glu					
			180					185									

<210> 7263

<211> 220

<212> PRT

<213> B.fragilis

<400> 7263

Asp	Ser	Val	Ser	Leu	Cys	Gly	Glu	Pro	Asn	Phe	Lys	Pro	Lys	Met	Met		
1			5						10					15			
Asn	Asp	Lys	Leu	Ile	Lys	Val	Cys	Gly	Met	Arg	Glu	Ala	Glu	Asn	Ile		
		20						25					30				
Arg	Glu	Val	Glu	Gln	Leu	Lys	Val	Asp	Met	Ile	Gly	Phe	Ile	Phe	Tyr		
		35				40						45					
Pro	Lys	Ser	Pro	Arg	Cys	Leu	Tyr	Glu	Leu	Pro	Ala	Tyr	Met	Pro	Val		
	50				55					60							
Lys	Ala	Lys	Arg	Val	Gly	Val	Phe	Val	Asn	Glu	Asp	Lys	Lys	Glu	Ile		
65				70					75					80			
Glu	Ile	Phe	Ala	Asp	Arg	Phe	Ser	Leu	Asp	Tyr	Ile	Gln	Leu	His	Gly		
			85					90					95				
Asn	Glu	Ser	Pro	Glu	Tyr	Cys	His	Ser	Leu	Arg	Ala	Thr	Gly	Leu	Arg		
		100						105					110				
Leu	Ile	Lys	Ala	Phe	Ser	Ile	Ala	Arg	Arg	Lys	Asp	Phe	Glu	Asn	Ile		
		115				120						125					
Gly	Thr	Tyr	Glu	Glu	Ser	Cys	Asp	Tyr	Phe	Leu	Phe	Asp	Thr	Lys	Cys		
	130				135						140						
Glu	Gln	His	Gly	Gly	Ser	Gly	Asn	Gln	Phe	Asp	Trp	Ser	Met	Leu	Asn		
145				150					155					160			
Ser	Tyr	Lys	Gly	Lys	Lys	Pro	Phe	Leu	Leu	Ser	Gly	Gly	Ile	Asn	Pro		
			165					170						175			
Tyr	Ser	Pro	Pro	Thr	Leu	Lys	Glu	Leu	Arg	His	Pro	Gln	Leu	Ala	Gly		
		180					185						190				
Phe	Asp	Leu	Asn	Ser	Arg	Phe	Glu	Thr	Lys	Pro	Gly	Leu	Lys	Asp	Val		
	195					200					205						
Glu	Arg	Leu	Arg	His	Phe	Leu	Glu	Glu	Leu	Arg	Lys						
	210					215					220						

<210> 7264

<211> 774

<212> PRT

<213> B.fragilis

<400> 7264

Phe	Tyr	Tyr	Pro	Lys	Met	Lys	Met	Lys	Lys	Tyr	Ile	Phe	Phe	Leu	Val		
1			5					10						15			
Ser	Leu	Cys	Cys	Ala	Leu	Leu	Pro	Ala	Met	Ala	Asp	Gln	Pro	Glu	His		
		20						25					30				

Pro Glu Leu Lys Ala Ser Asp Ala Asn Ile Ile Gly His Val Leu Asp
 35 40 45
 Lys Lys Thr Gly Glu His Leu Ser Tyr Ile Thr Ile Ala Leu Lys Gly
 50 55 60
 Thr Thr Ile Gly Thr Val Thr Asp Ala Thr Gly His Tyr Phe Leu Lys
 65 70 75 80
 Asn Leu Pro Glu Gly Asn Phe Val Leu Glu Ala Ser Ser Val Gly Tyr
 85 90 95
 Lys Thr Ile Ser Arg Asn Val Ser Leu Arg Lys Gly Lys Thr Leu Glu
 100 105 110
 Glu Asn Phe Glu Leu Glu Glu Asp Ala Val Ala Leu Asp Gly Val Val
 115 120 125
 Val Ser Ala Asn Arg Ser Val Thr Lys Arg Arg Leu Ala Pro Thr Leu
 130 135 140
 Val Asn Val Val Asp Met Lys Met Phe Glu Asn Thr Asn Ser Pro Thr
 145 150 155 160
 Leu Ser Gln Gly Leu Asn Phe Gln Pro Gly Val Arg Val Glu Thr Asn
 165 170 175
 Cys Gln Asn Cys Gly Phe Gln Gln Val Arg Ile Asn Gly Leu Asp Gly
 180 185 190
 Pro Tyr Thr Gln Ile Leu Ile Asp Ser Arg Pro Ile Phe Ser Ala Leu
 195 200 205
 Ser Gly Val Tyr Gly Leu Glu Gln Ile Pro Ala Asn Met Ile Glu Arg
 210 215 220
 Val Glu Val Met Arg Gly Gly Gly Ser Ala Leu Phe Gly Ser Ser Ala
 225 230 235 240
 Ile Ala Gly Thr Ile Asn Ile Ile Thr Lys Glu Pro Leu Arg Asn Ser
 245 250 255
 Gly Gln Leu Ala His Thr Leu Thr Ser Ile Gly Gly Ser Ser Ser Phe
 260 265 270
 Asp Asn Asn Thr Ser Leu Asn Ala Ser Leu Val Thr Asp Asp His Arg
 275 280 285
 Ala Gly Leu Tyr Val Phe Gly Gln Asn Arg His Arg Asp Ala Tyr Asp
 290 295 300
 His Asp Gly Asp Gly Tyr Ser Glu Met Pro Lys Leu Lys Asn Gln Thr
 305 310 315 320
 Val Gly Phe Arg Ser Phe Leu Lys Thr Ser Thr Tyr Ser Lys Leu Thr
 325 330 335
 Phe Glu Tyr His His Leu Gln Glu Phe Arg Arg Gly Gly Asn Leu Leu
 340 345 350
 Asn Arg Pro Pro His Glu Ala Asp Ile Ala Glu Gln Ile Gln His Ser
 355 360 365
 Ile Asn Gly Gly Gly Leu Lys Phe Asp Tyr Phe Ala Pro Asn Glu Lys
 370 375 380
 His Arg Leu Thr Val Tyr Thr Ser Ala Gln His Thr Asp Arg Asp Ser
 385 390 395 400
 Tyr Tyr Gly Ser Lys Lys Asp Gln Asn Ala Tyr Gly Lys Thr Thr Asp
 405 410 415
 Leu Thr Phe Ile Gly Gly Ser Gln Tyr Val Tyr Ser Phe Gly Lys Cys
 420 425 430
 Leu Phe Met Pro Ala Asp Leu Thr Ala Gly Leu Glu Tyr Asn Arg Asp
 435 440 445
 Asn Leu Lys Asp Asp Met Trp Gly Tyr Asn Arg Tyr Thr Lys Gln Thr
 450 455 460
 Val Asn Ile Gly Ser Ala Phe Leu Gln Asn Glu Trp Lys Asn Glu Lys
 465 470 475 480
 Trp Ser Ile Leu Leu Gly Gly Arg Leu Asp Lys His Asn Leu Ile Asn
 485 490 495
 His Val Ile Phe Ser Pro Arg Ala Asn Leu Arg Phe Asn Pro Ser Glu

500					505					510					
Asp	Ile	Asn	Leu	Arg	Leu	Ser	Tyr	Ser	Ser	Gly	Phe	Arg	Ala	Pro	Gln
	515						520					525			
Ala	Phe	Asp	Glu	Asp	Leu	His	Ile	Glu	Asn	Val	Gly	Gly	Thr	Val	Ser
	530					535					540				
Met	Ile	Glu	Arg	Ala	Lys	Asn	Leu	Lys	Glu	Glu	Lys	Ser	Gln	Ser	Phe
545						550					555				560
Ser	Ala	Ser	Ala	Asp	Met	Tyr	His	Arg	Phe	Gly	Ala	Phe	Gln	Val	Asn
				565					570						575
Phe	Leu	Val	Glu	Gly	Phe	Tyr	Thr	Arg	Leu	Ser	Asp	Val	Phe	Val	Leu
			580					585							590
Glu	Asn	Ile	Gly	Glu	Arg	Asp	Gly	Ile	Leu	Ile	Lys	Glu	Arg	Arg	Asn
			595				600					605			
Gly	Ser	Gly	Ala	Lys	Val	Leu	Gly	Leu	Ser	Met	Glu	Gly	Lys	Met	Ala
	610						615					620			
Tyr	Leu	Ser	Leu	Phe	Gln	Leu	Gln	Ala	Gly	Val	Thr	Leu	Gln	Gln	Ser
625						630					635				640
Arg	Tyr	Asp	Glu	Pro	Glu	Lys	Trp	Ser	Glu	Thr	Ala	Pro	Ala	Glu	Lys
				645					650						655
Lys	Ile	Phe	Arg	Thr	Pro	Asn	Thr	Tyr	Gly	Tyr	Phe	Thr	Ala	Thr	Tyr
			660					665					670		
Thr	Pro	Ile	Lys	Pro	Leu	Ser	Leu	Ser	Leu	Ser	Gly	Thr	Tyr	Thr	Gly
			675				680						685		
Ser	Met	Leu	Val	Gln	His	Met	Ala	Gly	Tyr	Ile	Asp	Lys	Asp	Val	Ala
	690					695					700				
Val	Asn	Thr	Arg	Asp	Phe	Phe	Asp	Met	Gly	Val	Lys	Val	Ala	Tyr	Asp
705						710					715				720
Phe	Lys	Leu	Tyr	Lys	Ser	Val	Asp	Leu	Gln	Leu	Ser	Ala	Gly	Val	Gln
				725					730					735	
Asn	Val	Phe	Asn	Ala	Tyr	Gln	Asn	Asp	Phe	Asp	Gln	Gly	Val	Glu	Arg
			740				745					750			
Asp	Ser	Gly	Tyr	Ile	Tyr	Gly	Pro	Ala	Ala	Pro	Arg	Ser	Tyr	Phe	Ala
		755					760					765			
Gly	Ile	Lys	Ile	Ser	Tyr										
	770														

<210> 7265

<211> 214

<212> PRT

<213> B.fragilis

<400> 7265

Pro	Thr	Leu	Pro	Ile	Met	Ala	Leu	Lys	Glu	Lys	Ile	Lys	Gln	Asn	Pro
1				5					10					15	
Ala	Leu	Lys	Gln	Ala	Val	His	Arg	Phe	Ile	Met	His	Pro	Val	Lys	Thr
			20					25					30		
Arg	Pro	Asn	Trp	Trp	Ile	Arg	Ile	Phe	Ser	Phe	Leu	Tyr	Leu	Lys	Arg
		35				40					45				
Gly	Lys	Gly	Ser	Val	Ile	Tyr	Arg	Ser	Val	Arg	Gln	Asp	Leu	Pro	Pro
	50					55					60				
Phe	Asn	Leu	Phe	Ser	Leu	Gly	Lys	Tyr	Ser	Val	Val	Glu	Asp	Phe	Ser
65					70					75					80
Cys	Leu	Asn	Asn	Ala	Val	Gly	Asp	Leu	Ile	Ile	Gly	Glu	Tyr	Thr	Arg
				85					90					95	
Ile	Gly	Leu	Gly	Asn	Thr	Ile	Ile	Gly	Pro	Ala	Thr	Ile	Gly	Asn	His
			100					105					110		
Val	Asn	Leu	Ala	Gln	Asn	Val	Thr	Val	Thr	Gly	Leu	Asn	His	Asn	Tyr
		115					120					125			
Gln	Asp	Thr	Gly	Lys	Arg	Ile	Asp	Glu	Gln	Gly	Val	Ser	Thr	Gln	Pro

130		135		140	
Ile Thr Ile Glu Asp Asp Val Trp Val Gly Ala Asn Ser Val Ile Leu					
145		150		155	160
Pro Gly Val Thr Leu Gly Lys His Cys Val Val Ala Ala Gly Ser Val					
	165		170		175
Val Ser Arg Ser Ile Pro Pro Tyr Ser Val Cys Ala Gly Ser Pro Ala					
	180		185		190
Lys Val Val Lys Gln Phe Asn Pro Glu Ser Arg Thr Trp Glu Lys Thr					
	195	200		205	
Val Ser Lys Asn Gly Lys					
210					

<210> 7266
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 7266

Gln Ser Pro Pro Pro Leu Pro Ile Tyr Ser Asp Ser Tyr Pro Ala Ile					
1	5	10	15		
Ser Ile Ile Asn Gly Asp Phe Leu Phe Leu Pro Asp Arg Leu Ser Leu					
	20	25	30		
Pro Tyr His Leu Lys Thr Arg Ser Glu Met Asn Lys Ile Gly Val Phe					
	35	40	45		
Tyr Gly Ser Thr Thr Gly Thr Thr Glu Asp Val Ala His Arg Ile Ala					
50	55	60			
Glu Lys Leu Asn Val Pro Asn Gly Asp Ile His Asp Ala Ser Lys Leu					
65	70	75	80		
Asn Asp Glu Leu Val Lys Glu Tyr Asp Val Leu Val Leu Gly Thr Ser					
	85	90	95		
Thr Trp Gly Ala Gly Glu Leu Gln Asp Asp Trp Tyr Asp Gly Ile Lys					
	100	105	110		
Val Leu Lys Lys Ala Asp Leu Ser His Lys Phe Val Ala Leu Phe Gly					
	115	120	125		
Cys Gly Asp Ser Asp Ser Tyr Ser Asp Thr Phe Cys Asp Gly Ile Gly					
130	135	140			
Ile Leu Tyr Glu Glu Leu Lys Asp Thr His Cys Thr Phe Cys Gly Ala					
145	150	155	160		
Thr Asp Pro Ser Gly Tyr Thr Phe Asp Ser Ser Val Ala Val Ile Asn					
	165	170	175		
Gly Lys Phe Val Gly Leu Pro Leu Asp Glu Val Asn Glu Asp Gly Lys					
	180	185	190		
Thr Asp Glu Arg Ile Ala Gln Trp Thr Glu Ala Leu Lys Lys Glu Cys					
	195	200	205		
Ile Asn					
210					

<210> 7267
 <211> 486
 <212> PRT
 <213> B.fragilis

<400> 7267

Asn Ser Val Leu Leu Tyr Gly Glu Ser Lys Ile Lys Leu Lys Arg Asn					
1	5	10	15		
Glu Ile Met Asn Ala Phe Asn Tyr Thr Thr His Ser Lys Gln Val Leu					
	20	25	30		
Gly Asp Leu His Thr Pro Val Ser Ile Tyr Leu Lys Val Arg Asp Met					
	35	40	45		

Tyr Pro Gln Ser Ala Leu Met Glu Ser Ser Asp Tyr His Ala Gly Glu
 50 55 60
 Asn Ser Leu Ser Phe Ile Ala Leu Cys Pro Leu Ala Ser Ile Gly Ile
 65 70 75 80
 Asn Ser Gly Ile Val Thr Thr Thr Tyr Pro Asp Asn Thr Arg Arg Glu
 85 90 95
 Glu Pro Leu Ser Gln Ser Phe Arg Val Glu Asn Ala Leu Asn Arg Phe
 100 105 110
 Ile Asn Arg Phe His Val Glu Gly Asp Asp Lys Lys Phe Cys Gly Leu
 115 120 125
 Tyr Gly Tyr Thr Thr Phe Asn Ala Val Lys Tyr Phe Glu His Ile Pro
 130 135 140
 Val Lys Glu Ser His Asp Glu Gln Asn Asp Ala Pro Asp Leu Leu Tyr
 145 150 155 160
 Ile Leu Tyr Lys Tyr Ile Ile Val Phe Asn His Phe Lys Asn Glu Leu
 165 170 175
 Thr Leu Val Glu Met Leu Ala Glu Gly Glu Glu Ser Asn Leu Ser Gln
 180 185 190
 Leu Glu Ser Ala Ile Glu Asn Arg Asn Tyr Ala Ser Tyr Asn Phe Ser
 195 200 205
 Val Thr Gly Pro Val Thr Ser Thr Ile Thr Asp Glu Glu His Lys Ala
 210 215 220
 Asn Val Arg Lys Gly Ile Ala His Cys Leu Arg Gly Asp Val Phe Gln
 225 230 235 240
 Ile Val Leu Ser Arg Arg Phe Ile Gln Pro Tyr Ala Gly Asp Asp Phe
 245 250 255
 Lys Val Tyr Arg Ala Leu Arg Ser Ile Asn Pro Ser Pro Tyr Leu Phe
 260 265 270
 Tyr Phe Asp Phe Gly Gly Tyr Arg Ile Phe Gly Ser Ser Pro Glu Thr
 275 280 285
 His Cys Lys Val Glu Ser Gly Gln Ala Tyr Ile Asp Pro Ile Ala Gly
 290 295 300
 Thr Thr Arg Arg Thr Gly Asp Thr Ile Lys Asp Lys Glu Leu Thr Glu
 305 310 315 320
 Ala Leu Leu Ala Asp Pro Lys Glu Asn Ala Glu His Val Met Leu Val
 325 330 335
 Asp Leu Ala Arg Asn Asp Leu Ser Arg Asn Cys His Asp Val Arg Val
 340 345 350
 Val Phe Tyr Lys Glu Pro Gln Tyr Tyr Ser His Val Ile His Leu Val
 355 360 365
 Ser Arg Val Ser Gly Ala Leu Asn Asn Gly Ala Asn Pro Leu Lys Thr
 370 375 380
 Phe Ile Asp Thr Phe Pro Ala Gly Thr Leu Ser Gly Ala Pro Lys Val
 385 390 395 400
 Arg Ala Met Gln Leu Ile Ser Glu Ile Glu Pro His Asn Arg Gly Ala
 405 410 415
 Tyr Gly Gly Cys Ile Gly Phe Ile Gly Leu Asn Gly Glu Leu Asn Gln
 420 425 430
 Ala Ile Thr Ile Arg Thr Phe Val Ser Arg Asn Asn Glu Leu Trp Phe
 435 440 445
 Gln Ala Gly Gly Gly Ile Val Ala Arg Ser Gln Asp Glu Tyr Glu Leu
 450 455 460
 Gln Glu Val Asn Asn Lys Leu Gly Ala Leu Lys Lys Ala Ile Asp Leu
 465 470 475 480
 Ala Val Lys Leu Lys Asn
 485

<210> 7268

<211> 69

<212> PRT

<213> B.fragilis

<400> 7268

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Asn Tyr Pro Pro His Ile Arg Lys Ala Ile Lys Ala Phe Leu Tyr Tyr
1          5          10          15
Leu Lys Ile Pro Lys Asn Thr Ile Phe Phe Leu Pro Lys Lys Leu Ser
          20          25          30
Ile Thr Tyr Ser Ser Phe Thr Phe Lys Asn Leu Tyr Leu Ile Glu Asn
          35          40          45
His Leu Lys Leu Phe Asn Thr Leu Asn Leu Tyr Leu Ile Pro Asn Ile
          50          55          60
Leu Phe Tyr Leu Lys
65

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<210> 7269

<211> 340

<212> PRT

<213> B.fragilis

<400> 7269

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Glu Arg Ser Thr Ile Val Thr Ile Asn Ile Lys Asn Val Glu Arg Met
1          5          10          15
Glu Asn Val Val Pro Pro Phe Lys Val Asp Val Ala Gly Thr Phe Leu
          20          25          30
Leu Pro Ala Ala Leu Arg Glu Ala Arg Glu Gln Tyr Arg Asn Glu Gln
          35          40          45
Ile Ser Leu Leu Thr Leu Arg Ala Val Glu Asp Ala Glu Ile Arg Asn
          50          55          60
Leu Val Asp Arg Leu Lys Ala Glu Gly Leu Lys Val Val Thr Asp Gly
65          70          75          80
Arg Phe Arg Ser Asp Ala Trp Pro Leu Asp Phe Met Cys Gly Leu Asp
          85          90          95
Gly Ile Arg Phe Arg Asp Asp Arg Lys Thr Ser Val Glu Leu Thr Gly
          100          105          110
Arg Ile Asp Val His His His Pro Val Leu Asp Asp Phe Val Phe Leu
          115          120          125
Thr Gly Val Thr Gly Gly Asp Val Ile Ala Lys Gln Val Leu Pro Ala
          130          135          140
Pro Ser Arg Leu Leu Ala Glu Leu Met Lys Asp Ala Asn Arg Thr Glu
145          150          155          160
Leu Asp Ser Val Tyr Pro Asp Arg Glu Ile Leu Leu Val Asp Leu Ala
          165          170          175
Gln Thr Tyr Gln Lys Leu Ile Met Glu Leu Tyr Arg Ser Gly Cys Arg
          180          185          190
Tyr Leu Gln Leu Asp Asp Ala Thr Arg Thr Val Thr Asp Asn Ala Ile
          195          200          205
Arg Val Asn Asn Met Ala Leu Glu Asn Leu Pro Ala Asp Leu Phe Ile
          210          215          220
Ala Phe His Ser Pro Thr Glu Met Leu Phe Ser Leu Gln Gly Ile His
225          230          235          240
Ala Phe Phe Leu Asp Tyr Asp Ser Glu Cys Cys Gly Lys Asn Arg Leu
          245          250          255
Leu Trp Phe Ile Arg Glu Lys Gln Ser Val Phe Gly Phe Val Leu Ser
          260          265          270
His Tyr Pro Val Glu Glu Glu Leu Glu Glu Leu Arg Ala Lys Ile Asp
          275          280          285
Gln Ile Ile Arg Tyr Ile Pro Ser His Arg Phe Ser Leu Cys Ile Pro
290          295          300

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Asn Ala Glu Val Leu Pro Ser Glu Ser Tyr Glu Ala Ala Glu Glu Lys
 305 310 315 320
 Gln Trp His Thr Leu Lys Met Ala Glu Met Val Ala Gly Glu Leu Trp
 325 330 335
 Pro Glu Glu Gly
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<210> 7270
 <211> 449
 <212> PRT
 <213> B.fragilis

<400> 7270
 Ser Lys Gly Thr Pro Leu Arg Leu Ile His Ser Asp Thr Val Glu His
 1 5 10 15
 Gly Gly Glu Phe Val Ala Val Leu Gly Ile Val Asp Ala Leu Gly Gly
 20 25 30
 Cys Ser Glu Asn Val Asp Val Leu Gly Ile Glu Thr Gln Gly Glu Ile
 35 40 45
 Val Arg Tyr Leu Ser Ala Gly Gly Asn Asn Asp Ser Val Arg Ile Leu
 50 55 60
 Gln Phe Lys Asp Ile His His Ala Phe Glu Cys Gln Phe Val Lys Val
 65 70 75 80
 Lys Pro Val Thr His Ile Ile Val Gly Arg Tyr Gly Phe Gly Ile Ile
 85 90 95
 Val Asp His His Arg Thr Pro Ser Phe Leu Thr Asp Arg Ile Lys Arg
 100 105 110
 Leu His Pro Ala Pro Val Glu Leu His Gly Arg Thr Asp Pro Val Gly
 115 120 125
 Thr Arg Thr Glu Asn Asp Asp Arg Thr Met Val Thr Gln Val Ser Asp
 130 135 140
 Val Val Gly Cys Ala Ala Ile Gly Gln Val Lys Ile Ile Gly Leu Cys
 145 150 155 160
 Arg Ile Phe Gly Ser Gln Arg Ile Asp Leu Leu His His Gly Asn Asn
 165 170 175
 Ala Gln Ala Leu Thr Val Ile Ala Asp Ile Lys Ala Ala Val Phe His
 180 185 190
 Ile Ala Phe Val Ala Asp Gly Thr Cys Asn Leu Glu Ile Gly Glu Ser
 195 200 205
 Leu Thr Leu Gly Leu Leu Glu Gln Val Gly Arg Gln Val Gly Tyr Leu
 210 215 220
 Leu Val Ile Val Pro Pro Leu Met Glu Phe Leu Arg Ser Ile His Asp
 225 230 235 240
 Ile His Gln Phe Leu Glu Glu Pro Leu Val Asp Leu Ser Gln Phe Val
 245 250 255
 His Leu Ile Asp Gly Ile Ser Gly Thr Glu Ser Leu Arg Asp Asp Lys
 260 265 270
 Asp Thr Phe Ile Gly Arg Phe Val Gln Cys Phe Val Asp Val Gly Asp
 275 280 285
 Asn Glu Phe Leu Val Phe His Lys Thr Met His Pro Leu Ser Asp His
 290 295 300
 Ser Gln Ala Leu Leu Asn Arg Phe Leu Lys Ser Ala Ala Asn Gly His
 305 310 315 320
 Tyr Leu Thr Asp Gly Leu His Arg Arg Ala Glu Phe Leu Val His Thr
 325 330 335
 Val Glu Leu Thr Glu Val Pro Thr Arg Asn Phe Ala Asp Tyr Ile Ile
 340 345 350
 Glu Cys Arg Leu Lys Glu Gly Thr Gly Gly Phe Arg His Arg Val Leu
 355 360 365

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Gln Val Glu Gln Pro Val Ala Lys Ser Glu Phe Cys Ser His Lys Gly
 370 375 380
 Lys Arg Ile Thr Gly Ser Leu Gly Ser Gln Gly Arg Arg Thr Ala Gln
 385 390 395 400
 Ala Gly Ile His Leu Asp His Ala Ile Val Phe Thr Phe Gly Val Glu
 405 410 415
 Ser Ile Leu His Val Thr Phe Ser His Asn Ala Asp Val Ala Asp Asp
 420 425 430
 Ala Asp Gly Glu Leu Ala Gln Phe Met Ile Leu Leu Ile Gly Gln Gly
 435 440 445
 Leu

<210> 7271
 <211> 813
 <212> PRT
 <213> B.fragilis

<400> 7271
 Ala Lys Gln Thr Gly Met Lys Thr Ser Ile Asn Lys Leu Cys Ile Ala
 1 5 10 15
 Ala Ser Ile Leu Val Thr Ala Ala Gly Ile Ser Ala Cys Val Asp Asp
 20 25 30
 Asn Lys Thr Leu Tyr Asp Pro Glu Tyr Lys Thr Pro Asn Pro Met Glu
 35 40 45
 Glu Ile Ser Ala Pro Thr Gly Phe Asp Trp Ser Ser Thr His Ala Ile
 50 55 60
 Lys Phe Asn Val Glu Val Asn Asp Glu Phe Asp Gly Gln Tyr Tyr Tyr
 65 70 75 80
 Thr Val Glu Ile Val Asp Lys Asn Pro Leu Glu Ala Thr Thr Glu Glu
 85 90 95
 Pro Tyr Asn Thr Leu Ala Lys Gly Val Ala Arg Lys Gly Glu Thr Tyr
 100 105 110
 Gln Thr Glu Val Val Ser Ser Lys Asp Thr Lys Tyr Leu Tyr Val Arg
 115 120 125
 Gln Thr Asp Pro Arg Gly Arg Asp Arg Ile Lys Gln Val Glu Ile Asp
 130 135 140
 Glu Ser Thr Ser His Ile Gln Cys Ser Phe Thr Gly Thr Ser Ala Ile
 145 150 155 160
 Lys Thr Arg Ala Phe Ala Thr Thr Lys Gly Asn Asn Gly Gly Ile Asp
 165 170 175
 Ile Pro Lys Arg Thr Glu Gln Asn Tyr Asp Ile Ser Arg Ala Ile Pro
 180 185 190
 Val Thr Ser Pro Ser Gln Val Leu Gln Gly Gly Gln Thr Tyr Ile Val
 195 200 205
 Thr Gly Asn Phe Ser Gly Lys Phe Thr Asp Ile Ser Leu Ser Asn Ser
 210 215 220
 Asn Lys Ala Thr Val Tyr Ile Gln Gly Thr Trp Glu Leu Ala Gln Val
 225 230 235 240
 Thr Gln Asp Phe Leu Asp Ile Ile Val Leu Lys Asp Gly Lys Ile Asn
 245 250 255
 Gly Lys Tyr Leu Met Leu Gln Asn Thr Ser Thr Leu Thr Ile Gln Ser
 260 265 270
 Gly Ala Glu Val Ser Leu Ser Asp Gln Leu Ile Cys Asn Thr Tyr Ser
 275 280 285
 Thr Ile Cys Asn Phe Gly Asp Leu Lys Thr Lys Asn Met Lys Leu Asn
 290 295 300
 Thr Asn Asp Ile Leu Tyr Asn Gly His Lys Thr Asp Ile Thr Asn Ser
 305 310 315 320

Leu	Asp	Ala	Ser	Gln	Gly	Gly	Asn	Ile	His	Asn	Phe	Gly	Lys	Leu	Asp
				325					330					335	
Val	Glu	Asn	Thr	Ile	Lys	Leu	Asn	Thr	Pro	Ser	Ile	Val	Tyr	Asn	Ala
			340					345					350		
Pro	Glu	Cys	Lys	Ile	Glu	Ala	Lys	Thr	Tyr	Glu	Ala	Ala	Gly	Ser	Thr
		355					360					365			
Asn	Val	Asn	Phe	Gly	Glu	Met	Glu	Phe	Asp	Thr	Tyr	Asp	Ser	Gly	Lys
	370					375					380				
Ala	Gly	Gly	Ser	Leu	Tyr	Asn	Asn	Cys	Met	Leu	Phe	Val	Glu	His	Met
385					390				395					400	
Lys	Ala	Gly	Gly	Ile	Val	Tyr	Leu	Asp	His	Gly	Val	Ile	Ala	Glu	Glu
				405					410					415	
Lys	Glu	Asp	Asp	Glu	Glu	Asn	Glu	Leu	Phe	Glu	Glu	Ala	Asp	Asp	Ile
			420					425					430		
Glu	Phe	Tyr	Asp	Asn	Ala	Lys	Val	Thr	Leu	Ala	Asn	Gly	Ser	Met	Ile
		435					440					445			
Lys	Ala	Lys	Asn	Ile	Ile	Ala	Lys	Ser	Gly	Leu	Ser	Val	Asn	Gly	Glu
	450					455					460				
Gly	Asn	Glu	Thr	Ser	Leu	Leu	Lys	Ala	Thr	Glu	Lys	Val	Gln	Ile	Gln
465					470					475					480
Asn	Trp	Asp	Val	Arg	Phe	Asn	Gly	Arg	Leu	Cys	Ile	Thr	Gly	Lys	Ile
				485				490						495	
Ser	Cys	Ser	Asn	Pro	Asp	Met	Tyr	Gln	Ala	Gly	Ser	Glu	Val	Thr	Phe
			500					505					510		
Ser	Glu	Ser	Pro	Asp	Val	Ile	Ile	Thr	Gly	Cys	Asn	Gly	Lys	Ala	Glu
		515					520					525			
Val	Pro	Asp	Pro	Ala	Pro	Glu	Pro	Ser	Asp	Pro	Val	Phe	Pro	Ile	Ile
	530					535					540				
Val	Asp	Asp	Asn	His	Asn	Tyr	Thr	Tyr	Leu	Phe	Glu	Asp	Gln	Trp	Pro
545					550					555					560
Leu	Tyr	Gly	Asp	Tyr	Asp	Met	Asn	Asp	Ile	Val	Leu	Glu	Val	Lys	Lys
				565					570					575	
Arg	Lys	Ile	Ser	Ile	Asp	Lys	His	Asn	Lys	Val	Thr	Glu	Phe	Asp	Leu
			580					585					590		
Ser	Val	Glu	Leu	Arg	Ala	Val	Gly	Ala	Gln	Lys	Thr	Ile	Ala	Ala	Ala
		595					600					605			
Ile	Met	Phe	Asp	Glu	Ile	Pro	Ala	Ser	Ala	Val	Thr	Gln	Ala	Val	Thr
	610					615					620				
Tyr	Ala	Asp	Asn	Tyr	Gln	Pro	Val	Ser	Phe	Glu	Leu	Thr	Asp	Lys	Asn
625					630					635					640
Ile	Glu	Lys	Gly	Gln	Glu	Tyr	Ala	Val	Val	Pro	Leu	Phe	Asp	Asn	Ala
				645					650					655	
His	Ala	Leu	Met	Glu	Arg	Pro	Thr	Gly	Ser	Phe	Val	Asn	Thr	Ile	Ser
			660					665					670		
Gly	Ser														

785 790 795 800
 Asp Phe Asp Asn Thr Lys Val Phe Gln Thr Asn Lys Asn
 805 810

<210> 7272
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 7272
 Gly Lys Arg Thr Asp Ser Gly Asn Asn Gln Leu Leu His Asp Gln Cys
 1 5 10 15
 Pro Asp His Glu Arg Gly Pro Gly Ile Tyr Arg Pro Glu Ser Val Arg
 20 25 30
 Arg Gly Glu Arg Thr Leu Phe Met Gly Lys Lys Leu Gln Asn Gly Thr
 35 40 45
 Ser Ser Trp Arg Phe Phe Asp Gln Met Leu Tyr Glu Asp Asn Val Val
 50 55 60
 Arg Thr Pro Gly Val Gly Phe Gly Pro Ser Gly Glu Gly Tyr Ile Arg
 65 70 75 80
 Leu Thr Ala Phe Gly Glu Arg Asp Asp Cys Ile Glu Ala Met Arg Arg
 85 90 95
 Ile Lys Asn Arg Leu
 100

<210> 7273
 <211> 446
 <212> PRT
 <213> B.fragilis

<400> 7273
 Asn Ile Ile Ala Asn Asn Trp Asn Leu Leu Ala Cys Ser Tyr Phe Leu
 1 5 10 15
 Ser Leu Ser Lys Arg Arg Ile Asn Arg Asn Arg Asn Met Lys Arg Val
 20 25 30
 Ile Phe Ser Leu Ser Phe Ser Leu Phe Ala Leu Leu Met Tyr Gly Gln
 35 40 45
 Ile Thr Leu Glu Glu Cys Gln Arg Lys Thr Arg Glu Asn Tyr Pro Leu
 50 55 60
 Val Arg Gln Tyr Gly Leu Ile Glu Lys Thr Lys Glu Tyr Asn Leu Ala
 65 70 75 80
 Asn Ala Ser Lys Gly Tyr Leu Pro Gln Phe Thr Leu Ser Gly Lys Ala
 85 90 95
 Ser Trp Gln Ser Glu Val Thr Glu Leu Pro Val Gln Val Pro Gly Val
 100 105 110
 Asp Ile Lys Gly Leu Pro Lys Asp Gln Tyr Gln Val Met Leu Glu Leu
 115 120 125
 Lys Gln Asn Ile Trp Asp Gly Gly Glu Ile Arg Ser Arg Lys Glu Gln
 130 135 140
 Val Lys Ala Ser Ser Asp Val Asp Arg Glu Lys Leu Asn Val Asp Met
 145 150 155 160
 Tyr Ala Leu Thr Glu Arg Val Asn Gln Val Tyr Phe Gly Ile Leu Leu
 165 170 175
 Leu Asp Glu Gln Leu Arg Gln Asn Gln Leu Phe Leu Glu Asp Leu Glu
 180 185 190
 Arg Thr His Lys Gln Ile Ser Ser Tyr Ile Glu Asn Gly Ile Ala Ser
 195 200 205
 Gln Ser Asp Leu Asp Ala Val Ser Val Glu Gln Leu Asn Thr Arg Gln
 210 215 220

Lys Arg Ile Glu Leu Thr Ser Ser Arg Gln Ala Tyr Leu Ser Met Leu
 225 230 235 240
 Ala Leu Leu Thr Gly Glu Glu Met Pro Ala Gly Ile Ser Leu Gln Lys
 245 250 255
 Pro Val Pro Glu Trp Asp Ile Pro Val Ile Ala Asn Asn Arg Pro Glu
 260 265 270
 Leu Ile Trp Phe Asp Ala Gln Asn Gly Arg Leu Gln Val Gln Glu Glu
 275 280 285
 Ala Leu Lys Thr Gln Leu Met Pro Arg Phe Gly Leu Phe Val Gln Gly
 290 295 300
 Ala Tyr Gly Asn Pro Gly Leu Asn Met Leu Lys Asn Glu Phe Ser Pro
 305 310 315 320
 Tyr Tyr Val Ala Gly Val Arg Leu Ser Trp Asn Phe Gly Ser Leu Tyr
 325 330 335
 Thr Leu Arg Asn Asp Arg Arg Val Ile Ala Ala Asn Arg Gln Leu Leu
 340 345 350
 Asp Ser Asn Arg Asp Val Phe Leu Phe Asn Thr Arg Leu Gln Ala Thr
 355 360 365
 Gln Gln Gly Ser Ala Val Glu Ser Val Arg Arg Gln Met Ala Asp Asp
 370 375 380
 Asp Glu Ile Ile Arg Leu Arg Thr Ser Ile Arg Lys Ala Ser Glu Ala
 385 390 395 400
 Lys Val Ala Asn Gly Thr Met Thr Val Thr Asp Met Leu Arg Asp Met
 405 410 415
 Thr Ser Glu Asn Leu Ala Arg Gln Thr Lys Ala Leu His Glu Val Gln
 420 425 430
 Leu Leu Met Asn Met Tyr Gln Leu Lys Tyr Thr Thr Asn Asn
 435 440 445

<210> 7274

<211> 431

<212> PRT

<213> B.fragilis

<400> 7274

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190

Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 7275

<211> 384

<212> PRT

<213> B.fragilis

<400> 7275

Thr Lys His Leu Leu Thr Thr Ser Ser Arg Cys Thr Asn Phe Lys Arg
 1 5 10 15
 Lys Val Asn Leu Asn Lys Glu Lys Ile Arg Met Lys Asn Val Thr Leu
 20 25 30
 Ile Leu Asp Asp Gly Ser Arg Phe His Gly Lys Ser Phe Gly Tyr Glu
 35 40 45
 Lys Pro Val Ala Gly Glu Val Val Phe Asn Thr Ala Met Thr Gly Tyr
 50 55 60
 Pro Glu Ser Leu Thr Asp Pro Ser Tyr Ala Gly Gln Leu Met Thr Leu
 65 70 75 80
 Thr Tyr Pro Leu Val Gly Asn Tyr Gly Val Pro Pro Phe Ser Ile Glu
 85 90 95
 Pro Asn Gly Leu Ala Thr Phe Met Glu Ser Glu Arg Ile His Ala Glu
 100 105 110
 Ala Ile Ile Val Ser Asp Tyr Ser Gln Glu Tyr Ser His Trp Asn Ala
 115 120 125
 Val Glu Ser Leu Ala Asp Trp Leu Lys Arg Glu Gln Val Pro Gly Ile
 130 135 140
 Thr Gly Ile Asp Thr Arg Glu Leu Thr Lys Val Leu Arg Glu His Gly
 145 150 155 160
 Val Met Met Gly Arg Ile Val Phe Asp Asp Glu Pro Glu Ser Ala Pro
 165 170 175

Glu	Ala	Val	Tyr	Ser	Gly	Val	Asn	Tyr	Val	Asp	Lys	Val	Ser	Cys	Lys
			180					185					190		
Glu	Val	Ile	Arg	Tyr	Asn	Glu	Gly	Ala	Asp	Lys	Lys	Lys	Val	Val	Leu
		195					200					205			
Val	Asp	Cys	Gly	Val	Lys	Thr	Asn	Ile	Ile	Arg	Cys	Leu	Leu	Arg	Arg
	210					215					220				
Asp	Val	Glu	Val	Ile	Arg	Val	Pro	Trp	Asn	Tyr	Asp	Phe	Asn	His	Leu
225					230					235				240	
Lys	Phe	Asp	Gly	Leu	Phe	Ile	Ser	Asn	Gly	Pro	Gly	Asp	Pro	Asp	Thr
			245						250					255	
Cys	Asp	Ala	Ala	Val	Gln	Asn	Ile	Arg	Lys	Ala	Met	Gln	Asn	Pro	Lys
		260						265					270		
Leu	Pro	Ile	Phe	Gly	Ile	Cys	Met	Gly	Asn	Gln	Leu	Leu	Ser	Lys	Ala
	275						280					285			
Gly	Gly	Ala	Lys	Ile	Tyr	Lys	Leu	Lys	Tyr	Gly	His	Arg	Ser	His	Asn
	290					295					300				
Gln	Pro	Val	Arg	Met	Val	Gly	Thr	Glu	Arg	Cys	Phe	Ile	Thr	Ser	Gln
305					310					315					320
Asn	His	Gly	Tyr	Ala	Val	Asp	Asn	Asn	Thr	Leu	Gly	Thr	Asp	Trp	Glu
			325						330					335	
Pro	Leu	Phe	Ile	Asn	Met	Asn	Asp	Gly	Ser	Asn	Glu	Gly	Ile	Arg	His
		340						345					350		
Lys	Thr	Asn	Pro	Trp	Phe	Ser	Ala	Gln	Phe	His	Pro	Glu	Ala	Ala	Ser
		355					360					365			
Gly	Pro	Thr	Asp	Thr	Glu	Phe	Leu	Phe	Asp	Glu	Phe	Val	Lys	Leu	Leu
	370					375					380				

<210> 7276

<211> 231

<212> PRT

<213> B.fragilis

<400> 7276

Ser	Leu	Val	Tyr	Arg	Met	Phe	Thr	Arg	Lys	Tyr	Leu	Leu	Cys	Glu	Thr
1			5						10					15	
Leu	Cys	His	Ser	Val	Val	Asn	Pro	Pro	Asn	Asn	Phe	Lys	Thr	Met	Asn
		20						25					30		
Asn	Glu	Ile	Asn	Thr	Leu	Asn	Arg	Gln	Lys	Gly	Ala	Ile	Leu	Leu	Leu
		35				40						45			
Asp	Asn	Tyr	Asp	Ser	Phe	Thr	Tyr	Asn	Leu	Leu	His	Val	Val	Lys	Glu
	50					55					60				
Gln	Gly	Val	Thr	Asp	Ile	Glu	Val	Phe	Arg	Asn	Asp	Glu	Ile	Thr	Leu
65					70					75				80	
Asp	Glu	Val	Glu	Arg	Phe	Asp	Lys	Ile	Ile	Leu	Ser	Pro	Gly	Pro	Gly
			85					90					95		
Ile	Pro	Glu	Glu	Ala	Gly	Leu	Leu	Leu	Pro	Ile	Ile	Arg	Lys	Tyr	Ala
		100						105					110		
Ala	Thr	Lys	Ser	Ile	Leu	Gly	Val	Cys	Leu	Gly	His	Gln	Ala	Ile	Gly
		115					120					125			
Glu	Ala	Phe	Gly	Ala	Thr	Leu	Glu	Asn	Leu	Thr	Glu	Val	Tyr	His	Gly
	130					135					140				
Val	Gln	Thr	Pro	Val	Ser	Ile	Leu	Lys	Glu	Asp	Ile	Leu	Phe	Arg	Gly
145					150					155					160
Leu	Gly	Arg	Glu	Ile	Pro	Val	Gly	Arg	Tyr	His	Ser	Trp	Val	Val	Ser
			165						170					175	
Arg	Lys	Asp	Phe	Pro	Gly	Cys	Leu	Glu	Ile	Thr	Ala	Glu	Ser	Arg	Glu
			180					185					190		
Gly	Gln	Ile	Met	Ala	Leu	Arg	His	Arg	Thr	Tyr	Asp	Val	His	Gly	Ile
	195						200					205			

Gln Phe His Pro Glu Ser Val Leu Thr Pro Gln Gly Lys Glu Ile Ile
 210 215 220
 Lys Asn Phe Leu Asn Asn Arg
 225 230

<210> 7277
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 7277
 Cys Trp Phe Leu Phe Leu Asn Lys Leu Tyr Leu Arg Asn Asn Ile Asn
 1 5 10 15
 Asn Lys Met Phe Lys Lys Ser Phe Leu Phe Lys Arg Ser Ile Ile Leu
 20 25 30
 Pro Tyr Ile Ser Cys Thr Tyr Asn Val His Leu Leu Gly Pro Lys Val
 35 40 45
 Gln Gly Pro Phe Tyr Ala Pro Ile Glu Ser Glu Lys Lys Asp Lys Lys
 50 55 60
 Thr Ala Ile Thr Ser Asn Asn Gln Ile Val Thr Asn Asn Asn Gln Gln
 65 70 75 80
 Lys Gln Trp Thr Lys Lys Ser Arg Lys Val Asn Ser Lys Lys Asn Thr
 85 90 95
 Ile

<210> 7278
 <211> 498
 <212> PRT
 <213> B.fragilis

<400> 7278
 Val Ser Ile Tyr Pro Leu Lys Gly Phe Phe Phe Gly Pro Pro Lys Lys
 1 5 10 15
 Tyr Val Trp Gly His Ala Tyr Asn Asn Ser Lys Pro Ser Leu Pro Ile
 20 25 30
 Phe Gln Ile Asn Tyr Leu His Leu Arg Ser Cys Lys Lys Thr Trp His
 35 40 45
 Leu Gln Thr Glu Arg Thr Gln His Lys Lys Thr Ser Thr Met Lys Lys
 50 55 60
 Ile Leu Phe Leu Leu Thr Ile Leu Val Ser Val Pro Ala Phe Ser Gln
 65 70 75 80
 Ser Ala Asp Glu Arg Ile Gly Ala Phe Leu Asn Gln Ala Asp Trp Phe
 85 90 95
 Gly Leu Glu Lys Asn Tyr Pro Ile Leu Lys Asp Ser Met Gln Ala Asp
 100 105 110
 Phe Leu Lys Leu Met Ser Glu Ala Leu Ile Gly Tyr Tyr Phe Asn Arg
 115 120 125
 Pro Asp Glu Ala Leu Gln Ser Ile His Lys Leu Leu Val Asn His Gln
 130 135 140
 Ala Glu Ile Gly Gly Gln Asn Ala Leu Asn Met Ala Ile Leu Ala Cys
 145 150 155 160
 Gln Ile Asp Gly Leu Lys Gly Asn Tyr Ala Thr Ala Ala Gln Asn Ser
 165 170 175
 Arg Ser Ile Met Glu Gln Leu Lys Gln Gln Asn Ala Glu Gln Gly Met
 180 185 190
 Tyr Lys Ser Leu Glu Gly Ile Cys Tyr Phe Tyr Asp Gln Leu Lys Asn
 195 200 205
 Ile Pro Ala Leu Gly Ile Thr Cys Pro Gln Glu Asp Ile Ile Ile Pro

210	215	220
Val Asp Ile Glu Lys	Val Lys Leu Pro Thr Ser	Ile Glu Pro Lys Gly
225	230	235
Trp Arg Gly Thr Thr	Ile Leu Ile Pro Val Thr	Ile Asn Gly Lys Thr
245	250	255
Tyr Gln Phe Ile Phe	Asp Thr Gly Ala Gly Thr	Ser Tyr Met Ser Gln
260	265	270
Arg Met Ala Lys Glu Thr	Gly Val Arg Ile Leu Ser	Asp Ser Leu Val
275	280	285
Ile Asn Ser Asn Leu Pro	Gly Ala Met Thr Gly	Asn Phe Gly Thr Leu
290	295	300
Glu Asn Met Gln Ile Gly	Ser Ile Thr Phe His	Asn Ser Leu Ile Thr
305	310	315
Ile Ala Pro Pro Asn Ala	Phe Asp Ser Ile Met	Ile Val Asp Ala Val
325	330	335
Leu Gly Met Asp Phe Ile	Gly Leu Phe Asp Glu	Val Arg Ile Tyr Pro
340	345	350
Lys Asp Lys Lys Ile Val	Phe Pro Lys Ser Ser	Thr Pro Leu Pro Ser
355	360	365
Tyr Gly Arg Asn Leu Met	Lys Val Asp Arg Ala	Leu Lys Leu Lys Ala
370	375	380
Gln Ala Asn Gly Glu Thr	Leu Met Leu His Phe	Asp Thr Gly Asn Ser
385	390	395
Thr Ala Gly Leu Phe Tyr	Gln Tyr Tyr Glu Lys	His Lys Thr Glu Phe
405	410	415
Glu Ser Ile Gly Lys Lys	Glu Lys Ile Thr Gly	Gly Gly Phe Asn His
420	425	430
Val Val Thr Lys Asp Ile	Leu Arg Leu Pro Ser	Phe Asp Met Glu Ile
435	440	445
Gly Asp Ala Thr Ala His	Leu Lys Asn Leu Ala	Val Asp Ile Thr Pro
450	455	460
Asn Gly Ile Pro Ala Glu	Asp Asp Gly Asn Ile	Gly Met Asp Met Ile
465	470	475
Asn Gln Phe Asp Cys Val	Thr Ile Asn Leu Lys	Asp Met Phe Leu Lys
485	490	495
Leu Glu		

<210> 7279

<211> 362

<212> PRT

<213> B.fragilis

<400> 7279

Asn Cys Tyr Leu Cys Arg Glu Asn Ser Lys Asn Asp Thr Asp Met Lys
1 5 10 15
Ala Asp Tyr Pro Ser Val Leu Leu Ile Tyr Thr Gly Gly Thr Ile Gly
20 25 30
Met Ile Glu Asn Pro Glu Thr Gly Ala Leu Glu Asn Phe Asn Phe Asp
35 40 45
His Leu Leu Lys His Val Pro Glu Leu Lys Arg Phe Asn Tyr Arg Ile
50 55 60
Ser Ser Tyr Gln Phe Asp Pro Pro Ile Asp Ser Ser Asp Met Glu Pro
65 70 75 80
Ala Phe Trp Ala Lys Leu Val Glu Ile Ile Asn Tyr Asn Tyr Asp Ser
85 90 95
Phe Asp Gly Phe Val Ile Leu His Gly Thr Asp Thr Met Ala Tyr Thr
100 105 110
Ala Ser Ala Leu Ser Phe Met Leu Glu Asn Leu Ser Lys Pro Val Ile

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      115              120              125
Leu Thr Gly Ser Gln Leu Pro Ile Gly Thr Leu Arg Thr Asp Gly Lys
      130              135              140
Glu Asn Leu Ile Thr Ala Ile Glu Ile Ala Ala Ala Lys Asn Pro Asp
145              150              155              160
Gly Thr Ala Ile Val Pro Glu Val Cys Ile Phe Phe Glu Asn His Leu
      165              170              175
Met Arg Gly Asn Arg Thr Thr Lys Ile Asn Ala Glu Asn Phe Asn Ala
      180              185              190
Phe Arg Ser Phe Asn Tyr Pro Pro Leu Ala Arg Val Gly Ile His Ile
      195              200              205
Lys Tyr Glu Pro Asn Leu Ile Arg Lys Pro Asp Leu Ser Lys Pro Leu
      210              215              220
Lys Pro His Tyr Leu Phe Asp Thr Asn Val Val Ile Leu Thr Leu Phe
225              230              235              240
Pro Gly Ile Gln Glu Gly Ile Val Ser Ala Leu Leu His Val Pro Gly
      245              250              255
Leu Lys Ala Val Val Leu Lys Thr Phe Gly Ser Gly Asn Ala Pro Gln
      260              265              270
Lys Glu Trp Phe Ile Arg Glu Leu Lys Asp Ala Thr Asp Arg Gly Ile
      275              280              285
Ile Ile Val Asn Ile Thr Gln Cys Ala Ser Gly Ala Val Glu Met Glu
      290              295              300
Arg Tyr Gly Thr Gly Ile Gln Leu Leu Gln Ala Gly Val Ile Ser Gly
305              310              315              320
Tyr Asp Ser Thr Pro Glu Cys Ala Val Thr Lys Leu Met Phe Leu Leu
      325              330              335
Gly His Gly Leu Asp Asn Lys Glu Ile Arg Tyr Lys Met Asn Ser Cys
      340              345              350
Leu Ile Gly Glu Ile Thr Lys Arg Val Glu
      355              360

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<210> 7280

<211> 386

<212> PRT

<213> B.fragilis

<400> 7280

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Met Leu His Leu Ile Tyr Ile Gly Arg His Ala Asp Thr Ile Glu Gln
1              5              10              15
Phe Ser Lys Ile Ala Glu Gly Ala Phe Tyr Ala Ile Gln Asn Ser Arg
      20              25              30
Lys Ala Ser Glu Phe Ile Asp Lys Ile Arg Glu Lys Tyr Asp Ile Val
      35              40              45
Ile Leu Phe Glu Gln Arg Ile Ile Ser Lys Asp Ile Pro Glu Ile Gln
      50              55              60
Tyr Leu Arg Lys Lys Phe Pro Gly Val Tyr Ile Ala Leu Val Thr Glu
65              70              75              80
Gly Ile Asn Lys Glu Asp Arg Pro Ala Tyr Leu Lys Ala Gly Ile Asn
      85              90              95
Asn Ser Ile Pro Phe Asn Ser Thr Pro Glu Thr Phe Lys Asp Ile Thr
      100              105              110
Glu Phe Met Met Arg Arg Lys Gln Gln Lys Ile Asn Asp Ile His Lys
      115              120              125
Lys Gly Ala Asn Leu Leu Phe Phe Lys Leu Pro Leu Trp Lys Arg Leu
      130              135              140
Phe Asp Ile Val Phe Ser Ser Ile Ala Ile Leu Cys Leu Ser Pro Ile
145              150              155              160
Leu Ile Ile Thr Ala Val Ala Ile Arg Leu Glu Ser Lys Gly Ala Val

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<210> 7281
<211> 140
<212> PRT
<213> B.fragilis
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Arg	Cys	Tyr	His	Tyr	Ile	Pro	Ile	Asn	Arg	Asp	Cys	Ser	Ile	Met	Glu
1				5					10					15	
Asn	Phe	Tyr	Leu	Cys	Pro	Lys	Leu	Asn	Gly	Met	Asn	Gln	Gly	Ser	Leu
			20					25					30		
Lys	Ile	Met	Arg	Gly	Phe	Arg	Pro	Val	Leu	Phe	Asn	Trp	Asp	Met	Pro
		35					40					45			
Gly	Ile	Thr	Leu	Phe	Thr	His	Ser	His	Val	Val	Asn	Gly	Val	Thr	Met
		50				55					60				
Val	His	Ser	His	Pro	Phe	Lys	Lys	Ala	Ser	Pro	His	Ser	His	Thr	Pro
65					70					75					80
Val	Glu	Phe	Gln	Leu	Ile	His	Leu	Leu	Asn	His	Val	Val	Thr	Thr	Glu
				85					90					95	
Ala	Gly	Ile	Phe	Phe	Leu	Ser	Leu	Gln	Phe	Ile	Ala	Cys	Leu	Leu	Tyr
			100					105					110		
Thr	Leu	Ser	Trp	Arg	Pro	Asp	Arg	Ala	Gly	Tyr	Cys	Ser	Ser	Val	Val
		115					120					125			
Gly	Val	Val	Ser	Leu	Arg	Ala	Pro	Pro	Ala	Gly	Arg				
		130				135					140				

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<210> 7282
<211> 300
<212> PRT
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<400> 7282

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Leu His Leu His Lys Leu Lys Ile Lys Met Lys Lys Leu Phe Ala Leu
1          5          10          15
Leu Phe Ile Ser Met Ile Ser Gly Met Ile Met Ala Gln Ile Pro Glu
20          25          30
Val Ser Gly Thr Ile Val Phe Lys Lys Asp Gly Gln Pro Val Val Gly
35          40          45
Ala Leu Val Ser Val Leu Gly Thr Asp Ile Ser Thr Ile Thr Asp Val
50          55          60
Asp Gly Arg Phe Thr Leu Lys Glu Ile Pro Glu Lys Ala Gln Arg Ile
65          70          75          80
Arg Val Lys Tyr Ile Gly Met Gln Pro Lys Asp Val Lys Ile Arg Pro
85          90          95
Ile Met Asn Val Thr Leu Asp Leu Glu Lys Lys Leu Ala Phe Phe Ile
100         105         110
Gln Ala Gly Val Gly Val Ser Gly Tyr Asn Leu Glu Asn Asn Asn Glu
115         120         125
Asp Ile Tyr Gly Gly Asn Asn His Leu Tyr Ile Gln Gly Gly Val Gly
130         135         140
Leu Asn Tyr Asn Phe Ser Thr Tyr Phe Ser Leu Gln Pro Ser Val Asn
145         150         155         160
Val Val Ala Lys Gly Cys Lys Asn Met Gly Arg Arg Gly Ser Asp Gly
165         170         175
Gln Gly Glu Ile Thr Val Asp Pro Val Tyr Leu Glu Ile Pro Val Leu
180         185         190
Ile Ala Ala Arg Phe Ile Ile Ser Asp Phe Gly Arg Leu Ile Phe Asn
195         200         205
Ala Gly Pro Tyr Ala Ala Ile Gly Ile Ala Gly Lys Gly Lys Tyr Thr
210         215         220
Asp Glu Trp Glu Gly Thr Ser Met Lys Phe Asp Leu Phe Ser Gly Asp
225         230         235         240
Glu Ala Val Leu Lys Arg Phe Asp Ala Gly Val Gln Ala Gly Phe Ala
245         250         255
Tyr Glu Ile Lys His Ile Gly Phe Ser Tyr Thr Phe Gly Tyr Gly Leu
260         265         270
Leu Lys Pro Phe Lys Glu Trp Asn Lys Glu Trp Gly Ala Thr Pro His
275         280         285
Asn Ile Ser His Asn Phe Gly Leu Lys Tyr Ile Phe
290         295         300

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<210> 7283

<211> 401

<212> PRT

<213> B.fragilis

<400> 7283

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Pro Gln Ile Gln Ile Thr Asn Lys Tyr Arg Ile Met Lys Ser Phe Leu
1          5          10          15
Val Asp Gln Asp Gly Tyr Tyr Gly Glu Phe Gly Gly Ala Tyr Val Pro
20          25          30
Glu Ile Leu His Lys Cys Val Glu Glu Leu Gln Asn Thr Tyr Leu Asp
35          40          45
Val Ile Glu Ser Glu Asp Phe Lys Lys Glu Phe Asp Gln Leu Leu Arg
50          55          60
Asp Tyr Val Gly Arg Pro Ser Pro Leu Tyr Pro Ala Arg Arg Leu Ser
65          70          75          80
Glu Lys Tyr Gly Cys Lys Met Tyr Leu Lys Arg Glu Asp Leu Asn His
85          90          95

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Thr Gly Ala His Lys Ile Asn Asn Thr Ile Gly Gln Ile Leu Leu Ala
 100 105 110
 Arg Arg Met Gly Lys Lys Arg Ile Ile Ala Glu Thr Gly Ala Gly Gln
 115 120 125
 His Gly Val Ala Thr Ala Thr Val Cys Ala Leu Met Asn Met Glu Cys
 130 135 140
 Ile Val Tyr Met Gly Lys Thr Asp Val Glu Arg Gln His Ile Asn Val
 145 150 155 160
 Glu Lys Met Lys Met Leu Gly Ala Thr Val Val Pro Val Thr Ser Gly
 165 170 175
 Asn Met Thr Leu Lys Asp Ala Thr Asn Glu Ala Ile Arg Asp Trp Cys
 180 185 190
 Cys His Pro Ser Asp Thr Tyr Tyr Ile Ile Gly Ser Thr Val Gly Pro
 195 200 205
 His Pro Tyr Pro Asp Met Val Ala Arg Leu Gln Ser Val Ile Ser Glu
 210 215 220
 Glu Ile Lys Lys Gln Leu Gln Glu Lys Glu Gly Arg Asp Tyr Pro Asp
 225 230 235 240
 Tyr Leu Ile Ala Cys Val Gly Gly Gly Ser Asn Ala Ala Gly Thr Ile
 245 250 255
 Tyr His Tyr Ile Asp Asp Glu Arg Val Arg Ile Val Leu Ala Glu Ala
 260 265 270
 Gly Gly Lys Gly Ile Glu Thr Gly Met Thr Ala Ala Thr Ile Gln Leu
 275 280 285
 Gly Lys Met Gly Ile Ile His Gly Ala Arg Thr Phe Val Ile Gln Asn
 290 295 300
 Glu Asp Gly Gln Ile Glu Glu Pro Tyr Ser Ile Ser Ala Gly Leu Asp
 305 310 315 320
 Tyr Pro Gly Ile Gly Pro Met His Ala Asn Leu Ala Asp Lys Lys Arg
 325 330 335
 Ala Met Val Leu Ala Val Asn Asp Asp Glu Ala Ile Arg Ala Ala Tyr
 340 345 350
 Glu Leu Thr Arg Leu Glu Gly Ile Ile Pro Ala Leu Glu Ser Ala His
 355 360 365
 Ala Leu Gly Ala Leu Glu Lys Ile Thr Phe Lys Pro Glu Asp Val Val
 370 375 380
 Val Leu Thr Val Ser Gly Arg Gly Asp Lys Asp Ile Glu Thr Tyr Leu
 385 390 395 400
 Gly

<210> 7284

<211> 90

<212> PRT

<213> B.fragilis

<400> 7284

Ile Ser Lys Gln Ser Arg Thr Lys Phe Arg Gln Ile Leu Lys His Pro
 1 5 10 15
 Glu Ile Lys Met Ile Lys Ala Phe Leu Lys Lys Asn Arg Leu Thr Phe
 20 25 30
 Ile Gly Leu Val Ile Gly Ala Val Gly Gly Phe Leu Tyr Trp Lys Tyr
 35 40 45
 Val Gly Cys Thr Ser Gly Thr Cys Pro Ile Thr Ser Ser Pro Val Asn
 50 55 60
 Ser Thr Leu Trp Gly Ala Val Met Gly Gly Leu Leu Leu Asn Leu Phe
 65 70 75 80
 Lys Thr Asp Ser Thr Pro Lys Lys Thr Asn
 85 90

<400> 7285

<210> 7286

<400> 7286

<210> 7287

<400> 7287

Pro	Met	Asp	Asn	Phe	Ile	Phe	Gln	Asn	Pro	Val	Lys	Leu	Ile	Met	Gly
1				5					10					15	
Arg	Gly	Met	Ile	Ser	Arg	Leu	Ser	Glu	Glu	Ile	Pro	Ala	Asp	Lys	Arg
			20					25					30		
Val	Met	Ile	Thr	Phe	Gly	Gly	Gly	Ser	Val	Lys	Lys	Asn	Gly	Val	Tyr
		35				40						45			
Asp	Gln	Val	Lys	Glu	Ala	Leu	Lys	Asn	His	Phe	Thr	Val	Glu	Phe	Trp
	50					55					60				
Gly	Ile	Glu	Pro	Asn	Pro	Ser	Ile	Glu	Thr	Leu	Arg	Lys	Ala	Ile	Ala
65					70					75				80	
Leu	Gly	Lys	Glu	Glu	Lys	Val	Asp	Tyr	Leu	Leu	Ala	Val	Gly	Gly	Gly
				85					90					95	

Ser Val Ile Asp Gly Thr Lys Leu Ile Ser Ala Gly Leu Leu Tyr Asp
 100 105 110
 Gly Asp Ala Trp Asp Leu Val Leu Ala Gly Arg Pro Val Thr His Thr
 115 120 125
 Val Pro Leu Ala Thr Val Leu Thr Leu Pro Ala Thr Gly Ser Glu Met
 130 135 140
 Asn Ser Gly Ala Val Ile Ser Arg His Glu Thr Lys Glu Lys Tyr Pro
 145 150 155 160
 Phe Tyr Ser Asn Tyr Pro Leu Phe Ser Ile Leu Asp Pro Glu Val Thr
 165 170 175
 Phe Thr Leu Pro Pro His Gln Val Ala Cys Gly Ile Ala Asp Thr Phe
 180 185 190
 Val His Val Met Glu Gln Tyr Met Thr Thr Pro Gly Gln Ser Arg Val
 195 200 205
 Met Asp Arg Trp Ala Glu Gly Ile Leu Gln Thr Leu Met Glu Ile Ala
 210 215 220
 Pro Lys Ile Arg Glu Asn Gln His Asp Tyr Gln Leu Met Ser Asp Phe
 225 230 235 240
 Met Leu Ser Ala Thr Met Ala Leu Asn Gly Phe Ile Ala Met Gly Val
 245 250 255
 Ser Gln Asp Trp Ala Thr His Met Ile Gly His Glu Leu Thr Ala Leu
 260 265 270
 His Gly Leu Thr His Gly His Thr Leu Val Ile Val Phe Pro Gly Thr
 275 280 285
 Leu Arg Val Leu Arg Lys Ala Lys Gly Asp Lys Ile Leu Gln Tyr Gly
 290 295 300
 Glu Arg Val Leu Gly Ile Thr Ser Gly Ser Arg Asp Glu Arg Ile Asp
 305 310 315 320
 Glu Ala Ile Arg Arg Thr Glu Glu Phe Phe Arg Ser Leu Gly Leu Thr
 325 330 335
 Thr Arg Leu Ser Glu Glu Gly Ile Gly Met Glu Thr Ile Asp Glu Ile
 340 345 350
 Glu Arg Arg Phe Asn Glu Arg Gly Val Arg Tyr Gly Glu Asn Glu Asp
 355 360 365
 Val Thr Gly Ala Val Ala Lys Glu Ile Leu Lys Ser Ser Leu
 370 375 380

<210> 7288

<211> 1084

<212> PRT

<213> B.fragilis

<400> 7288

Thr Lys Leu Lys Asn Ile Ile Ile Met Lys Glu Asn Asn Ile Lys Lys
 1 5 10 15
 Val Leu Leu Leu Gly Ser Gly Ala Leu Lys Ile Gly Glu Ala Gly Glu
 20 25 30
 Phe Asp Tyr Ser Gly Ser Gln Ala Leu Lys Ala Leu Lys Glu Glu Gly
 35 40 45
 Ile Glu Thr Ile Leu Ile Asn Pro Asn Ile Ala Thr Val Gln Thr Ser
 50 55 60
 Glu Gly Val Ala Asp Gln Ile Tyr Phe Leu Pro Val Thr Pro Tyr Phe
 65 70 75 80
 Val Glu Lys Val Ile Arg Lys Glu Arg Pro Glu Gly Ile Met Leu Ala
 85 90 95
 Phe Gly Gly Gln Thr Ala Leu Asn Cys Gly Val Ala Leu Tyr Arg Glu
 100 105 110
 Gly Ile Leu Glu Lys Tyr Asn Val Lys Val Leu Gly Thr Pro Val Gln
 115 120 125

Ala Ile Ile Asp Thr Glu Asp Arg Glu Leu Phe Val Asp Lys Leu Asn
 130 135 140
 Glu Ile Asp Val Lys Thr Ile Lys Ser Glu Ala Val Glu Asn Ala Glu
 145 150 155 160
 Asp Ala Arg Arg Ala Ala Arg Glu Leu Gly Tyr Pro Val Ile Val Arg
 165 170 175
 Ala Ala Tyr Ala Leu Gly Gly Leu Gly Ser Gly Phe Cys Asp Asn Glu
 180 185 190
 Glu Glu Leu Asp Leu Leu Val Glu Lys Ala Phe Ser Phe Ser Pro Gln
 195 200 205
 Val Leu Val Glu Lys Ser Leu Arg Gly Trp Lys Glu Val Glu Tyr Glu
 210 215 220
 Val Val Arg Asp Arg Phe Asp Asn Cys Ile Thr Val Cys Asn Met Glu
 225 230 235 240
 Asn Phe Asp Pro Leu Gly Ile His Thr Gly Glu Ser Ile Val Ile Ala
 245 250 255
 Pro Ser Gln Thr Leu Thr Asn Lys Glu Tyr His Lys Leu Arg Glu Leu
 260 265 270
 Ala Ile Arg Ile Ile Arg His Ile Gly Ile Val Gly Glu Cys Asn Val
 275 280 285
 Gln Tyr Ala Phe Asp Pro Glu Ser Glu Asp Tyr Arg Val Ile Glu Val
 290 295 300
 Asn Ala Arg Leu Ser Arg Ser Ser Ala Leu Ala Ser Lys Ala Thr Gly
 305 310 315 320
 Tyr Pro Leu Ala Phe Val Ala Ala Lys Leu Gly Leu Gly Tyr Gly Leu
 325 330 335
 Phe Asp Leu Lys Asn Ser Val Thr Lys Thr Thr Ser Ala Phe Phe Glu
 340 345 350
 Pro Ala Leu Asp Tyr Val Val Cys Lys Ile Pro Arg Trp Asp Leu Gly
 355 360 365
 Lys Phe His Gly Val Asp Lys Glu Leu Gly Ser Ser Met Lys Ser Val
 370 375 380
 Gly Glu Val Met Ala Ile Gly Arg Thr Phe Glu Glu Ala Ile Gln Lys
 385 390 395 400
 Gly Leu Arg Met Ile Gly Gln Gly Met His Gly Phe Val Glu Asn Lys
 405 410 415
 Glu Leu Val Ile Pro Asp Ile Asp Lys Ala Leu His Glu Pro Thr Asp
 420 425 430
 Lys Arg Ile Phe Val Ile Ser Lys Ala Phe Arg Ala Gly Tyr Thr Ile
 435 440 445
 Asp Gln Val His Glu Leu Thr Lys Ile Asp Lys Trp Phe Leu Gln Lys
 450 455 460
 Leu Met Asn Ile Met Asn Thr Ser Glu Glu Leu His Gln Trp Gly Asn
 465 470 475 480
 Asn His Lys Gln Ile Ala Asp Leu Pro Ala Asp Leu Leu Lys Gln Ala
 485 490 495
 Lys Arg Gln Gly Phe Ser Asp Phe Gln Ile Ala Arg Ala Ile Gly Tyr
 500 505 510
 Glu Gly Asp Met Glu Asp Gly Ser Leu Tyr Val Arg Asn Tyr Arg Lys
 515 520 525
 Ser Leu Gly Ile Val Pro Val Val Lys Gln Ile Asp Thr Leu Ala Ala
 530 535 540
 Glu Tyr Pro Ala Gln Thr Asn Tyr Leu Tyr Leu Thr Tyr Ser Gly Thr
 545 550 555 560
 Ala Asn Asp Val Thr Tyr Leu Gly Asp His Arg Ser Ile Val Val Leu
 565 570 575
 Gly Ser Gly Ala Tyr Arg Ile Gly Ser Ser Val Glu Phe Asp Trp Cys
 580 585 590
 Gly Val Gln Ala Leu Asn Thr Ile Arg Lys Glu Gly Trp Arg Ser Val

595				600				605							
Met	Ile	Asn	Tyr	Asn	Pro	Glu	Thr	Val	Ser	Thr	Asp	Tyr	Asp	Met	Cys
610				615				620							
Asp	Arg	Leu	Tyr	Phe	Asp	Glu	Leu	Thr	Phe	Glu	Arg	Val	Met	Asp	Val
625				630				635				640			
Leu	Glu	Leu	Glu	Asn	Pro	Tyr	Gly	Val	Ile	Val	Ser	Thr	Gly	Gly	Gln
645				650				655							
Ile	Pro	Asn	Asn	Leu	Ala	Leu	Arg	Leu	Asp	Ala	Gln	Asn	Ile	His	Ile
660				665				670							
Leu	Gly	Thr	Ser	Ala	Gln	Ser	Ile	Asp	Asn	Ala	Glu	Asp	Arg	Asp	Lys
675				680				685							
Phe	Ser	Ala	Met	Leu	Asp	Arg	Ile	Gly	Val	Asp	Gln	Pro	Glu	Trp	Arg
690				695				700							
Ala	Leu	Thr	Ser	Leu	Glu	Asp	Ile	Asn	Ser	Phe	Val	Asp	Lys	Val	Gly
705				710				715				720			
Phe	Pro	Val	Leu	Val	Arg	Pro	Ser	Tyr	Val	Leu	Ser	Gly	Ala	Ala	Met
725				730				735							
Asn	Val	Cys	Ser	Asn	Gln	Glu	Glu	Leu	Glu	Arg	Phe	Leu	Gln	Leu	Ala
740				745				750							
Ala	Asn	Val	Ser	Lys	Lys	His	Pro	Val	Val	Val	Ser	Gln	Phe	Ile	Glu
755				760				765							
His	Ala	Lys	Glu	Val	Glu	Met	Asp	Ala	Val	Ala	Gln	Asn	Gly	Glu	Ile
770				775				780							
Ile	Ala	Tyr	Ala	Ile	Ser	Glu	His	Ile	Glu	Phe	Ala	Gly	Val	His	Ser
785				790				795				800			
Gly	Asp	Ala	Thr	Ile	Gln	Phe	Pro	Pro	Gln	Lys	Leu	Tyr	Val	Glu	Thr
805				810				815							
Val	Arg	Arg	Ile	Lys	Arg	Ile	Ser	Arg	Glu	Ile	Ala	Lys	Ala	Leu	Asn
820				825				830							
Ile	Ser	Gly	Pro	Phe	Asn	Ile	Gln	Tyr	Leu	Ala	Lys	Asp	Asn	Asp	Ile
835				840				845							
Lys	Val	Ile	Glu	Cys	Asn	Leu	Arg	Ala	Ser	Arg	Ser	Phe	Pro	Phe	Val
850				855				860							
Ser	Lys	Val	Leu	Lys	Ile	Asn	Phe	Ile	Glu	Leu	Ala	Thr	Lys	Val	Met
865				870				875				880			
Leu	Gly	Leu	Pro	Val	Glu	Lys	Pro	Glu	Lys	Asn	Leu	Phe	Glu	Leu	Asp
885				890				895							
Tyr	Val	Gly	Ile	Lys	Ala	Ser	Gln	Phe	Ser	Phe	Asn	Arg	Leu	Gln	Lys
900				905				910							
Ala	Asp	Pro	Val	Leu	Gly	Val	Asp	Met	Ala	Ser	Thr	Gly	Glu	Val	Gly
915				920				925							
Cys	Ile	Gly	Ser	Asp	Thr	Ser	Cys	Ala	Val	Leu	Lys	Ala	Met	Leu	Ser
930				935				940							
Val	Gly	Tyr	Arg	Ile	Pro	Lys	Lys	Lys	Ile	Leu	Leu	Ser	Thr	Gly	Thr
945				950				955				960			
Pro	Lys	Gln	Lys	Val	Asp	Met	Leu	Glu	Ala	Ala	Arg	Met	Leu	Gln	Lys
965				970				975							
Lys	Gly	Tyr	Asp	Ile	Phe	Ala	Thr	Gly	Gly	Ser	Ser	Lys	Phe	Leu	Thr
980				985				990							
Glu	Asn	Gly	Val	Glu	Asn	Thr	Arg	Val	Tyr	Trp	Pro	Ser	Glu	Glu	Gly
995				1000				1005							
His	Pro	Gln	Ala	Leu	Glu	Met	Leu	His	Lys	Lys	Glu	Ile	Asp	Met	Val
1010				1015				1020							
Val	Asn	Ile	Pro	Lys	Asn	Leu	Thr	Ala	Gly	Glu	Leu	Asp	Asn	Gly	Tyr
1025				1030				1035				1040			
Lys	Ile	Arg	Arg	Ala	Ala	Ile	Asp	Leu	Asn	Ile	Pro	Leu	Ile	Thr	Asn
1045				1050				1055							
Ala	Arg	Leu	Ala	Ser	Ala	Phe	Ile	Asn	Ala	Phe	Cys	Thr	Met	Asp	Ile
1060				1065				1070							

Asp Asp Ile Ala Ile Lys Ser Trp Glu Glu Tyr Lys
 1075 1080

<210> 7289
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 <212> PRT
 <213> B.fragilis

<400> 7289

Asn	Ile	Asn	Asn	Met	Thr	Asn	Glu	Leu	Glu	Leu	Lys	Tyr	Gly	Cys	Asn
1				5					10					15	
Pro	Asn	Gln	Lys	Pro	Ala	Arg	Ile	Phe	Ile	Lys	Glu	Gly	Glu	Leu	Pro
			20					25					30		
Ile	Glu	Val	Leu	Asn	Gly	Arg	Pro	Gly	Tyr	Ile	Asn	Leu	Leu	Asp	Ala
		35					40					45			
Leu	Asn	Ser	Trp	Gln	Leu	Val	Lys	Glu	Leu	Lys	Glu	Ala	Thr	Gly	Leu
	50					55					60				
Pro	Ala	Ala	Ala	Ser	Phe	Lys	His	Val	Ser	Pro	Ala	Gly	Ala	Ala	Val
65					70					75				80	
Ala	Val	Glu	Met	Asn	Asp	Thr	Leu	Lys	Lys	Ile	Tyr	Phe	Val	Asp	Asp
				85					90					95	
Met	Glu	Leu	Ser	Pro	Met	Ala	Thr	Ala	Tyr	Ala	Arg	Ala	Arg	Gly	Ala
			100					105					110		
Asp	Arg	Met	Ser	Ser	Tyr	Gly	Asp	Phe	Ile	Ala	Leu	Ser	Asp	Ile	Cys
	115						120						125		
Asp	Glu	Pro	Thr	Ala	Arg	Ile	Ile	Asn	Arg	Glu	Val	Ser	Asp	Gly	Val
	130					135					140				
Ile	Ala	Pro	Gly	Tyr	Thr	Pro	Glu	Ala	Leu	Glu	Ile	Leu	Arg	Asn	Lys
145					150					155				160	
Arg	Lys	Gly	Thr	Tyr	Asn	Val	Ile	Lys	Ile	Asp	Pro	Ala	Tyr	Arg	Pro
				165					170					175	
Ala	Pro	Ile	Glu	His	Lys	Asp	Val	Phe	Gly	Ile	Thr	Phe	Glu	Gln	Gly
			180					185					190		
Arg	Asn	Glu	Leu	Lys	Ile	Asp	Glu	Ser	Leu	Leu	Lys	Glu	Met	Pro	Thr
	195					200						205			
Arg	Asn	Arg	Ile	Ile	Pro	Ala	Asp	Ala	Gln	Arg	Asp	Leu	Ile	Ile	Ala
	210					215					220				
Leu	Ile	Thr	Leu	Lys	Tyr	Thr	Gln	Ser	Asn	Ser	Val	Cys	Tyr	Ala	Lys
225				230						235				240	
Asp	Gly	Gln	Ala	Ile	Gly	Ile	Gly	Ala	Gly	Gln	Gln	Ser	Arg	Ile	His
				245					250					255	
Cys	Thr	Arg	Leu	Ala	Gly	Asn	Lys	Ala	Asp	Ile	Trp	Tyr	Leu	Arg	Gln
			260					265					270		
His	Pro	Lys	Val	Met	Asn	Leu	Pro	Trp	Lys	Glu	Lys	Ile	Arg	Arg	Ala
		275					280					285			
Asp	Arg	Asp	Asn	Thr	Ile	Asp	Val	Tyr	Ile	Ser	Asp	Asp	Tyr	Met	Asp
	290					295					300				
Val	Leu	Ala	Asp	Gly	Val	Trp	Glu	Gln	Phe	Phe	Thr	Arg	Lys	Pro	Glu
305					310					315				320	
Val	Leu	Thr	Arg	Glu	Lys	Arg	Ala	Trp	Leu	Asp	Thr	Gln	Ser	Gly	
			325					330					335		
Val	Ala	Leu	Gly	Ser	Asp	Ala	Phe	Phe	Pro	Phe	Gly	Asp	Asn	Ile	Glu
		340						345				350			
Arg	Ala	His	Lys	Ser	Gly	Val	Ser	Tyr	Ile	Ala	Gln	Pro	Gly	Gly	Ser
		355					360					365			
Val	Arg	Asp	Asp	His	Val	Ile	Glu	Thr	Cys	Asp	Lys	Tyr	Asp	Ile	Ala
	370					375					380				
Met	Ala	Phe	Thr	Gly	Ile	Arg	Leu	Phe	His	His					
385					390						395				

1075 1080 1090 1100 1110 1120 1130 1140 1150 1160 1170 1180 1190 1200 1210 1220 1230 1240 1250 1260 1270 1280 1290 1300 1310 1320 1330 1340 1350 1360 1370 1380 1390 1400 1410 1420 1430 1440 1450 1460 1470 1480 1490 1500 1510 1520 1530 1540 1550 1560 1570 1580 1590 1600 1610 1620 1630 1640 1650 1660 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020 2030 2040 2050 2060 2070 2080 2090 2100 2110 2120 2130 2140 2150 2160 2170 2180 2190 2200 2210 2220 2230 2240 2250 2260 2270 2280 2290 2300 2310 2320 2330 2340 2350 2360 2370 2380 2390 2400 2410 2420 2430 2440 2450 2460 2470 2480 2490 2500 2510 2520 2530 2540 2550 2560 2570 2580 2590 2600 2610 2620 2630 2640 2650 2660 2670 2680 2690 2700 2710 2720 2730 2740 2750 2760 2770 2780 2790 2800 2810 2820 2830 2840 2850 2860 2870 2880 2890 2900 2910 2920 2930 2940 2950 2960 2970 2980 2990 3000 3010 3020 3030 3040 3050 3060 3070 3080 3090 3100 3110 3120 3130 3140 3150 3160 3170 3180 3190 3200 3210 3220 3230 3240 3250 3260 3270 3280 3290 3300 3310 3320 3330 3340 3350 3360 3370 3380 3390 3400 3410 3420 3430 3440 3450 3460 3470 3480 3490 3500 3510 3520 3530 3540 3550 3560 3570 3580 3590 3600 3610 3620 3630 3640 3650 3660 3670 3680 3690 3700 3710 3720 3730 3740 3750 3760 3770 3780 3790 3800 3810 3820 3830 3840 3850 3860 3870 3880 3890 3900 3910 3920 3930 3940 3950 3960 3970 3980 3990 4000

<210> 7290
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<400> 7290

Asn	Lys	Asn	Asn	Met	Ala	Leu	Val	Asn	Glu	His	Phe	Leu	Lys	Leu	Pro
1				5					10					15	
Gly	Ser	Tyr	Leu	Phe	Ser	Asp	Ile	Ala	Lys	Lys	Val	Asn	Thr	Phe	Lys
			20					25				30			
Ile	Thr	His	Pro	Lys	Arg	Asp	Ile	Ile	Arg	Leu	Gly	Ile	Gly	Asp	Val
		35					40					45			
Thr	Arg	Pro	Leu	Pro	Lys	Ala	Cys	Ile	Glu	Ala	Met	His	Lys	Ala	Val
	50					55					60				
Glu	Glu	Met	Thr	Ser	Ala	Glu	Thr	Phe	Arg	Gly	Tyr	Gly	Pro	Glu	Gln
65					70				75					80	
Gly	Tyr	Asp	Phe	Leu	Ile	Glu	Ala	Ile	Ile	Lys	Asn	Asp	Tyr	Ala	Pro
			85						90					95	
Arg	Gly	Ile	His	Leu	Ser	Pro	Thr	Glu	Val	Phe	Val	Asn	Asp	Gly	Ala
		100					105						110		
Lys	Ser	Asp	Thr	Gly	Asn	Ile	Gly	Asp	Ile	Leu	Arg	His	Asp	Asn	Ser
	115					120						125			
Val	Gly	Val	Thr	Asp	Pro	Ile	Tyr	Pro	Val	Tyr	Ile	Asp	Ser	Asn	Val
130						135					140				
Met	Cys	Gly	Arg	Ala	Gly	Val	Leu	Asp	Thr	Glu	Ser	Gly	Lys	Trp	Ser
145					150				155					160	
Asn	Val	Thr	Tyr	Met	Pro	Cys	Thr	Ala	Glu	Asn	His	Phe	Ile	Pro	Ala
			165					170						175	
Ile	Pro	Glu	Lys	Arg	Ile	Asp	Ile	Val	Tyr	Leu	Cys	Tyr	Pro	Asn	Asn
		180					185						190		
Pro	Thr	Gly	Thr	Thr	Leu	Thr	Lys	Ala	Glu	Leu	Lys	Lys	Trp	Val	Asp
	195					200						205			
Tyr	Ala	Leu	Ala	Asn	Asp	Thr	Leu	Ile	Leu	Phe	Asp	Ala	Ala	Tyr	Glu
210					215					220					
Ala	Tyr	Ile	Arg	Glu	Pro	Asp	Ile	Pro	His	Ser	Ile	Tyr	Glu	Ile	Lys
225					230				235					240	
Gly	Ala	Lys	Lys	Cys	Ala	Ile	Glu	Phe	Arg	Ser	Phe	Ser	Lys	Thr	Ala
			245					250					255		
Gly	Phe	Thr	Gly	Val	Arg	Cys	Gly	Tyr	Thr	Val	Val	Pro	Lys	Glu	Leu
		260					265						270		
Thr	Ala	Ala	Thr	Leu	Glu	Gly	Glu	Arg	Ile	Pro	Leu	Asn	Arg	Leu	Trp
	275					280						285			
Asn	Pro	Pro	Ala	Met	His	Gln	Ile	Gln	Arg	Tyr	Val	Val	His	Tyr	Ala
290						295					300				
Thr	Cys	Gly	Arg	Ser	Asp	Leu	His	Ser							
305					310										

<210> 7291
 <211> 505
 <212> PRT
 <213> B.fragilis

<400> 7291

Ser	Ile	Arg	Lys	Ala	Glu	Asp	Ser	Leu	Phe	Tyr	Ser	Ser	Asp	Arg	Lys
1				5					10					15	
Gln	Val	Leu	Ala	Val	Asn	Gly	Glu	Ile	Tyr	Asn	His	Arg	Asp	Ile	Arg
		20					25						30		
Ala	Gln	Tyr	Ala	Gly	Arg	Tyr	Glu	Phe	Arg	Thr	Gly	Ser	Asp	Cys	Glu

<213> B.fragilis

Gly 1	Ser	Val	Asn	Glu 5	Glu	Gly	Ser	Pro	Glu 10	Gly	Leu	Leu	Arg	Lys 15	Val
Gln	Leu	Ile	Arg	Ile 20	Pro	Leu	Arg	Leu 25	Gly	Glu	Asp	Ala	Phe	Thr	Thr
Gly	Glu	Ile	Ser	Glu 35	Gly	Lys	Ala 40	Glu	Lys	Leu	Ile	Arg	Leu	Met	Lys
Ala	Tyr	Lys	Gln	Leu 50	Met	Lys 55	Ile	Phe	Glu	Val	Ser	Asp	Tyr	Arg	Ala
Cys 65	Ala	Thr	Ser	Ala 70	Met	Arg	Asp	Ala	Arg	Asn	Gly	Lys	Glu	Ile	Thr
Arg	Lys	Ile	Glu	Lys 85	Lys	Thr	Gly	Ile	Arg	Val	Glu	Ile	Ile	Asp	Gly
Gln	Glu	Glu	Ala	His 100	Ile	Val	Tyr	Asp	Asn	His	Ile	Glu	Gln	Leu	Phe
Ala	Ser	Gly	Gln	Asn 115	Tyr	Leu	Tyr	Val	Asp	Val	Gly	Gly	Gly	Ser	Thr
Glu	Ile	Asn	Leu	Ile 130	Cys	Asp	Ser	Glu	Leu	Lys	Ser	Ser	Arg	Ser	Tyr
Asn 145	Ile	Gly	Thr	Val 150	Arg	Met	Leu	Ser	Gly	Met	Val	Lys	Asn	Glu	Glu
Lys	Glu	Gln	Met	Arg 165	Thr	Asp	Leu	Gln	Ala	Leu	Ala	Ala	Glu	Tyr	Thr
Pro	Ile	Gln	Ile	Ile 180	Gly	Ser	Gly	Gly	Asn	Ile	Asn	Lys	Leu	Phe	Arg
Leu	Ala	Asp	Lys	Lys 195	Asp	Lys	Lys	Gln	Ser	Phe	Leu	Pro	Ile	Glu	Ser
Leu	Lys	Glu	Ile	Cys 210	Glu	Thr	Leu	Lys	Ala	Leu	Ser	Lys	Glu	Glu	Arg
Ile 225	Lys	Gln	Phe	Lys 230	Leu	Lys	Pro	Asp	Arg	Ala	Asp	Val	Ile	Val	Pro
Ala	Ala	Glu	Ile	Phe 245	Leu	Glu	Val	Ala	Lys	Gln	Val	Asn	Ala	Thr	Gly
Ile	Thr	Val	Pro	Thr 260	Ile	Gly	Leu	Ser	Asp	Gly	Ile	Ile	Asp	Ser	Leu
Tyr	Thr	Lys	Asn	Met 275	Arg	Met	Glu	Thr	Asp	Ala	Lys				

<213> B.fragilis

Ile	Cys	Pro	Asn	Val	Phe	Phe	Leu	Thr	Arg	His	Gly	Asp	Tyr	Pro	Lys
1				5					10					15	
Asp	Phe	His	Arg	Val	Tyr	Thr	Lys	Arg	Lys	Arg	Ile	Thr	Val	Arg	Tyr
			20					25					30		
Arg	Ile	Met	Asp	Thr	Phe	Ile	Gln	Thr	Thr	Asp	Phe	Ile	Leu	Phe	Leu
		35					40					45			
Cys	Phe	Ser	Leu	Met	Thr	Val	Tyr	Leu	Gly	Val	Leu	Ala	Ile	Ala	Ala
	50					55					60				
Ser	Leu	Arg	Asn	Asp	Thr	Pro	Tyr	Pro	Gln	Ala	Gly	Lys	Arg	His	Arg

65 70 75 80
 Phe Ala Ile Leu Val Pro Pro Gly Ser Thr Ser Leu Pro Leu Pro His
 85 90 95
 Tyr Pro Glu Glu Leu Tyr Gln Val Phe Thr Tyr Glu Asp Leu Thr Glu
 100 105 110
 Ala Ile Ala Ala Leu Asn Glu Asn Asp Phe Asp Gly Val Val Val Leu
 115 120 125
 Gly Glu Thr Thr Arg Ile Glu Pro Ala Phe Leu Glu Glu Ile Asn Ser
 130 135 140
 Val Phe Asp Ala Gly Ile Gln Ala Ile Gln Leu Arg His Ile Thr Glu
 145 150 155 160
 Lys Arg Ser Thr Arg Lys Gln Tyr Phe Gln Ala Leu Asn Glu Glu Ile
 165 170 175
 Thr Gln Ala Leu Phe Gly Thr Gly Ala Thr Arg Leu Gly Val Ser Ser
 180 185 190
 Ala Leu Tyr Gly Ala Asp Met Val Leu Asp Leu Lys Trp Leu Lys Lys
 195 200 205
 Asn Gln Lys Ser Arg Lys Ser Asn Leu Glu Arg Arg Leu Val Arg Gln
 210 215 220
 Gly Ile Phe Val Glu Tyr Leu Glu Lys Val Lys Val Tyr Ser Ser Asp
 225 230 235 240
 Ile Arg Ala Pro Arg Tyr Lys Val Arg Phe Ser Lys Ala Leu Arg Ala
 245 250 255
 Leu Pro Glu Ala Ile Phe Thr Ala His Trp Asp Tyr Cys Asn Lys Ile
 260 265 270
 Leu Arg Trp Ile Leu Pro Ser Arg Lys Thr Asn Leu Ile Ser Ile Ala
 275 280 285
 Leu Ile Ala Thr Ala Leu Leu Cys Tyr Asp Trp Ser Leu Ser Leu Lys
 290 295 300
 Trp Trp Ser Leu Leu Tyr Ile Leu Met Phe Ile Ile Cys Leu Ala Ile
 305 310 315 320
 Pro Asp Tyr Leu Val Arg Gln Lys Thr Lys Lys
 325 330

<210> 7294

<211> 165

<212> PRT

<213> B.fragilis

<400> 7294

Lys Ala Glu Lys Met Lys Lys Ser Ile Leu Ile Pro Phe Leu Phe Met
 1 5 10 15
 Gly Leu Leu Ala Phe Ala Ser Cys Lys Gly Thr Ser Glu Asn Lys Ser
 20 25 30
 Thr Thr Ala Thr Asp Thr Val Gln Ala Glu Lys Pro Gln Ser Gly Thr
 35 40 45
 Ile His Leu Thr Arg Ala Glu Phe Leu Lys Lys Ile Ala Asp Tyr Glu
 50 55 60
 Asn His Ser Lys Glu Trp Lys Tyr Leu Gly Asp Lys Pro Ala Ile Val
 65 70 75 80
 Asp Phe Tyr Ala Asp Trp Cys Gly Pro Cys Lys Met Val Ala Pro Ile
 85 90 95
 Leu Glu Glu Leu Ser Lys Glu Tyr Ala Gly Lys Ile Tyr Ile Tyr Lys
 100 105 110
 Val Asn Val Asp Lys Glu Pro Glu Leu Ala Arg Asp Phe Gly Ile Gln
 115 120 125
 Ser Ile Pro Thr Ile Trp Phe Val Pro Met Lys Gly Glu Pro Gln Val
 130 135 140
 Asn Met Gly Ala Leu Ser Lys Glu Gln Leu Lys Gly Tyr Ile Asp Lys

145 150 155 160
 Val Leu Leu Lys Gln
 165

<210> 7295
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 7295

Thr Asp Arg Lys Ala Ile Thr His Gln Arg Asn Met Lys Asp Ile Leu
 1 5 10 15
 Ser Glu Ile Ile Ala Asn Lys Arg Phe Glu Ile Asp Leu Gln Lys Gln
 20 25 30
 Ala Ile Pro Ser Glu Gln Leu Gln Glu Lys Leu Ser Asp Glu Val Gln
 35 40 45
 Pro Gly Tyr Ser Met Lys Gln Ala Leu Ala Ser Ser Ala Thr Gly Ile
 50 55 60
 Ile Ala Glu Phe Lys Arg Arg Ser Pro Ser Lys Gly Trp Ile Tyr Lys
 65 70 75 80
 Asn Ala Cys Pro Glu Gln Val Val Pro Asp Tyr Ile Ala Ala Gly Ala
 85 90 95
 Ser Ala Leu Ser Ile Leu Thr Asp Glu Lys Phe Phe Gly Gly Ser Leu
 100 105 110
 Lys Asp Ile Arg Thr Ala Arg Pro Leu Val Asn Ile Pro Ile Leu Arg
 115 120 125
 Lys Asp Phe Ile Ile Asp Glu Tyr Gln Leu Phe Gln Ala Lys Ile Val
 130 135 140
 Gly Ala Asp Ala Ile Leu Leu Ile Ala Ala Ala Leu Glu Ala Asp Gln
 145 150 155 160
 Cys His Ala Leu Ala Ala Lys Ala His Glu Leu Gly Leu Glu Val Leu
 165 170 175
 Leu Glu Ile His Thr Ala Glu Glu Leu Pro Phe Ile Asn Lys Glu Ile
 180 185 190
 Asp Met Val Gly Ile Asn Asn Arg Asn Leu Gly Thr Phe Phe Thr Asp
 195 200 205
 Val Glu Asn Ser Phe Arg Leu Ala Gly Gln Leu Pro Gln Asp Ala Leu
 210 215 220
 Leu Val Ser Glu Ser Gly Ile Ser Asp Pro Glu Thr Val Lys Arg Leu
 225 230 235 240
 Arg Lys Ala Gly Phe Arg Gly Phe Leu Ile Gly Glu Thr Phe Met Lys
 245 250 255
 Ala Gln Gln Pro Gly Gln Lys Leu Lys Glu Phe Ile Asn Asp Leu Asn
 260 265 270
 Ser Pro Gln Ser Asp Thr Glu Ser His
 275 280

<210> 7296
 <211> 238
 <212> PRT
 <213> B.fragilis

<400> 7296

Ile Arg Cys Leu Met Asp Lys Leu Gln Lys Tyr Lys Pro Thr Asp Lys
 1 5 10 15
 Met Ile Asp Leu Ile Gly Asp Asn Tyr Ser Leu Leu Gln Val Met Ser
 20 25 30
 Arg Phe Gly Leu Ser Leu Gly Phe Gly Asp Lys Thr Val Lys Glu Val
 35 40 45

Cys Glu Met Asn Asn Val Asp Cys Gln Thr Phe Leu Val Val Val Asn
 50 55 60
 Phe Met Ala Glu Gly Phe Ser Arg Met Asp Gly Ser Ala Asp Asp Ile
 65 70 75 80
 Ser Ile Pro Ala Leu Val Asp Tyr Leu Arg Gln Ala His Ile Tyr Phe
 85 90 95
 Leu Asp Tyr Cys Leu Pro Ala Ile Arg Arg Lys Leu Ile Glu Ala Ile
 100 105 110
 Asp Cys Ser Gln Asp Asp Val Ser Phe Leu Ile Leu Lys Phe Phe Asp
 115 120 125
 Gly Tyr Met Arg Glu Val Arg Lys His Met Glu Tyr Glu Glu Lys Thr
 130 135 140
 Val Phe Lys Tyr Val Asp Thr Leu Ile His Gly Asn Ala Pro Lys Asn
 145 150 155 160
 Tyr Gln Ile Ser Thr Phe Ser Lys His His Asp Gln Val Gly Glu Arg
 165 170 175
 Leu Thr Glu Leu Lys Asn Ile Ile Ile Lys Tyr Cys Pro Ala Lys Ala
 180 185 190
 Asn Thr Asn Val Leu Asn Ala Ala Leu Phe Asp Ile Tyr Ala Cys Glu
 195 200 205
 Glu Gly Leu Glu Ser His Cys Lys Val Glu Asp Tyr Leu Phe Val Pro
 210 215 220
 Ala Ile Leu Lys Leu Glu Arg Arg Met Arg Glu Asn Glu Lys
 225 230 235

<210> 7297

<211> 265

<212> PRT

<213> B.fragilis

<400> 7297

Lys Tyr Met Asn Arg Ile Asn Gln Leu Phe Asp Ser Asn Pro Arg Asp
 1 5 10 15
 Leu Leu Ser Ile Tyr Phe Cys Ala Gly Tyr Pro Thr Leu Glu Gly Thr
 20 25 30
 Thr Glu Val Ile Arg Thr Leu Glu Lys His Gly Val Asn Met Ile Glu
 35 40 45
 Ile Gly Ile Pro Phe Ser Asp Pro Met Ala Asp Gly Met Val Ile Gln
 50 55 60
 Asn Ala Ala Thr Gln Ala Leu Arg Asn Gly Met Ser Leu Arg Leu Leu
 65 70 75 80
 Phe Glu Gln Leu His Asp Ile Arg Arg Asp Val Lys Ile Pro Leu Ile
 85 90 95
 Leu Met Gly Tyr Leu Asn Pro Ile Met Gln Phe Gly Phe Asp Asn Phe
 100 105 110
 Cys Arg Gln Cys Ala Glu Cys Gly Ile Asp Gly Val Ile Ile Pro Asp
 115 120 125
 Leu Pro Phe Lys Asp Tyr Gln Glu His Phe Arg Thr Ile Ala Glu Arg
 130 135 140
 Tyr Asp Val Lys Val Ile Met Leu Ile Thr Pro Glu Thr Ser Glu Glu
 145 150 155 160
 Arg Val Arg Glu Ile Asp Glu His Thr Asp Gly Phe Ile Tyr Met Val
 165 170 175
 Ser Ser Ala Ala Thr Thr Gly Ala Gln Gln Asp Phe Asp Gly Gln Lys
 180 185 190
 Arg Ala Tyr Phe Lys Lys Ile Glu Lys Met Asn Leu Arg Asn Pro Arg
 195 200 205
 Met Val Gly Phe Gly Ile Ser Asn Glu Ala Thr Phe Arg Ala Ala Cys
 210 215 220

Glu Asn Ala Ser Gly Ala Ile Ile Gly Ser Arg Phe Val Thr Leu Leu
 225 230 235 240
 His Glu Glu Lys Asn Pro Glu Lys Ala Ile Thr Arg Leu Lys Ala Ile
 245 250 255
 Leu Asn Leu Ser Ser Asn Asp Leu Arg
 260 265

<210> 7298

<211> 388

<212> PRT

<213> B.fragilis

<400> 7298

Phe Cys Met Lys Thr Ser Tyr Leu Leu Leu Ser Ser Ala Leu Leu Leu
 1 5 10 15
 Gly Cys Leu Ser Ala Cys Asn Thr Ser Pro Arg Glu Pro Lys Ala Met
 20 25 30
 Glu Ala Asn Asp Gly Ser Val Thr Thr Ile Glu Ser Asn Gly Asn Lys
 35 40 45
 Leu Thr Val Cys Asp Leu Ser Ala Val Lys Asp Thr Ile Glu Val Pro
 50 55 60
 Leu Ser Glu Phe Val Glu Asp Cys Arg Ile Val Arg Phe Glu Thr Ser
 65 70 75 80
 Glu Glu Ala Tyr Phe Lys Ala Trp Phe Ile Asn Ala Thr Asp Lys His
 85 90 95
 Ile Gly Ile Arg Gln Gly Asn Gln Asp Val Phe Lys Leu Phe Asp Arg
 100 105 110
 Asp Gly Lys Phe Leu Tyr Asn Val Gly Ser Val Gly Ser Gly Pro Gly
 115 120 125
 Glu Tyr Asp Thr Thr Leu Tyr Asp Glu Cys Ile Asp Glu Lys Asn Gly
 130 135 140
 His Ile Phe Phe Thr Pro Phe Val Gly Lys Arg Ile Met Met Tyr Asp
 145 150 155 160
 Ile Asn Gly Gln Trp Ile Lys Asp Ile Pro Leu Pro Met Gln Ile Asn
 165 170 175
 Lys Ala Lys Ile Trp Val Asn Glu Asp Gly Ser Leu Ser Val Val His
 180 185 190
 Met Pro Phe Glu Glu Gly Glu Pro Leu Ala Phe Arg Val Asp Thr Glu
 195 200 205
 Gly Asn Ile Leu Asn Gln Ile Pro Ala Thr Ala Ala Thr Lys Val Met
 210 215 220
 Asn Phe Asp Gly Glu Val Phe Ser Tyr Arg Asn Cys Gly Asp Phe Asp
 225 230 235 240
 Phe Phe His Thr Gly Ile Asp Thr Leu Phe Thr Tyr Asp Ser Ala Gly
 245 250 255
 Asn Lys Leu Leu Pro Lys Phe Thr Met Thr Phe Pro Asn Met Asn Glu
 260 265 270
 Lys Pro Ile His Leu Tyr Tyr Arg Leu Pro His His Phe Ile Val Thr
 275 280 285
 Tyr Trp Gly Asn Lys Gly Glu Gly Gly Gly Asp Val Leu Val Asp Thr
 290 295 300
 Glu Lys Asn Ala Ser Ser Tyr Phe Arg Leu Val Asn Asp Phe Tyr Gly
 305 310 315 320
 Asn Leu Pro Ile Pro Ala Pro Gly His Ser Phe Tyr Arg Gly Tyr Phe
 325 330 335
 Ile Gln Ser Leu Glu Pro Gly Gln Leu Ile Glu Lys Ile Glu Lys Gln
 340 345 350
 Ile Ala Ser Gly Lys Cys Ser Gly Gln Asp Glu Gln Lys Leu Lys Glu
 355 360 365

3719 3720 3721 3722 3723 3724 3725 3726 3727 3728 3729 3730 3731 3732 3733 3734 3735 3736 3737 3738 3739 3740 3741 3742 3743 3744 3745 3746 3747 3748 3749 3750 3751 3752 3753 3754 3755 3756 3757 3758 3759 3760 3761 3762 3763 3764 3765 3766 3767 3768 3769 3770 3771 3772 3773 3774 3775 3776 3777 3778 3779 3780 3781 3782 3783 3784 3785 3786 3787 3788 3789 3790 3791 3792 3793 3794 3795 3796 3797 3798 3799 3800 3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814 3815 3816 3817 3818 3819 3820 3821 3822 3823 3824 3825 3826 3827 3828 3829 3830 3831 3832 3833 3834 3835 3836 3837 3838 3839 3840 3841 3842 3843 3844 3845 3846 3847 3848 3849 3850 3851 3852 3853 3854 3855 3856 3857 3858 3859 3860 3861 3862 3863 3864 3865 3866 3867 3868 3869 3870 3871 3872 3873 3874 3875 3876 3877 3878 3879 3880 3881 3882 3883 3884 3885 3886 3887 3888 3889 3890 3891 3892 3893 3894 3895 3896 3897 3898 3899 3900 3901 3902 3903 3904 3905 3906 3907 3908 3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 3997 3998 3999 4000

Leu Ala Ala Thr Leu Thr Glu Asn Asp Asn Asn Val Leu Phe Ile Gly
 370 375 380
 Lys Val Lys Lys
 385

<210> 7299
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 7299
 Met Gln Arg Glu Ser Gln Ser Arg Gln Ser Asp Cys Arg Thr Val Ser
 1 5 10 15
 Ser Thr Ala Ser Ile Pro Arg Ile Cys Ala Trp Lys Arg Thr Leu Asn
 20 25 30
 Lys Thr Gly His His Arg Leu His Arg Leu Thr Gln Ile Ile Tyr Arg
 35 40 45
 Val Asp Ser Trp Tyr Lys Arg Ile Tyr Ala Asn Val Ser Tyr Asp Ser
 50 55 60
 Pro Gln Ile Thr Arg Ile Phe Thr Asp
 65 70

<210> 7300
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 7300
 Ile Ala Leu Leu Phe Ile Ser Leu Lys Ala Asn Gln Lys Leu Lys Tyr
 1 5 10 15
 Met Lys Ile Lys Lys Leu Leu Phe Ala Ser Ala Leu Leu Phe Ser Ala
 20 25 30
 Tyr Asn Ala Ser Ala Gln Thr Gln Val Ile Ala His Arg Gly Phe Trp
 35 40 45
 Lys Thr Glu Gly Ser Ala Gln Asn Ser Ile Ala Ala Leu Leu Lys Ala
 50 55 60
 Asp Ser Ile Gly Cys Tyr Gly Ser Glu Phe Asp Val Trp Leu Ala Ala
 65 70 75 80
 Asp Asp Gln Leu Val Val Asn His Asp Pro Thr Phe Lys Gly Lys Arg
 85 90 95
 Met Glu Asn Ser Pro Ser Thr Ala Leu Thr Ala Ile Lys Leu Asp Asn
 100 105 110
 Gly Glu Ser Leu Pro Thr Leu Ala Lys Tyr Leu Lys Ala Ala Gln Pro
 115 120 125
 Leu His Thr Arg Leu Ile Leu Glu Leu Lys Ala His Ser Thr Pro Leu
 130 135 140
 Arg Glu Thr Lys Ala Ile Glu Lys Ile Val Ala Leu Val Lys Asp Met
 145 150 155 160
 Gly Leu Glu Glu Arg Met Glu Tyr Ile Thr Phe Ser Leu His Ala Thr
 165 170 175
 Lys Glu Phe Ile Arg Leu Ala Pro Glu Gly Thr Pro Val Tyr Tyr Leu
 180 185 190
 Asp Gly Asn Leu Ser Pro Lys Glu Leu Lys Glu Leu Gly Cys Ala Gly
 195 200 205
 Pro Asp Tyr His Tyr Thr Val Phe Arg Lys His Pro Glu Trp Ile Gln
 210 215 220
 Glu Cys His Asp Leu Gly Met Lys Val Asn Ala Trp Thr Val Asn Lys
 225 230 235 240
 Thr Asp Asp Met Lys Trp Leu Ile Asp Arg Lys Val Asp Phe Ile Thr

				245					250				255
Thr	Asn	Glu	Pro	Val	Gln	Leu	Lys	Asn	Leu	Leu	Lys	Lys	
			260					265					

<210> 7301

<211> 627

<212> PRT

<213> B.fragilis

<400> 7301

Met	Glu	Gln	Leu	Lys	His	Glu	Cys	Gly	Val	Ala	Met	Ile	Arg	Leu	Leu
1				5					10					15	
Lys	Pro	Leu	Glu	Tyr	Tyr	Glu	Lys	Lys	Tyr	Gly	Thr	Trp	Met	Tyr	Gly
			20					25					30		
Leu	Asn	Lys	Leu	Tyr	Leu	Leu	Met	Glu	Lys	Gln	His	Asn	Arg	Gly	Gln
		35					40					45			
Glu	Gly	Ala	Gly	Leu	Ala	Cys	Val	Lys	Leu	Glu	Val	Asn	Pro	Gly	Glu
		50				55					60				
Glu	Tyr	Met	Phe	Arg	Glu	Arg	Ala	Leu	Gly	Ser	Gly	Ala	Ile	Thr	Glu
65					70					75					80
Ile	Phe	Glu	Thr	Val	Gln	Ser	Asn	Phe	Lys	Asp	Leu	Ser	Lys	Glu	Gln
				85					90					95	
Leu	His	Asp	Ala	Ala	Phe	Ala	Lys	Arg	Thr	Leu	Pro	Phe	Ala	Gly	Glu
			100					105					110		
Ala	Tyr	Met	Gly	His	Leu	Arg	Tyr	Ser	Thr	Thr	Gly	Lys	Ser	Gly	Ile
		115					120					125			
Ser	Tyr	Val	His	Pro	Phe	Leu	Arg	Arg	Asn	Asn	Trp	Arg	Ala	Lys	Asn
		130				135					140				
Leu	Ala	Leu	Cys	Gly	Asn	Phe	Asn	Met	Thr	Asn	Val	Asp	Glu	Ile	Phe
145					150					155					160
Ala	Arg	Ile	Thr	Ala	Ile	Gly	Gln	His	Pro	Arg	Lys	Tyr	Ala	Asp	Thr
				165					170					175	
Tyr	Ile	Met	Leu	Glu	Gln	Val	Gly	His	Arg	Leu	Asp	Arg	Glu	Val	Glu
		180						185					190		
Arg	Leu	Phe	Asn	Leu	Ala	Glu	Ala	Glu	Gly	Leu	Thr	Gly	Met	Gly	Val
		195					200					205			
Thr	His	Tyr	Ile	Glu	Asp	His	Ile	Asp	Leu	Ala	Asn	Val	Leu	Arg	Thr
		210				215						220			
Ser	Ser	Lys	Glu	Trp	Asp	Gly	Gly	Tyr	Val	Met	Cys	Gly	Leu	Thr	Gly
225					230					235					240
Ser	Gly	Glu	Ser	Phe	Ala	Leu	Arg	Asp	Pro	Trp	Gly	Ile	Arg	Pro	Ala
				245					250					255	
Phe	Trp	Tyr	Gln	Asp	Asp	Glu	Ile	Ala	Val	Leu	Ala	Ser	Glu	Arg	Pro
			260					265					270		
Val	Ile	Gln	Thr	Ala	Leu	Asn	Val	Pro	Ile	Gly	Glu	Ile	Arg	Glu	Leu
		275					280					285			
Leu	Pro	Gly	Gln	Ala	Leu	Leu	Ile	Ser	Lys	Glu	Gly	Lys	Leu	Arg	Thr
		290				295					300				
Ala	Gln	Ile	Asn	Lys	Ala	Arg	Glu	Lys	Lys	Ala	Cys	Ser	Phe	Glu	Arg
305					310					315					320
Ile	Tyr	Phe	Ser	Arg	Gly	Ser	Asp	Ala	Asp	Ile	Tyr	Lys	Glu	Arg	Lys
				325					330					335	
Gln	Leu	Gly	Glu	Lys	Leu	Val	Pro	Asn	Ile	Leu	Lys	Ala	Ile	Asp	Asn
			340					345					350		
Asp	Leu	Asp	His	Thr	Val	Phe	Ser	Phe	Ile	Pro	Asn	Thr	Ala	Glu	Val
		355					360					365			
Ala	Phe	Tyr	Gly	Met	Leu	Gln	Gly	Leu	Asp	Asn	Tyr	Leu	Asn	Glu	Glu
		370				375					380				
Lys	Val	Arg	Gln	Ile	Ala	Ser	Leu	Gly	His	His	Pro	Asp	His	Asp	Glu

385 390 395 400
 Leu Glu Val Ile Leu Ser Arg Arg Ile Arg Ser Glu Lys Val Ala Ile
 405 410 415
 Lys Asp Ile Lys Leu Arg Thr Phe Ile Ala Glu Gly Asn Ser Arg Asn
 420 425 430
 Asp Leu Ala Ala His Val Tyr Asp Ile Thr Tyr Gly Ser Leu Arg Ser
 435 440 445
 Gly Ile Asp Asn Leu Val Ile Ile Asp Asp Ser Ile Val Arg Gly Thr
 450 455 460
 Thr Leu Lys Gln Ser Ile Ile Gly Ile Leu Asp Arg Leu Gly Pro Lys
 465 470 475 480
 Lys Ile Val Ile Val Ser Ser Ser Pro Gln Val Arg Tyr Pro Asp Tyr
 485 490 495
 Tyr Gly Ile Asp Met Ala Lys Met Ser Glu Phe Ile Ala Phe Lys Ala
 500 505 510
 Ala Ile Glu Leu Leu Lys Asp Arg Asp Met Lys Asp Val Ile Ala Ser
 515 520 525
 Ala Tyr Arg Lys Ser Lys Asp Gln Val Gly Leu Pro Lys Glu Gln Met
 530 535 540
 Val Asn Tyr Val Lys Asp Ile Tyr Ala Pro Phe Thr Asp Glu Glu Ile
 545 550 555 560
 Ser Glu Lys Met Val Glu Leu Leu Thr Pro Lys Gly Thr Lys Ala Lys
 565 570 575
 Val Gln Ile Val Tyr Gln Pro Leu Glu Gly Leu His Glu Ala Cys Pro
 580 585 590
 Asn His Thr Gly Asp Trp Tyr Phe Ser Gly Asn Tyr Pro Thr Pro Gly
 595 600 605
 Gly Val Lys Leu Leu Asn Glu Ala Phe Ile Asn Tyr Ile Glu Gln Val
 610 615 620
 Tyr Gln Phe
 625

<210> 7302
 <211> 352
 <212> PRT
 <213> B.fragilis

<400> 7302
 Lys Asn Lys Leu Ile Thr Pro Leu Met Thr Thr Thr Asn Glu Gln Glu
 1 5 10 15
 Gln Ser Arg Ala Tyr Ile Leu Ala Gly Ile Phe Thr Leu Ser Leu Arg
 20 25 30
 Leu Val Val Gly Trp Thr Tyr Phe Ser Ala Phe Trp Arg Arg Leu Val
 35 40 45
 Leu Glu Asn Lys Leu Ile Pro Asp Ser Ala Gly Tyr Ile Gly Glu Lys
 50 55 60
 Phe Asn His Phe Leu Pro Asn Ser Ile Gly Ile Arg Pro Val Ile Glu
 65 70 75 80
 Tyr Leu Val Ser Thr Pro Asp Met Leu Trp Trp Ala Met Val Ile Phe
 85 90 95
 Thr Leu Val Glu Gly Ile Val Gly Leu Leu Tyr Met Leu Gly Phe Phe
 100 105 110
 Thr Arg Leu Met Ser Ile Gly Val Phe Ser Leu Ala Thr Gly Ile Leu
 115 120 125
 Leu Gly Ser Gly Trp Leu Gly Thr Thr Cys Leu Asp Glu Trp Gln Ile
 130 135 140
 Gly Ile Leu Gly Val Ala Ala Gly Phe Thr Ile Phe Leu Ser Gly Gly
 145 150 155 160
 Gly Lys Tyr Ser Val Asp His Leu Ile Glu Arg Lys Phe Ser Leu Lys

165 170 175
 Lys Lys Ala Ala Trp Leu Ser Trp Leu Thr Ser Gly Glu Leu Pro Val
 180 185 190
 Ser Ala Lys Arg Phe Ala Asn Val Ser Val Ala Gly Ala Ile Val Ile
 195 200 205
 Phe Thr Leu Ser Leu Tyr Thr Asn Gln Glu Phe His Asn Gly Val Trp
 210 215 220
 Gly Pro Leu His Asn Lys Ser Val Lys Pro Lys Ile Glu Ile Ser Asp
 225 230 235 240
 Ala Gln Ile Glu Asn Asn Ser Leu Ser Phe Ser Val Tyr Arg Val Glu
 245 250 255
 Gly Val Asp Val Tyr Gly Ser Phe Leu Ile Gly Ile Ser Leu Lys Asn
 260 265 270
 Ala Asp Gly Asp Ile Val Leu Glu Lys Lys Gly Glu Glu Leu Ala Asp
 275 280 285
 Phe Pro Ile Gly Asn Ile Asp Asn Lys Tyr Ile Ala Arg Val Ala Pro
 290 295 300
 Gly Lys His Ser Leu Val Ile Pro Leu Gly Ser Lys Ala Thr Leu Thr
 305 310 315 320
 Ile Asp Asp Thr Ala Ile Gly Gly Leu Pro Lys Gly Lys Tyr Glu Leu
 325 330 335
 Val Leu Thr Asp Ile Ser Gly Ile Thr Trp Lys Lys Glu Ile Ile His
 340 345 350

<210> 7303
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 7303
 Lys Pro Glu Leu Phe Leu Leu Pro Val Val Glu Ser Thr Tyr Lys Ser
 1 5 10 15
 Ile Lys Ser Val Ile Met Asn Ile Ala Glu Gln Leu Asp Ala Val Ser
 20 25 30
 Gly Thr Asn Arg Leu Val Leu Val Glu Phe Tyr Ala Asp Trp Ser Pro
 35 40 45
 His Tyr Glu Trp Leu Glu Pro Val Val Arg Thr Tyr Glu Lys Gln Val
 50 55 60
 Ser Glu Val Ile Lys Val Asn Ile Val Glu Asp Lys Ala Val Ala Asp
 65 70 75 80
 Ser Phe Asn Ile Glu Thr Ala Pro Ala Phe Ile Leu Leu Gln Arg Gly
 85 90 95
 His Glu Leu Trp Arg Gln Val Gly Glu Leu Thr Ile Asp Glu Leu Lys
 100 105 110
 Leu Val Leu Glu Glu Phe Lys
 115

<210> 7304
 <211> 692
 <212> PRT
 <213> B.fragilis

<400> 7304
 Thr Leu Ile Arg Met Lys Ser Asp Glu Ala Lys Arg Lys Lys Leu Tyr
 1 5 10 15
 Val Glu Arg Asp Ile Ser Trp Met Tyr Phe Asn Gln Arg Ile Leu Leu
 20 25 30
 Glu Ala Ala Arg Pro Glu Val Pro Leu Leu Glu Gln Leu Thr Phe Leu
 35 40 45

Gly	Ile	Tyr	Ser	Asn	Asn	Leu	Asp	Glu	Phe	Phe	Arg	Val	Arg	Val	Ala	50	55	60
Thr	Leu	Asn	Arg	Ile	Val	Glu	Tyr	Asp	Asp	Lys	Asn	Ile	Arg	Glu	Glu	65	70	75
Arg	Asp	Thr	Ala	Ala	Arg	Thr	Leu	Lys	Gln	Ile	Gly	Lys	Leu	His	Asn	85	90	95
Gln	Tyr	Tyr	Arg	Gln	Phe	Glu	Glu	Thr	Phe	Ala	Ser	Ile	Met	Glu	Lys	100	105	110
Leu	Lys	Gln	Glu	Asn	Ile	His	Val	Ile	Lys	Asp	Thr	Glu	Leu	Thr	Pro	115	120	125
Glu	Gln	Glu	His	Phe	Ile	Thr	Ser	Leu	Tyr	Arg	Asn	Arg	Leu	Asn	Gly	130	135	140
Ser	Thr	Asn	Pro	Leu	Phe	Leu	Thr	Lys	Thr	Ser	Arg	His	Thr	Asp	Asp	145	150	155
Gln	Thr	Asp	Glu	Asp	Ile	Tyr	Leu	Ala	Ile	Arg	Leu	Leu	Arg	Lys	Asp	165	170	175
Ser	Glu	Gly	Lys	Val	Lys	Met	Lys	Asp	Tyr	Ala	Val	Ile	Gly	Leu	Pro	180	185	190
Thr	Ala	Glu	Phe	Gly	Arg	Phe	Ile	Arg	Leu	Pro	Asp	Ser	Glu	Gly	Lys	195	200	205
Thr	Tyr	Leu	Met	Phe	Leu	Asp	Asp	Val	Ile	Arg	Tyr	Cys	Leu	Pro	Met	210	215	220
Ile	Phe	Ile	Gly	Met	Asn	Tyr	Thr	Asp	Tyr	Glu	Ala	Tyr	Thr	Phe	Lys	225	230	235
Phe	Thr	Lys	Asp	Ala	Glu	Met	Glu	Ile	Asp	Ser	Asp	Leu	Arg	Thr	Gly	245	250	255
Val	Leu	Gln	Lys	Ile	Ser	Lys	Gly	Ile	Lys	Ser	Arg	Lys	Arg	Gly	Glu	260	265	270
Pro	Ile	Arg	Phe	Val	Tyr	Asp	Lys	Glu	Met	Pro	Lys	Asp	Leu	Leu	Arg	275	280	285
Lys	Leu	Thr	Asp	Arg	Leu	Asn	Val	Asp	Lys	Asn	Asp	Thr	Arg	Val	Ala	290	295	300
Gly	Gly	Arg	Tyr	His	Asn	Phe	Lys	Asp	Leu	Met	Lys	Phe	Pro	Asp	Cys	305	310	315
Gly	Arg	Ser	Asp	Leu	Lys	Tyr	Pro	Ala	Trp	Pro	Pro	Val	Phe	Lys	Gln	325	330	335
Glu	Leu	Asn	Gly	Thr	Glu	Ser	Ile	Leu	Arg	Leu	Ile	Arg	Lys	Gln	Asp	340	345	350
Arg	Ser	Leu	His	Tyr	Pro	Tyr	Gln	Ser	Phe	Asp	Thr	Val	Ile	Arg	Val	355	360	365
Leu	Arg	Glu	Ala	Ala	Ile	Ser	Lys	Glu	Val	Lys	Ser	Ile	Lys	Met	Thr	370	375	380
Leu	Tyr	Arg	Leu	Ala	Lys	Asp	Ser	Lys	Val	Val	Lys	Ala	Leu	Ile	Cys	385	390	395
Ala	Ala	Gln	Asn	Gly	Lys	Lys	Val	Thr	Val	Ile	Ile	Glu	Leu	Leu	Ala	405	410	415
Arg	Phe	Asp	Glu	Ala	Ser	Asn	Ile	Ser	Trp	Ser	Lys	Arg	Met	Gln	Glu	420	425	430
Ala	Gly	Ile	Lys	Val	Ile	Phe	Gly	Val	Glu	Gly	Leu	Lys	Ile	His	Ser	435	440	445
Lys	Leu	Val	His	Ile	Gly	Thr	Arg	Phe	Gly	Asp	Leu	Ala	Cys	Ile	Ser	450	455	460
Thr	Gly	Asn	Phe	His	Glu	Gly	Asn	Ala	Arg	Met	Tyr	Thr	Asp	Phe	Thr	465	470	475
Ile	Met	Thr	Ala	His	Arg	Ser	Ile	Val	Arg	Glu	Val	Asp	Arg	Val	Phe	485	490	495
Asp	Phe	Ile	Glu	Lys	Pro	Tyr	Leu	Pro	Val	Asn	Phe	Lys	Glu	Leu	Leu	500	505	510
Val	Ser	Pro	Asn	Asp	Met	Arg	Lys	Arg	Leu	Thr	Ala	Leu	Ile	Asn	Gln			

515 520 525
 Glu Ile Lys Asn Lys Arg Gln Gly Lys Glu Ala Tyr Ile Leu Ala Lys
 530 535 540
 Val Asn His Ile Thr Asp Arg Ile Leu Ile Gln Lys Leu Tyr Glu Ala
 545 550 555 560
 Ser Thr Ala Gly Val Gln Thr Asp Leu Val Val Arg Gly Asn Cys Ser
 565 570 575
 Leu Val Thr Gly Ile Pro Gly Val Ser Asp Asn Ile Arg Ile Asn Gly
 580 585 590
 Ile Ile Asp Arg Tyr Leu Glu His Pro Arg Ile Phe Ile Phe Ala Asn
 595 600 605
 Gly Gly Glu Glu Lys Tyr Tyr Ile Gly Ser Ala Asp Trp Met Pro Arg
 610 615 620
 Asn Leu Asp Asn Arg Ile Glu Val Leu Thr Pro Val Tyr Asp Lys Val
 625 630 635 640
 Ile Gln Ala Glu Leu Lys Arg Val Val Cys Tyr Gly Leu Arg Asp Thr
 645 650 655
 Ala Lys Gly Arg Ile Val Asp Gly Ser Gly Glu Asn Lys Thr Trp Glu
 660 665 670
 Asn Ser Asp Ala Pro Phe Arg Ser Gln Glu Glu Leu Tyr Lys Tyr Tyr
 675 680 685
 Lys Glu Ser Glu
 690

<210> 7305
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 7305
 Asn Thr Thr Arg Thr Ser Trp Gln Phe Arg Leu Arg Ser Leu Arg Ala
 1 5 10 15
 Arg Ser Thr Ser Ile Thr Cys Ser Ala Phe Ser Phe Gly Ser Ala Lys
 20 25 30
 Arg Ala Ser Val Ser Ser Leu Ser Leu Met Val Ser Pro Val Arg Arg
 35 40 45
 Val Val Pro Ala Ile Gly Ser Ile Tyr Ala Cys Pro Leu Ser Thr Leu
 50 55 60
 Gln Cys Val Ser Gly Asp Glu Pro Lys Met Arg
 65 70 75

<210> 7306
 <211> 547
 <212> PRT
 <213> B.fragilis

<400> 7306
 Phe Phe Leu Arg Ala Glu Arg Cys Ile Ala Val Phe Pro Ser Leu Val
 1 5 10 15
 Leu Ala Ala Ser Val His Asp Ser Pro Phe Gly Arg Val Ala Lys Ser
 20 25 30
 Val Ala Asp His Thr Phe Gln Phe Cys Leu Tyr His Phe Val Val Tyr
 35 40 45
 Arg Arg Lys His Phe Asp Ala Val Val Gln Ile Ala Gly His Pro Val
 50 55 60
 Gly Arg Ser Tyr Ile Val Phe Phe Phe Pro Ser Val Gly Glu Asp Glu
 65 70 75 80
 Asp Ala Arg Met Phe Gln Ile Thr Val Asp Asp Ala Val Asp Pro Asp
 85 90 95

Val Val Ala Asp Ser Arg Asp Ala Gly His Gln Gly Ala Val Ala Pro
 100 105 110
 Asp His Gln Val Cys Leu Tyr Thr Gly Cys Arg Ser Phe Val Glu Phe
 115 120 125
 Leu Tyr Gln Tyr Pro Val Gly Asn Met Val His Phe Gly Lys Asp Val
 130 135 140
 Cys Leu Phe Ser Leu Ser Leu Val Leu Asp Phe Leu Val Asp Gln Gly
 145 150 155 160
 Cys Gln Pro Phe Ala His Ile Val Gly Arg His Glu Gln Phe Leu Glu
 165 170 175
 Val His Arg Glu Val Gly Leu Leu Tyr Glu Val Glu Tyr Pro Val Tyr
 180 185 190
 Phe Pro His Asn Gly Ala Met Cys Cys His Asp Gly Glu Ile Gly Ile
 195 200 205
 His Pro Cys Val Ser Phe Met Lys Ile Ser Gly Ala Asp Thr Gly Gln
 210 215 220
 Val Ala Lys Pro Cys Ser Asp Met Tyr Gln Leu Gly Val Asp Phe Gln
 225 230 235 240
 Thr Phe His Ser Glu Tyr His Phe Asp Ser Cys Leu Leu His Ala Phe
 245 250 255
 Ala Pro Ala Asp Val Gly Arg Phe Val Glu Thr Gly Glu Gln Phe Asp
 260 265 270
 Asp Asn Arg Tyr Phe Phe Ser Val Leu Cys Gly Ala Asp Gln Ser Phe
 275 280 285
 His Tyr Leu Arg Val Phe Gly Gln Ala Ile Glu Ser His Leu Asp Ala
 290 295 300
 Phe His Phe Phe Ala Asp Gly Cys Leu Ala Gln Tyr Thr Asp His Gly
 305 310 315 320
 Ile Glu Arg Leu Ile Gly Val Met Gln Arg Pro Val Leu Phe Pro Asp
 325 330 335
 Gln Ser Gln Asp Thr Phe Arg Pro Val Gln Phe Leu Phe Glu Asp Gly
 340 345 350
 Arg Pro Gly Arg Ile Phe Gln Val Gly Pro Ser Ala Val Gly Lys Leu
 355 360 365
 His Gln Val Phe Glu Val Met Ile Ala Pro Ala Cys Tyr Thr Gly Val
 370 375 380
 Val Phe Ile His Val Glu Ala Val Gly Gln Leu Ser Gln Gln Ile Phe
 385 390 395 400
 Arg His Leu Phe Val Ile Asp Glu Thr Asp Arg Phe Ala Pro Phe Pro
 405 410 415
 Ala Phe Asp Pro Leu Arg Tyr Phe Leu Glu His Thr Cys Thr Gln Ile
 420 425 430
 Thr Val Tyr Leu His Phe Gly Val Phe Gly Glu Leu Glu Ser Val Ser
 435 440 445
 Phe Ile Val Arg Ile Ile His Ala Tyr Glu Asp His Arg Gln Ala Val
 450 455 460
 Ala Asp Asn Val Val Gln Lys His Gln Ile Gly Phe Ala Phe Arg Ile
 465 470 475 480
 Arg Gln Ala Asp Glu Ala Ser Glu Leu Gly Gly Gly Glu Pro Asp Asp
 485 490 495
 Gly Ile Ile Phe His Phe His Phe Ser Leu Thr Val Phe Ala Gln Gln
 500 505 510
 Ala Asp Gly Lys Val Asp Val Phe Ile Gly Leu Val Val Arg Met Thr
 515 520 525
 Gly Arg Phe Ser Lys Lys Glu Arg Ile Gly Arg Pro Ile Gln Pro Val
 530 535 540
 Pro Val Glu
 545

<210> 7307
 <211> 342
 <212> PRT
 <213> B.fragilis

<400> 7307

```

Pro Arg Met Arg Asn Ile Glu Lys Thr Asn Tyr Met Lys Gln Ile Leu
1      5      10      15
Tyr Lys Leu Phe Glu His Gln Tyr Leu Gly Arg Asp Glu Ala Arg Thr
      20      25      30
Ile Leu Gln Asn Ile Ala Gln Gly Lys Tyr Asn Asp Ala Gln Val Ala
      35      40      45
Ser Leu Ile Thr Val Phe Leu Met Arg Asn Ile Ser Val Glu Glu Leu
      50      55      60
Cys Gly Phe Arg Asp Ala Leu Leu Glu Met Arg Val Pro Val Asp Leu
      65      70      75      80
Ser Glu Phe Ala Pro Ile Asp Ile Val Gly Thr Gly Gly Asp Gly Lys
      85      90      95
Asn Thr Phe Asn Ile Ser Thr Ala Ala Cys Phe Thr Val Ala Gly Ala
      100     105     110
Gly Phe Pro Val Val Lys His Gly Asn Tyr Gly Ala Thr Ser Val Ser
      115     120     125
Gly Ala Ser Asn Val Met Glu Gln His Gly Val Lys Phe Thr Asp His
      130     135     140
Thr Asp Arg Leu Arg Arg Ser Met Glu Lys Cys Asn Ile Ala Tyr Leu
      145     150     155     160
His Ala Pro Leu Phe Asn Pro Ala Leu Lys Ala Val Ala Pro Ile Arg
      165     170     175
Lys Ala Leu Ala Val Arg Thr Phe Phe Asn Met Leu Gly Pro Leu Val
      180     185     190
Asn Pro Val Ile Pro Thr Tyr Gln Leu Leu Gly Val Tyr Asn Leu Pro
      195     200     205
Leu Leu Arg Leu Tyr Thr Tyr Thr Tyr Gln Glu Ser Ala Thr Arg Phe
      210     215     220
Ala Val Val His Ser Leu Asp Gly Tyr Asp Glu Ile Ser Leu Thr Asp
      225     230     235     240
Glu Phe Lys Val Ala Thr Cys Gly Asn Glu Lys Ile Tyr Thr Pro Glu
      245     250     255
Ser Leu Gly Phe Asn Arg Cys Arg Glu Ser Glu Leu Asp Gly Gly Asn
      260     265     270
Thr Pro Glu Asp Ala Ala Arg Ile Phe Asp Ala Val Met Glu Gly Thr
      275     280     285
Ala Thr Glu Ala Gln Lys Asn Val Val Ile Val Asn Ala Ala Phe Ala
      290     295     300
Ile Arg Val Ile Cys Pro Glu Lys Pro Ile Glu Glu Cys Ile Ala Leu
      305     310     315     320
Ala Arg Glu Ser Leu Glu Ser Gly Lys Ala Arg Glu Thr Leu Lys Lys
      325     330     335
Phe Val Glu Leu Asn Gly
      340

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<210> 7308
 <211> 151
 <212> PRT
 <213> B.fragilis

<400> 7308

```

Asn Lys Asn Arg Ile Ala Val Met Lys Ser Met Lys Phe Ile Gly Cys
1      5      10      15

```

Leu Tyr Leu Leu Ala Leu Leu Ser Ala Cys Gly Ser Arg Thr Ser Asp
 20 25 30
 Tyr Asp Ala Thr Gly Thr Phe Glu Ala Thr Glu Val Leu Val Ser Ala
 35 40 45
 Glu Ala Ser Gly Lys Leu Leu Tyr Phe His Val Glu Glu Gly Thr Arg
 50 55 60
 Leu Lys Ala Gly Glu Glu Val Gly Leu Ile Asp Thr Leu Gln Leu Tyr
 65 70 75 80
 Leu Lys Lys Leu Gln Leu Gln Ala Ser Met Lys Ser Val Glu Ser Gln
 85 90 95
 Arg Pro Asp Val Asn Lys Gln Ile Ala Ala Thr Arg Gln Gln Ile Ala
 100 105 110
 Thr Ala Arg Arg Glu Lys Arg Arg Val Glu Asn Leu Leu Lys Ala Gly
 115 120 125
 Ala Ala Asn Gln Lys Gln Leu Asp Asp Trp Gly Leu His His Gly Gly
 130 135 140
 Gly Arg Tyr Arg Val His Gly
 145 150

<210> 7309

<211> 64

<212> PRT

<213> B.fragilis

<400> 7309

Met Tyr Arg Leu Leu Ile His Ile Arg Glu Ser His Arg Glu Phe Arg
 1 5 10 15
 Gln Gln Phe Ile Ala Gly Gly Ile Val Ser Glu Lys Ser Ile Tyr Thr
 20 25 30
 Gly Met Glu Glu Ile Glu Ile Ala Thr Val Pro Ile Arg Glu Asn Leu
 35 40 45
 Ser Val Glu Val His His Leu Arg Cys Gly Ser Cys Arg Asn Leu Val
 50 55 60

<210> 7310

<211> 303

<212> PRT

<213> B.fragilis

<400> 7310

Ile Asp Ile Arg His Ala Phe Tyr Lys Asn Lys Ser Gln Lys Asp Ile
 1 5 10 15
 Ser Leu Cys Ser Asn Asn Ala Lys Gly Tyr Ile Asn Gln Pro Ile Leu
 20 25 30
 Ile Lys Met Ala Arg Ala Ile Gln Phe Thr Lys Met His Gly Thr Gly
 35 40 45
 Asn Asp Tyr Ile Tyr Val Asn Thr Leu Arg Phe Pro Ile Ala Arg Pro
 50 55 60
 Glu Lys Ala Ala Ile Glu Trp Ser Ala Tyr His Thr Gly Ile Gly Ser
 65 70 75 80
 Asp Gly Leu Val Leu Ile Gly His Ser Asp Lys Ala Asp Phe Ser Met
 85 90 95
 Arg Ile Phe Asn Ala Asp Gly Ser Glu Ala Met Met Cys Gly Asn Ala
 100 105 110
 Ser Arg Cys Ile Gly Lys Tyr Leu Tyr Glu Tyr Gly Leu Thr Ser Lys
 115 120 125
 Asn Val Ile Thr Leu Asp Thr Leu Ser Gly Ile Lys Ile Leu Glu Leu
 130 135 140
 His Leu Glu Gly Arg Thr Val Glu Thr Val Thr Val Asp Met Gly Ile


```

145          150          155          160
Pro Leu Glu Thr Gly Thr Ile Asp Phe Asp Gly Glu Phe Pro Phe Leu
          165          170          175
Ser Thr Gln Val Ser Met Gly Asn Pro His Leu Val Thr Phe Val Asp
          180          185          190
Asp Ile Arg Ile Val Asn Leu Ser Glu Met Gly Pro Lys Leu Glu Lys
          195          200          205
His Pro Leu Phe Pro Asp Arg Thr Asn Val Glu Phe Ala Gln Ile Thr
          210          215          220
Gly Glu Asn Thr Ile Arg Met Arg Val Trp Glu Arg Gly Ser Gly Ile
225          230          235          240
Thr Gln Ala Cys Gly Thr Gly Ala Cys Ala Thr Ala Val Ala Ala His
          245          250          255
Leu Thr Gly Arg Thr Gly Arg Thr Val Asn Val Val Met Asp Gly Gly
          260          265          270
Thr Leu Thr Ile Glu Trp Asp Glu Ala Thr Gly His Ile Ser Met Thr
          275          280          285
Gly Pro Ala Val Lys Val Phe Asp Gly Thr Ile Glu Leu Arg Glu
          290          295          300

```

<210> 7311
 <211> 60
 <212> PRT
 <213> B.fragilis

```

<400> 7311
Leu Tyr Arg Ser Asp Ala Thr His Gln Glu Pro Thr Val Met Thr Asp
1          5          10          15
Ser His Val Thr Thr Asp Tyr Thr Asp Phe His Arg Leu Ile Ile Tyr
          20          25          30
Phe Ile Glu Asn Gln Ile Lys Thr Ser Val Leu Ile Cys Val Ile Cys
          35          40          45
Gly Glu Tyr Leu Pro His Leu Ser Ser Ile Ile Arg
          50          55          60

```

<210> 7312
 <211> 66
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222>

(35), (36), (37), (38), (39), (40), (41), (42), (43), (44), (45), (46), (47), (48), (50), (51),
 (57), (60), (61), (63)

<223> Identity of amino acid sequences at the above locations are unknown.

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<400> 7312
Glu Tyr Asn Gly Asn Asn Ala Ile Gly Pro Asn Gly Tyr Thr Phe Leu
1          5          10          15
Ile Tyr Phe Gly Phe Phe Arg Leu Gln Ala Ala Tyr Lys Lys Lys Lys
          20          25          30
Gly Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
          35          40          45
Asn Xaa Xaa Pro Pro Leu Phe Thr Xaa Ile Ser Xaa Xaa Phe Xaa Pro
          50          55          60
Lys Asn
65

```

<210> 7313
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 7313

```

Thr Gly Cys Gly Thr Arg Arg Gln Cys Thr Lys Phe Asn Gly Thr Ser
1           5           10           15
Tyr Ile Thr Gln Arg Ala Ala Glu Ala Ile Tyr Thr Pro Glu Gly Lys
          20           25           30
Glu Gln Ile Gln Glu Thr Ile Asn Tyr Tyr Met Thr Asn Ala Arg Ile
          35           40           45
Met Lys Glu Gly Leu Glu Ser Thr Gly Leu Lys Val Tyr Gly Gly Val
          50           55           60
Asn Ala Pro Tyr Leu Trp Val Lys Asn Ser Lys Thr Glu Gln Ala Arg
65           70           75           80
Gly Ala Ser Leu Thr Arg Cys Tyr Thr Lys Thr Thr
          85           90

```

<210> 7314
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 7314

```

Asn Trp Lys Gly Gly Cys Glu Lys Met Lys Asn Asn Glu Ser Ile Arg
1           5           10           15
Ile Ala Val Ala Glu Thr Ser Val Ile Ile Arg Ser Gly Leu Thr Leu
          20           25           30
Ala Leu Lys Arg Leu Pro Asn Leu Lys Ile Gln Pro Val Glu Leu Leu
          35           40           45
Ser Val Glu Ala Leu Asn Asp Cys Leu Arg Thr Gln Phe Pro Asp Ile
          50           55           60
Leu Val Val Asn Pro Thr Phe Gly Asp Phe Phe Asp Val Ala Arg Phe
65           70           75           80
Arg Glu Glu Thr Ala Gly Lys Gly Ile Arg Val Val Ala Leu Val Ser
          85           90           95
Ser Phe Ile Asp Ala Ser Leu Leu Ser Lys Tyr Asp Ala Ser Phe Ser
          100          105          110
Ile Phe Asp Asp Leu Glu Ala Leu Ala Asn Lys Ile Asn Leu Leu Gln
          115          120          125
Asn Ile Glu Pro Glu Glu Glu Glu Asp Ser Gln Glu Asn Leu Ser Gln
          130          135          140
Arg Glu Lys Glu Ile Val Ile Cys Val Val Lys Gly Met Thr Asn Lys
          145          150          155          160
Glu Ile Ala Glu Lys Leu Phe Leu Ser Ile His Thr Val Ile Thr His
          165          170          175
Arg Arg Asn Ile Ser Lys Lys Leu Gln Ile His Ser Ala Ala Gly Leu
          180          185          190
Thr Ile Tyr Ala Ile Val Asn Lys Leu Val Glu Leu Ser Asp Val Lys
          195          200          205
Asp Leu
          210

```

<210> 7315
 <211> 378
 <212> PRT
 <213> B.fragilis

<400> 7315

Asn Asn His Ile Ser Val Phe Thr Thr Met Lys Thr His Lys Leu Leu
 1 5 10 15
 Phe Val Thr Leu Leu Gly Thr Val Cys Ile Ser Cys Gly His Pro Ser
 20 25 30
 His Lys Thr Gly Ser Glu Lys Glu Ala Leu Gly Lys Leu Leu Phe His
 35 40 45
 Asp Thr Ser Leu Ser Glu Pro Pro Gly Gln Ser Cys Ala Thr Cys His
 50 55 60
 Ala Ser Ser Lys Gly Phe Ala Asp Glu Gln Ala Arg Ala Ile Ser Glu
 65 70 75 80
 Gly Ala Val Gln Gly Leu Phe Ser Gln Arg Asn Ser Met Ser Val Cys
 85 90 95
 Tyr Ala Ala Phe Val Pro Glu Leu His Tyr Asp Asp Asp Asp Glu Asn
 100 105 110
 Tyr Val Gly Gly Leu Phe Trp Asp Gly Arg Ser Pro Ser Leu Gln Asp
 115 120 125
 Gln Ala Gly Ile Pro Leu Leu Asn Pro Val Glu Met Gly Asn Arg Asp
 130 135 140
 Lys Gln Met Val Ala Glu Lys Val Lys Arg Thr Pro Tyr Tyr Asp Arg
 145 150 155 160
 Ile Val Gln Ile Tyr Gly Glu Thr Glu His Ala Asp Ser Leu Phe Ala
 165 170 175
 His Val Thr Asp Ala Leu Ala Ala Tyr Gln Ala Ser Lys Glu Ile Asn
 180 185 190
 Pro Phe Thr Ser Lys Tyr Asp Ala Tyr Lys Lys Gly Asn Tyr Gln Leu
 195 200 205
 Thr Glu Gln Glu Ala Arg Gly Lys Glu Leu Phe Lys Asp Lys Gly Gln
 210 215 220
 Cys Ala Glu Cys His Ile Leu Asp Arg Asp Lys Arg Ala His Arg Thr
 225 230 235 240
 Leu Phe Thr Asp His Thr Tyr Asp Asn Leu Gly Ile Pro Lys Leu Pro
 245 250 255
 Asp His Pro His Tyr Lys Val Ala Ala Glu Tyr Phe Leu Leu Ala Ala
 260 265 270
 Asp Ser Val Asp Leu Gly Leu Gly Ala Ile Val Asn Ala Glu Ser Glu
 275 280 285
 Asn Gly Lys Phe Arg Val Pro Thr Leu Arg Asn Val Glu Leu Thr Ala
 290 295 300
 Pro Tyr Gly His Asn Gly Tyr Phe Lys Thr Leu Glu Glu Ile Val His
 305 310 315 320
 Phe Tyr Asn Val Arg Asp Val Ser Asp Glu Phe Pro Pro Ala Glu Tyr
 325 330 335
 Pro Ala Thr Val Asn Lys Glu Glu Leu Gly Asn Leu Gly Leu Thr Gln
 340 345 350
 Glu Glu Glu Ala Asp Ile Val Ala Phe Met Lys Thr Leu Thr Asp Gly
 355 360 365
 Tyr Met Lys Val His Lys Ser Glu Lys Arg
 370 375

<210> 7316

<211> 143

<212> PRT

<213> B.fragilis

<400> 7316

Ala Tyr Ser Ile His Ile Lys Arg Thr Asn Ser Lys Thr Asn Asn Ile
 1 5 10 15
 Thr Leu Thr Asn His Ile Met Arg Lys Leu Ile Leu Leu Val Asp Asp

```

      20              25              30
Lys Glu Thr Ile Ala Lys Val Ala Ser Ile Tyr Leu Gly Lys Asp Tyr
      35              40              45
Asp Ile Gln Tyr Phe Pro Asp Pro Ile His Ala Leu Glu Trp Leu His
      50              55              60
Glu Gly Lys Thr Pro Asp Leu Ile Ile Ser Asp Ile Arg Met Pro Leu
      65              70              75              80
Met Arg Gly Asp Glu Phe Leu His Tyr Leu Lys Cys Asn Glu Leu Phe
      85              90              95
Lys Asp Ile Pro Val Ile Met Leu Ser Ser Glu Glu Ser Thr Ser Glu
      100             105             110
Arg Ile Arg Leu Leu Gln Glu Gly Ala Val Asp Tyr Ile Leu Lys Pro
      115             120             125
Phe Asn Pro Met Glu Leu Lys Ile Arg Val Lys Lys Ile Ile Glu
      130             135             140

```

<210> 7317

<211> 134

<212> PRT

<213> B.fragilis

<400> 7317

```

Lys Lys Asn Val Ser Thr Asn Leu Lys Thr Pro Thr Asn Val Met Ala
1              5              10              15
Ile Glu Arg Lys Val Pro Gly Glu Ile Arg Ile Phe Leu Asn His Val
      20              25              30
Tyr Glu Phe Lys Lys Gly Val Arg Asn Met Val Leu Tyr Thr Met Asn
      35              40              45
Lys Glu His Glu Ala Phe Ala Ile Arg Arg Leu Glu Arg Gln Asn Ile
      50              55              60
Ser Tyr Leu Ile Gln Glu Val Asn Ala Asn Lys Ile Asn Leu Phe Phe
      65              70              75              80
Gly Lys Ala Glu Cys Met Asp Ala Ile Arg His Ile Ile Ile Arg Pro
      85              90              95
Leu Asn His Leu Thr Pro Glu Glu Asp Phe Ile Leu Gly Ala Met Leu
      100             105             110
Gly Tyr Asp Ile Cys Gln Gln Cys Lys Arg Tyr Cys Asn Lys Lys Gly
      115             120             125
Asn Ile Lys Ile Ala Gly
      130

```

<210> 7318

<211> 321

<212> PRT

<213> B.fragilis

<400> 7318

```

Asn Met Leu Phe Phe Ile Ser Asp Leu Leu Ile Asn Arg Ile Phe Tyr
1              5              10              15
Leu Ser Leu Pro Cys Asp Lys Asn Arg Phe Met Glu Lys Ile Lys Pro
      20              25              30
Leu Glu Leu Ala Leu Asp Leu Leu Lys His Ser Asn Ile Val Arg Asn
      35              40              45
Asn Glu Tyr Arg Phe Val Thr Pro Asp Phe Gly Ile Val Ile Ser Phe
      50              55              60
Thr His Met Glu Ser Arg Leu Phe Arg Leu Gly Gln Pro Tyr Arg Leu
      65              70              75              80
Lys Glu Gly Arg Ile Ile Arg Gly Leu Arg Gly Lys Ala Arg Ile Thr
      85              90              95

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```

Ile Asn Leu Ile Glu Tyr Asn Ile Tyr Pro Gln Thr Ile Ala Thr Phe
      100                      105                      110
Leu Pro Gly Ser Ile Ile Glu Leu Leu Glu Phe Thr Pro Asp Cys Asp
      115                      120                      125
Phe Gln Met Ile Ala Ala Asp Lys Asp Phe Leu Pro Leu Leu Arg Gly
      130                      135                      140
Asp Gln Leu Phe Glu Ser His Thr Arg Gln Asn Leu Val Met Gln Val
      145                      150                      155                      160
Thr Asp Thr Glu Trp Lys Leu Ser Asp Ala Tyr Phe Thr Leu Ile Trp
      165                      170                      175
Asp Thr Val Gln Glu Val Pro Phe Arg Arg Glu Val Val Gln Tyr Leu
      180                      185                      190
Leu Ala Ala Leu Leu His Asn Ile Lys Tyr Ile Arg Thr Glu Glu Ala
      195                      200                      205
Asn Asp Thr Ser Arg Arg Phe Ser His Gln Glu Glu Ile Phe Trp Arg
      210                      215                      220
Phe Ile Ala Leu Val Asn Glu Phe Ser Lys Asn Glu Arg Thr Val Gly
      225                      230                      235                      240
Phe Tyr Ala Asp Lys Leu Cys Leu Thr Pro Arg Tyr Leu Asn Thr Leu
      245                      250                      255
Ile Arg Gln Val Ser His Gln Thr Val Met Glu Trp Ile Asn Gln Ser
      260                      265                      270
Val Ile Leu Glu Ala Lys Val Leu Lys His Ser Asn Leu Leu Val
      275                      280                      285
Tyr Gln Ile Ser Asp Glu Leu His Phe Pro Asn Pro Ser Phe Phe Cys
      290                      295                      300
Lys Phe Phe Lys Arg Met Thr Gly Met Thr Pro Gln Glu Tyr Gln Lys
      305                      310                      315                      320
Arg

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<210> 7319
<211> 78
<212> PRT
<213> B.fragilis

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<400> 7319
Arg Ala Pro Pro Glu Met Arg Leu Trp Lys Leu Ser Ile Trp Glu Asp
1          5          10          15
Gly Tyr Thr Ile Pro Cys Val Cys Tyr Tyr Ile Glu Lys Glu Asp Val
      20          25          30
Tyr Glu Leu Val Asp Gly Tyr His Arg Tyr Lys Val Met Met Thr Ser
      35          40          45
Pro Arg Ile Tyr Lys Arg Glu Asn Gly Leu Leu Pro Val Thr Val Ile
      50          55          60
Arg Lys Asp Leu Ala Glu Arg Met Ser Leu Tyr His Pro Ser
65          70          75

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<210> 7320
<211> 122
<212> PRT
<213> B.fragilis

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<400> 7320
Cys Asn Ile Ala Pro Asn Thr Lys Ile Ser Gly Gly Lys Arg Ile Ser
1          5          10          15
Ser His Val Pro His Arg Arg Asn Asp Val Gly Leu Ile Phe Arg Ser
      20          25          30
Val Ala Ser Ser Leu Ala Asn Ala Lys Asn Gln Leu Gly Asn Phe Tyr

```

```

      35              40              45
Arg Arg Ile Arg Ser Arg Ala Gly Gly Lys Ala Ala Val Ile Ala Thr
  50              55              60
Ala His Lys Val Thr Glu Ile Phe Phe Ala Met Val Ala Asn Gln Thr
  65              70              75              80
Pro Tyr Asn Pro Glu Lys Val Gly Ile Asp Glu Lys Val Leu Leu Glu
      85              90              95
Lys Arg Ile Thr Arg Tyr Lys Arg Glu Leu Glu Arg Ile Thr Gly Met
      100              105              110
His Ile Glu Ile Gly Asn Ala Cys Val Pro
      115              120

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<210> 7321

<211> 90

<212> PRT

<213> B.fragilis

<400> 7321

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Leu Pro Gly Tyr Ile Asp His Gly Gly Thr Gly Ile Gly Lys Pro Ser
  1              5              10              15
Lys Leu Gln Gly Phe Lys Gln Leu Leu Thr Asp Ile Met Gln Ala
      20              25              30
Asn Gln Arg Leu Ala Ala Val Ile Leu Ala Asp Leu Pro Lys Pro Asp
      35              40              45
Val Ile Leu Thr Leu Lys Glu Ala Ala Arg Ile Leu Ala Gly Gly Phe
      50              55              60
Tyr Leu Val Gly Gly Lys Arg Asp Ile Ile His Arg Ala Val Ile Phe
      65              70              75              80
Gly Thr His Ile Gly Thr Val Arg His Ile
      85              90

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<210> 7322

<211> 1045

<212> PRT

<213> B.fragilis

<400> 7322

```

Val Asn Lys Tyr Phe Ser Leu Ile Thr Asn Gln Val Thr Tyr Leu Phe
  1              5              10              15
Phe His Gly Met Glu Gln Ile Ser Glu Tyr Leu Phe Thr Thr Glu Glu
      20              25              30
Gln Ala Val Ile Ala Arg Ser Lys Ala Glu Gly Ser Tyr Met Lys Ala
      35              40              45
Pro Asn Gly Gln Ala Thr Asn Leu Asn Glu Lys Gln Trp Ala Gln Val
      50              55              60
Arg Thr Arg Ala Phe Arg Asp Trp Phe Gly Asp Trp Glu Asn Cys Pro
      65              70              75              80
Asp Glu Ala Ser Lys Val Arg Asp Ala Asn Gly Glu Pro Leu Val Val
      85              90              95
Tyr His Gly Ser Arg Glu Asn Phe Tyr Glu Phe Lys Arg Trp Thr Asp
      100              105              110
Gly Leu Ile Asn Ser Gly His Phe Ser Pro Asp Arg Lys Asn Ala
      115              120              125
Leu Gly Tyr Gly Gly Asn Ile Tyr Asp Val Tyr Leu Asn Leu Arg Asn
      130              135              140
Pro Leu Glu Val Asp Ala Gln Gly Ala Asn Phe Ser Ser Ile Glu Tyr
      145              150              155              160
Gly Gly Glu Lys Val Ala Ala Ser Asp Leu Gly Asn Leu Ala Glu Met
      165              170              175

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Glu Gly Tyr Asp Gly Val Val Ile Ser Asp Val Ala Asp Ser Ala Asp
 180 185 190
 Met Gly Ser Glu Asn Asp Arg Thr Val Asp Tyr Ile Ser Phe Ala Ala
 195 200 205
 Asn Gln Ile Lys Ser Ala Ser Gln Asn Thr Gly Ser Phe Leu Glu Ser
 210 215 220
 Gln Asp Asp Ile Arg Phe Arg Glu Ile Ser Gln Asp Asp Gly Gly Lys
 225 230 235 240
 Ser Leu Val Gly Leu His Asn Ile Ser Glu Glu Lys Leu Leu Lys Ala
 245 250 255
 Leu Lys Leu Gly Gly Leu Ala Asn Pro Ser Ala Ala Val Ile Asp Ile
 260 265 270
 Ala Arg Gln Ser His Glu Glu Tyr Gly Glu Ile Ser Leu Val Leu Pro
 275 280 285
 Ser Ser Met Ile Asp Lys Arg Thr Gly Arg Asn Ala Gly Thr Phe Ser
 290 295 300
 Gly Asp Ala Trp Thr Pro Val Tyr Pro Gln Ile Glu Arg Gln Phe Ser
 305 310 315 320
 Gly Asp Gly Ser Gly Arg Val Arg Asp Ala Ile Ser Arg Leu Pro Gln
 325 330 335
 Glu Met Gln Pro Asp Val Arg Ser Ala Trp Asn Asn Tyr Met Asp Gly
 340 345 350
 Arg Asp Glu Gly Ser Ala Phe Ala Tyr Gln Phe Leu Tyr Glu Arg Gly
 355 360 365
 Glu Ala Pro Glu Phe Arg Lys Val Glu Pro Leu Phe Gly Glu His Leu
 370 375 380
 Arg Asn Arg Ile Ser Ala Ile Asp Ala Leu Asp Asn Tyr Asp Glu Arg
 385 390 395 400
 Asn Thr Ala Leu Leu Glu Val Tyr Ile Glu Glu Asn Phe Gly Gly Asp
 405 410 415
 Gln Thr Lys Phe Lys Asp Tyr Ile Glu Thr Arg Lys Arg Val Leu Gln
 420 425 430
 Asp Lys Ile Gln Ala Phe Pro Glu Gln Lys Gln Lys Gly Leu Ala Tyr
 435 440 445
 Arg Lys Ala Val Gln Lys Leu Asn Asp Ile Glu Glu Arg Gly Tyr Glu
 450 455 460
 Tyr Ser Ser Val Gln Asp Phe Tyr Asp Arg Val Lys Thr Asp Ile Arg
 465 470 475 480
 Gln Ala Gly Ser Val Asp Thr Tyr His Thr Leu Gln Asp Ala Leu Asp
 485 490 495
 Lys Ile Asn Gly Ser Glu Ala Leu Ser Arg Gln Tyr Ala Glu Trp Lys
 500 505 510
 Glu Ser Leu Ala Asp Lys Tyr Gly Ile Lys Glu Val Leu Phe Lys Gly
 515 520 525
 Tyr Thr Pro Asp Gly Ile Arg Ile Tyr Leu Pro His Thr Leu Glu Asn
 530 535 540
 Val Ser Gly Leu Met Lys Gln Gln Gly Leu Ala Ala Ala Thr Gly Trp
 545 550 555 560
 Gly Gly Ser Phe Ser Lys Phe Ala Ala Ala Leu Met Lys Pro Val Gly
 565 570 575
 Thr Leu Asp Gly Ile Arg Arg Gln Lys Gly Lys Leu Ile Thr Asp His
 580 585 590
 Ser Asp Leu Glu Ala Phe Arg Asp Lys Trp Gln Glu Val Tyr Phe Asp
 595 600 605
 Leu Gly Ile Lys Leu Asn Pro Gly Gly Gly Thr Phe Asp Asp Thr Gly
 610 615 620
 Leu Tyr Arg Val Glu Asp Ile Ala Leu Lys Pro Asp Pro Gly Ser Phe
 625 630 635 640
 Ala Lys Arg Glu Tyr Gly Val Glu Leu Thr Arg Glu Asp Val Arg Gln

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        645                650                655
Leu Lys Glu Met Val Asp Ala Ile Gln Asn Glu Cys Pro Ala Met Tyr
        660                665                670
Phe Glu Thr Lys Phe Glu Arg Pro Val Tyr Leu Asn Glu Phe Val Ala
        675                680                685
Ala Ile Val Pro Glu Asn Val Asn Glu Asp Val Ser Lys Ser Ile Arg
        690                695                700
Glu Ser Gly Leu Gln Val Phe Val Tyr Lys Pro Lys Asp Glu Ser Ser
705                710                715                720
Arg Asn Glu Ala Val Lys Leu Ala Ser Glu Ile Lys Gly Val Arg Phe
        725                730                735
Arg Leu Ala Gly Gly Thr Gly Ala Phe Thr Pro Ala Cys Thr Ala Ser
        740                745                750
Gly Gln Val Phe Leu Ser Gly Asp Glu Arg Met Ala Glu Leu Ser Arg
        755                760                765
His Ala Val Phe Leu Ala Arg Lys Gln His Ile Pro Val Asn Ile Ile
770                775                780
His Ser Ile Gly Glu Val Asp Ser Pro Lys Val Arg Ala Leu Ile Ala
785                790                795                800
Gly Gly Lys Asp Ile Arg Gly Trp Tyr Asp Ile Pro Ser Asp Arg Ile
        805                810                815
Cys Leu Tyr Leu Pro Lys Ala Arg Gly Lys Glu Asp Ile Glu Arg Thr
        820                825                830
Leu Leu His Glu Gly Val Gly His Tyr Gly Leu Arg Arg Leu Ala Gly
        835                840                845
Arg Lys His Met Asp Ala Phe Leu Asp Asp Ile Phe Ala Gly Cys Gly
        850                855                860
Glu Lys Val Arg Gly Glu Ile Ile Arg Leu Ala Gly Thr Gly Lys Met
865                870                875                880
Asp Ile Arg Thr Ala Thr Glu Glu Tyr Leu Ala Gln Met Ala Glu Ser
        885                890                895
Gly Thr Asp Ala Arg Val Trp Asp Lys Ile Arg Leu Ala Phe Arg Asn
        900                905                910
Leu Leu Arg Lys Leu Gly Phe Ser Ile Glu Val Asp Asp Arg Glu Leu
        915                920                925
Lys Gly Leu Leu Ala Ala Ser Arg Glu Asn Leu Lys Arg Thr Ala Ala
        930                935                940
Thr Arg Ile Pro Glu Lys Ile Gln Thr Pro Lys Gly Glu Leu Glu Leu
945                950                955                960
Thr Pro Gly Tyr Ala Ala Gly Ser Leu Arg Ser Lys Asp Gly Val Arg
        965                970                975
Asp Val Thr Pro Phe Leu Lys Glu Met Lys Arg Ala Gly Leu Lys Pro
        980                985                990
Ala Ser Leu Ser Pro Glu Glu Trp Lys Ser Leu Phe Ser Gly Lys Gly
        995                1000                1005
Ile Ala Leu Pro Asp Gly Arg Met Leu Met Ala Val Lys Glu Pro Ala
1010                1015                1020
Gly Tyr Gly Leu Lys Ile Thr Ala Pro Ala Leu Arg Ser Ile Lys Thr
1025                1030                1035                1040
Ala Glu Met Glu Ile
        1045

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<210> 7323

<211> 126

<212> PRT

<213> B.fragilis

<400> 7323

Arg Ile Met Gln Val Cys Val Pro Met Asp Arg Ala Lys Asp Asn Asn


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1           5           10           15
Arg Ala Phe Gly Ala Tyr Thr Ser Asp Leu His Ala Ile Leu Glu Trp
          20           25           30
Val Arg Glu Cys Gly Ile Lys Thr Val Ala Met Glu Ser Thr Gly Val
          35           40           45
Tyr Trp Ile Pro Leu Phe Cys Arg Leu Gln Asp Asp Gly Leu Asp Val
          50           55           60
Val Leu Thr Asn Ala Arg Asp Ile Lys Asn Ile Thr Glu Arg Lys Thr
65           70           75           80
Asp Glu Ser Asp Ala Glu Trp Leu Leu Leu Leu His Gln Tyr Gly Leu
          85           90           95
Leu Lys Thr Ser Phe Gln Leu His Asn Asp Ala Lys Arg Met Arg Thr
          100          105          110
Leu Thr Arg His Arg Asp Thr Leu Ser Arg Glu Pro Gln Ala
          115          120          125

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<210> 7324

<211> 140

<212> PRT

<213> B.fragilis

<400> 7324

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Pro Gln Thr Asn His Val Met Leu Asn Glu Asn Asn Arg Ser Ser Asp
1           5           10           15
Arg Ile Leu Thr Glu Arg Ile Leu Asp Asp Pro Asp Met Ile Leu Lys
          20           25           30
Ile Glu Asn Pro Ser Leu Lys Gln Gln Met Ala Ala Val Gln Lys Lys
          35           40           45
Pro Glu Leu Ile Ala Ser Leu Pro Leu Ala Gly Glu Lys Val Gln Leu
          50           55           60
Ala Ala Val Ile Ala Cys Pro Glu Ser Ile Leu Leu Val Asp Thr Pro
65           70           75           80
Ala Pro Ala Ala Cys Phe Met Ala Val Glu Arg Met Leu Lys Glu Glu
          85           90           95
Leu Leu Pro Val Pro Gly Val Leu Asn Ala Ala Arg Glu Leu Ile Leu
          100          105          110
Gln Met Lys Lys Asp Lys Ala Asp Gly Arg Ser Ser Gly Ala Ala Ile
          115          120          125
Glu Lys Phe Leu Asp Glu Val Lys Pro Ile Lys Asn
          130          135          140

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<210> 7325

<211> 155

<212> PRT

<213> B.fragilis

<400> 7325

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Ile Arg Thr Asn Tyr Arg Asp Ala Tyr Arg Asn Trp Gln Cys Met Cys
1           5           10           15
Ser Ile Glu Ala Ile Glu Ala Val Lys Arg Cys Arg Gln Ala Gly Phe
          20           25           30
Gln Asn Ile Ser Ile Asp Leu Ile Tyr Gly Leu Pro Gly Glu Thr Asp
          35           40           45
Gln Arg Trp Ala Gln Asp Leu Gln Gln Thr Val Ser Leu Asn Val Glu
          50           55           60
His Ile Ser Ala Tyr His Pro Ile Tyr Glu Glu Gly Thr Pro Leu Tyr
65           70           75           80
Lys Met Leu Gln Gln His Ser Val Phe Gln Val Asp Glu Asp Ser Ser
          85           90           95

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Leu Asn Phe Phe Ser Thr Leu Ile Asp Thr Leu Ser Ala Ala Gly Tyr
 100 105 110
 Glu His Tyr Glu Ile Ser Asn Phe Cys Lys Pro Arg Met Tyr Ser Arg
 115 120 125
 Tyr Asn Thr Ser Tyr Arg Gln Gly Ile Pro Tyr Leu Gly Cys Gly Pro
 130 135 140
 Ser Ala His Ser Phe Asp Gly Asp Ser Arg Glu
 145 150 155

<210> 7326
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 7326
 Lys Met Pro Glu Pro Ile Arg Pro Asp Thr Lys Asn Gly Lys Val Leu
 1 5 10 15
 Asn Leu Leu Pro Asn Val Ile Phe Tyr Gly Ile Phe Leu Leu Phe Tyr
 20 25 30
 Asn Ser Arg Ser Phe Phe Gln Thr Val Val Asp Pro Arg Leu Asn His
 35 40 45
 Ile Leu Tyr Lys Asn Val Ile Tyr Ile Val Ile Arg Lys Asn Phe Val
 50 55 60
 Ser Ala Pro Asn Asp Trp His Arg Asn Ser Phe Asn Cys Gln Pro Leu
 65 70 75 80
 Asp Ile Thr Glu

<210> 7327
 <211> 536
 <212> PRT
 <213> B.fragilis

<400> 7327
 Ile Val Met Glu Asn Leu Ile Pro Tyr Ile Lys Leu Ile Ile Leu Ala
 1 5 10 15
 Leu Ala Cys Leu Val Thr Gly Val Cys Thr Leu Ser Arg Lys Trp Tyr
 20 25 30
 Val Asn Leu Ala Val Phe Leu Ile Cys Ile Ala Gly Glu Thr Phe Met
 35 40 45
 Ala Tyr Leu Phe Phe Pro Ala Tyr Ala Leu Trp Pro Ala Cys Gly Ser
 50 55 60
 Val Ala Ile Phe Ala Phe Ser Thr Ala Trp Glu His Leu Lys Pro Ser
 65 70 75 80
 Gly Arg Lys Glu Asn Lys Ser Pro Ile Arg Leu Pro Val Ile Ser Gly
 85 90 95
 Val Pro Tyr Arg His Leu Glu Phe Tyr Tyr Tyr Tyr Ser Asn Phe Leu
 100 105 110
 Val Tyr Gly Gly Ala Gly Ser Gly Lys Thr Lys Ser Ile Gly Lys Trp
 115 120 125
 Leu Leu Glu Glu Tyr Ile Lys Leu Gly Phe Ala Gly Phe Ile Tyr Asp
 130 135 140
 Phe Lys Asp Val Asp Tyr Thr Gln Thr Ala Tyr Asn Leu Thr Lys Lys
 145 150 155 160
 Tyr Gly Tyr Pro His Lys Phe Tyr Tyr Val Ser Phe Asp Lys Pro Glu
 165 170 175
 Arg Ser Tyr Arg Phe Asn Pro Leu Lys Val Val Lys Asp Arg Thr Glu
 180 185 190
 Leu Met Gln Leu Met Glu Asp Val Leu Leu Ala Leu Leu Pro Lys Gly

195 200 205
 Glu Lys Gln Asn Glu Trp Val Ala Gly Gly Leu Gly Ile Leu Arg Gly
 210 215 220
 Val Ala Phe Arg Phe Trp Asp Glu Phe Pro Glu Tyr Cys Thr Leu Pro
 225 230 235 240
 His Ile Met Ala Phe Ile Met Thr Ala Ser Thr Arg Gln Leu Ser Ile
 245 250 255
 Phe Leu Gln Gln Asn Leu Val Ala Glu Met Met Ala Gly Ala Tyr Leu
 260 265 270
 Lys Ala Glu Gly Ser Glu Lys Thr Gln Ala Ser Tyr Leu Ser Thr Leu
 275 280 285
 Cys Asn Asn Leu Ser Thr Ile Ser Gln Asn Glu Glu Ile Ala Tyr Ile
 290 295 300
 Leu Ser Gly Asp Asp Phe Asp Phe Asn Leu Ile Asp Pro Glu Asp Pro
 305 310 315 320
 Lys Leu Phe Ala Ile Ser Asn Asn Phe Ser Lys Asn Ser Val Tyr Ala
 325 330 335
 Pro Val Ile Gly Met Leu Met Ser Ile Ser Thr Arg Gln Phe Thr Met
 340 345 350
 Gln Asn Lys Val Pro Phe Val Tyr Phe Leu Asp Glu Met Thr Thr Val
 355 360 365
 Asn Ile Lys Asn Phe Glu Thr Leu Pro Ser Val Leu Arg Glu Tyr Lys
 370 375 380
 Val Gly Phe Val Leu Leu Thr Gln Ser Gly Ala Lys Leu Glu Ala Leu
 385 390 395 400
 Tyr Gly Lys Leu Asp Arg Ala Ser Val Glu Ala Asn Phe Gly Ile Gln
 405 410 415
 Phe Phe Gly Arg Thr Lys Asp Val Glu Ala Leu Lys Tyr Tyr Pro Gln
 420 425 430
 Met Phe Gly Lys Glu Glu Lys Glu Arg Lys Ser Arg Ser Thr Gly Lys
 435 440 445
 Ser Gly Ser Ser Ser Asn Arg Ser Val Thr Ile Ser Ser Gln Lys Glu
 450 455 460
 Asp Ile Tyr Gln Gly Arg Asp Phe Ala Asp Leu Glu Pro Gly Glu Phe
 465 470 475 480
 Ile Gly Ser Ala Thr Arg Ala Asn Val Arg Tyr Phe Lys Val Met Leu
 485 490 495
 Gly Glu Phe Lys Glu Lys Asp Glu Lys Pro Leu Pro Asp Val Arg Val
 500 505 510
 Leu Glu Pro Glu Glu Ile Thr Arg Asn Phe Ser Arg Ile Leu Ala Glu
 515 520 525
 Val Arg Ser Leu Phe Pro Cys Glu
 530 535

<210> 7328

<211> 229

<212> PRT

<213> B.fragilis

<400> 7328

Leu Arg Met Asp Thr Glu Arg Asn Met Gln Ser Asp Cys Tyr Phe Cys
 1 5 10 15
 Lys Lys Asn Tyr Phe Cys Glu Leu Phe Ile Leu Lys Ile His Arg Met
 20 25 30
 Ser Thr His Gly Ser Leu Ser Glu Val Glu Arg Phe Asn Leu Leu Tyr
 35 40 45
 Lys Ser Ser Phe Asn Lys Val Cys Asn Phe Ala Cys Phe Tyr Val Arg
 50 55 60
 Asn Lys Gln Ala Ser Glu Asp Ile Thr Met Asp Ala Phe Leu Gln Leu

65 70 75 80
 Leu Glu Thr Met Lys Val Glu Ser Val Asp Asn Pro Met Ala Leu Leu
 85 90 95
 Ile Thr Ile Val Lys His Lys Ser Leu Asp Tyr Leu Lys Thr Gln Val
 100 105 110
 Arg Arg Glu Asp Thr Lys Asp Asp Leu Ile Gln Trp Lys Gln Arg Glu
 115 120 125
 Leu Ala Ile Arg Ile Ser Asn Leu Glu Gly Cys Asn Pro Ser Tyr Ile
 130 135 140
 Phe Ser Gln Glu Ile Lys Ser Ile Val Met Lys Thr Leu Asn Gln Leu
 145 150 155 160
 Ser Glu Gln Thr Lys Lys Val Phe Ile Met Ser Arg Phe Glu Asn Lys
 165 170 175
 Ser Gly Lys Glu Ile Ala Gln Thr Leu Gly Ile Ser Val Lys Gly Val
 180 185 190
 Asp Tyr His Met Asn Lys Ala Leu Lys Glu Leu Arg Ala Ala Leu Lys
 195 200 205
 Asp Tyr Leu Pro Ile Leu Thr Trp Leu Cys Phe Met Asn Pro Ile Asn
 210 215 220
 Lys Gly Trp Ile Ser
 225

<210> 7329
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 7329
 Ile Ser Thr Ser Ile Cys Met Lys Cys Met Pro Met Lys Leu Lys Val
 1 5 10 15
 Arg Ile Phe Glu Gly Lys Ser Pro Glu Leu Tyr Leu Ala Val Gly His
 20 25 30
 Phe Val Leu Ser Pro Ala Cys Leu Arg Glu Asn Asn Asn Tyr Pro Tyr
 35 40 45
 Lys Ser Ser Arg Met Phe Thr Trp His Val Leu Tyr His Glu Gly Gln
 50 55 60
 Val Val Ala Phe Met Pro Val Glu Arg Lys Leu Asp Gly Gly Tyr Lys
 65 70 75 80
 Ile Asp Asn Tyr Tyr Ala Thr Pro Asp Arg Glu Arg Gly Asn Gln Leu
 85 90 95
 Leu Lys Leu Leu Lys Ser Val Ile Lys Glu Ser Gly Asp Glu Thr Ser
 100 105 110
 Pro Leu Arg Ala Thr Val Gln Lys Arg Asp Val Gly Ile Phe Lys Tyr
 115 120 125
 Met Asn Phe Ile Thr Ile Arg Glu Thr Lys Leu Tyr Val Met Met Glu
 130 135 140
 Leu Val Arg Met Gly Ser Asp Ser Gly Lys Gln Asp Gly
 145 150 155

<210> 7330
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 7330
 Val Leu Met Arg Ser Leu Asp Arg Gly Gly Thr Ser Ile Pro Gln Lys
 1 5 10 15
 Gly Glu Ala Tyr Asp Leu Asn Gly Asp Gly Val Lys Asp Val Ala Val
 20 25 30

Val Asp Lys Glu Pro Pro Ala Gly Glu Lys Ile Lys Gly Val Gln Tyr
 35 40 45
 Val Val Ile Gly Lys Thr Asn Arg Leu Ser Glu Gly Asp His Gly Tyr
 50 55 60
 Ile Glu Phe Gly Phe Asn Gln Gly Arg Lys Trp Asp Asp Lys Lys Tyr
 65 70 75 80
 Leu Arg Pro Ile Pro Leu Thr Ala Thr Gln Ile Asn Pro Ala Leu Leu
 85 90 95
 Pro Gln Asn Pro Gly Trp
 100

<210> 7331

<211> 423

<212> PRT

<213> B.fragilis

<400> 7331

Lys Arg Met Gly Gly Thr Arg Met Asn Val Tyr Gln Ala Leu Arg Glu
 1 5 10 15
 Arg Ile Arg Arg Ile Phe Gly Glu Tyr Asp Tyr Val Tyr Leu Ser Phe
 20 25 30
 Ser Gly Gly Lys Asp Ser Gly Val Leu Leu Asn Ala Cys Val Glu His
 35 40 45
 Ile Lys Gln Tyr Gly Gly Arg Met Gly Val Phe His Met Asp Tyr Glu
 50 55 60
 Val Gln Tyr Ser Leu Thr Thr Lys Tyr Val Asp Glu Met Leu Ser Ser
 65 70 75 80
 Asn Arg Asp Ile Leu Asp Val Tyr Arg Cys Cys Val Pro Phe Lys Val
 85 90 95
 Gly Ser Ala Ala Ser Met Tyr Gln Arg Phe Trp Arg Pro Trp Asp Pro
 100 105 110
 Cys Val Arg Trp Val Arg Glu Met Pro Val Glu Tyr Leu Gly Thr Glu
 115 120 125
 Ala Phe Asp Phe Tyr Thr Pro Gln Met Trp Asp Tyr Glu Phe Gln Glu
 130 135 140
 Cys Phe Ser Phe Trp Leu Arg Lys Gln Leu Gly Val Gln Lys Val Ala
 145 150 155 160
 Cys Leu Val Gly Ile Arg Thr Gln Glu Ser Phe Asn Arg Trp Arg Thr
 165 170 175
 Ile Tyr Arg Ser Thr Pro Gly Pro Ser Ala Asp Trp Ile Cys Pro Val
 180 185 190
 Asp Glu Gly Ile Asp Asn Val Tyr Pro Leu Tyr Asp Trp His Thr Thr
 195 200 205
 Asp Ile Trp Thr Ala Asn Gly Arg Phe Arg Trp Lys Tyr Asn Arg Leu
 210 215 220
 Tyr Asp Leu Tyr Tyr Gln Ala Gly Val Pro Leu Asn Ser Gln Arg Val
 225 230 235 240
 Ala Ser Pro Phe Ile Ser Gln Ala Ile Pro Ser Leu His Leu Tyr Arg
 245 250 255
 Val Ile Glu Pro Glu Met Trp Gly Lys Met Leu Gly Arg Val Asn Gly
 260 265 270
 Val Asn Phe Ala Gly Val Tyr Gly Asn Ser Val Ala Met Gly Trp Arg
 275 280 285
 Gly Val Arg Leu Pro Glu Gly Met Thr Trp Lys Lys Tyr Leu Phe Phe
 290 295 300
 Leu Leu Asp Thr Leu Pro Glu Asp Ala Arg Asn Asn Tyr Leu Asp Lys
 305 310 315 320
 Leu Glu Val Ser Val Arg Phe Trp Arg Glu Lys Gly Gly Cys Leu Ala
 325 330 335

Lys Glu Thr Ile Met Lys Leu Lys Arg Leu Asn Ile Pro Phe Glu Leu
 340 345 350
 Gly Gly Thr Ser Gly Tyr Arg Thr His Lys Ala Pro Val Arg Met Glu
 355 360 365
 Tyr Leu Asp Asp Ile Asp Leu Pro Glu Phe Arg Asp Leu Pro Ser Tyr
 370 375 380
 Lys Arg Met Cys Ile Cys Ile Leu Lys Asn Asp His Cys Ala Asn His
 385 390 395 400
 Gly Leu Phe Thr Glu Gln Ser Gly Glu Arg Thr Pro Thr Pro Asp Asp
 405 410 415
 Gly Arg Val Arg Ile Leu Phe
 420

<210> 7332

<211> 296

<212> PRT

<213> B.fragilis

<400> 7332

Leu Asp Ala Ile Ser Leu Thr Glu His Ile Glu Tyr Arg Pro His Lys
 1 5 10 15
 Lys Asp Val Val Ala Asp His Asn Arg Ser Phe Asp Leu Cys Gln Lys
 20 25 30
 Gln Ala Glu Lys Leu Gly Ile Leu Ile Arg Gly Ser Glu Ile Thr
 35 40 45
 Arg Pro Met Ala Pro Gly His Phe Asn Ala Ile Phe Leu Ala Asp Ser
 50 55 60
 Asn Pro Leu Glu Gln Lys Glu Tyr Lys Asp Ala Phe Asn Glu Ala Lys
 65 70 75 80
 Arg Gln Gly Ala Phe Ile Phe Trp Asn His Pro Gly Trp Ala Ala Gln
 85 90 95
 Gln Pro Asp Thr Thr Lys Trp Trp Pro Glu His Thr Glu Leu Tyr Asn
 100 105 110
 Glu Gly Cys Met His Gly Ile Glu Val Ala Asn Gly Pro Leu Tyr Met
 115 120 125
 Pro Glu Ala Ile Gln Trp Cys Leu Asp Lys Asn Leu Thr Met Ile Gly
 130 135 140
 Thr Ser Asp Ile His Gln Pro Ile Gln Thr Asp Tyr Asp Phe Ser Lys
 145 150 155 160
 Asp Glu His Arg Thr Met Thr Phe Val Phe Ala Lys Glu Arg Ser Leu
 165 170 175
 Lys Gly Ile Arg Glu Ala Leu Glu Asn Arg Arg Thr Ala Ala Tyr Tyr
 180 185 190
 Arg Glu Leu Val Ile Gly Arg Glu Asp Leu Leu Arg Pro Phe Phe Glu
 195 200 205
 Lys Cys Val Glu Ile Glu Glu Ile Ser Arg Asn Glu Lys Gly Val Thr
 210 215 220
 Leu Ser Ile Thr Asn Thr Thr Asp Leu Val Leu Lys Leu Lys Lys Thr
 225 230 235 240
 Ala His Asp Thr Ser Leu Val Tyr Phe Arg Asp Met Thr Leu Lys Pro
 245 250 255
 His Thr Arg Tyr Ser Val Arg Ile Gly Phe Asp Asn Gly Ile Lys Gly
 260 265 270
 Gly Asp Met Asn Phe Glu Val Thr Asn Phe Ile Val Thr Pro Asp Lys
 275 280 285
 Gly Leu Glu Tyr Thr Ile Ser Leu
 290 295

<210> 7333

<211> 118
 <212> PRT
 <213> B.fragilis

<400> 7333

Ile	Met	Asn	Met	Asp	Lys	Asn	Asp	Ser	Phe	Asp	Gly	Pro	Leu	Gln	Glu
1				5					10					15	
Gly	Arg	His	Thr	Thr	Leu	Arg	Ser	Phe	Ser	Trp	Gly	Asn	Arg	Glu	Phe
			20					25					30		
Thr	Ile	Ser	Ser	Asp	Lys	Ile	Ser	Leu	Tyr	Val	Gly	Gly	Ile	Pro	Tyr
		35					40					45			
Asp	Thr	Lys	Pro	Met	Leu	Asp	Ile	Leu	Arg	Gly	Ser	Gly	Val	Asp	Pro
	50					55					60				
Gly	Lys	Leu	Ser	Pro	Ala	Arg	Trp	Ile	Ser	Leu	Leu	Arg	Gly	Gln	Pro
65					70					75				80	
Thr	Arg	Leu	Pro	Gly	Cys	Glu	Lys	Pro	Phe	Met	Leu	Phe	Lys	Ala	Pro
				85					90					95	
Ser	Gly	Tyr	Thr	Leu	Lys	Cys	Leu	Glu	Ile	Thr	Arg	Gly	Arg	Asn	Arg
			100					105						110	
Ala	Phe	Gln	Thr	Glu	Met										
			115												

<210> 7334
 <211> 126
 <212> PRT
 <213> B.fragilis

<400> 7334

Pro	Arg	Ser	Met	Trp	Met	Arg	Cys	Cys	Leu	Arg	Thr	Gly	Ile	Phe	Trp
1				5					10					15	
Met	Phe	Thr	Ala	Val	Ala	Cys	Leu	Ser	Arg	Ser	Val	Arg	Leu	His	Pro
			20					25					30		
Cys	Thr	Arg	Asp	Ser	Gly	Gly	Pro	Gly	Thr	Leu	Val	Ser	Val	Gly	Ser
		35				40						45			
Gly	Arg	Cys	Leu	Trp	Asn	Thr	Trp	Val	Arg	Lys	His	Leu	Ile	Phe	Ile
	50				55						60				
Leu	Arg	Arg	Cys	Gly	Ile	Thr	Ser	Ser	Arg	Asn	Val	Phe	Pro	Phe	Gly
65					70					75				80	
Ser	Ala	Ser	Asn	Leu	Glu	Cys	Lys	Lys	Trp	His	Val	Trp	Leu	Glu	Tyr
			85						90					95	
Val	Pro	Arg	Lys	Ala	Leu	Thr	Val	Gly	Glu	Arg	Ser	Ile	Val	Ala	Leu
			100					105						110	
Arg	Ala	Leu	Gln	Pro	Thr	Gly	Tyr	Val	Leu	Ser	Met	Arg	Ala		
			115				120						125		

<210> 7335
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 7335

Ala	Ser	Thr	Ile	Arg	His	Asn	Arg	Ala	Arg	Gly	Met	His	Lys	Ile	Glu
1				5					10					15	
Leu	Met	Thr	Arg	Leu	Val	Gly	Glu	Leu	Thr	Arg	Ser	Gly	Met	Ser	Asp
			20					25					30		
Ser	Trp	Ile	Arg	Arg	Asn	Leu	Gly	Met	Asp	Lys	Asp	Glu	Leu	Leu	Arg
		35					40					45			
Leu	Lys	Gln	Ile	Ser	Gly	Leu	Ala	Glu	Leu	Phe	Ala	Asp	Lys	Glu	Phe
	50					55					60				

Arg Met Ala Val Glu
65

<210> 7336

<211> 69

<212> PRT

<213> B.fragilis

<400> 7336

Ile Asp Asn Met Lys Val Lys Lys Val Leu Val Cys Thr Phe Leu Leu
1 5 10 15
Ala Thr Cys Leu Met Asn Ala Gln Ala Gln Arg Arg Asn Glu Ile Leu
20 25 30
Val Pro Asp Leu Asp Gly Tyr Thr Thr Leu Lys Cys Asp Phe His Met
35 40 45
His Thr Val Phe Ser Asp Gly Leu Val Trp Pro Thr Val Arg Val Asp
50 55 60
Asp Ala Tyr Arg Glu
65

<210> 7337

<211> 439

<212> PRT

<213> B.fragilis

<400> 7337

Lys Leu Ile Val Met Pro Thr Ile Leu Glu Arg Leu Thr Ala Leu Phe
1 5 10 15
Ser Arg Asp Met Gln Ala Val Leu Arg Asn Pro Arg Ala Ile Ser Met
20 25 30
Ile Glu Asn Pro Ser Ile Arg Val Gln Met Ala Ala Ile Arg Arg Asp
35 40 45
Lys Ser Val Ile Cys Phe Ile Asp Lys Pro Val Glu Lys Val Gln Leu
50 55 60
Ala Ala Val Arg Asn Ala Pro His Asn Ile His Phe Ile Ala Ser Pro
65 70 75 80
Gly Glu Lys Val Gln Leu Ser Val Ile Arg His Lys Pro Gly Tyr Ile
85 90 95
Gly Phe Ile Ser Asn Pro Thr Glu Lys Ala Gln Leu Thr Ala Val Glu
100 105 110
Arg Arg Pro Glu Cys Ile Ser Leu Ile Asn Lys Pro Ala Val Lys Val
115 120 125
Gln Leu Met Ala Val Leu Lys Asp Pro Ala His Ile Ala Ser Ile Lys
130 135 140
Glu Pro Ala Glu Lys Val Gln Leu Ala Thr Val Gln Lys Asn Pro Glu
145 150 155 160
Tyr Ile Arg His Ile Glu Ser Pro Thr Val Lys Val Gln His Met Ala
165 170 175
Ile Gln Gly Asn Ala Asp Thr Leu Arg His Ile Lys Ser Pro Ala Asp
180 185 190
Thr Val Gln Leu Ala Ala Val Gln Ala Lys Gly Glu Thr Ile Lys Tyr
195 200 205
Val Ser Glu Pro Ser Glu Ala Val Gln Leu Ala Val Arg Asn Asn
210 215 220
Pro Met Asn Ile Arg Tyr Ile Glu Asn Pro Thr Glu Lys Val Gln Leu
225 230 235 240
Ser Val Leu His Ala Asp Arg Glu Ala Ala Ala Leu Ile Ser Ser Pro
245 250 255
Ser Glu Ala Val Arg Lys Gln Ala Glu Glu Met Tyr Gly Leu Lys Leu

<400> 7339

<210> 7340

<211> 520

<212> PRT

<213> B.fragilis

<400> 7340

Ser	Pro	Leu	Thr	Val	His	Arg	Ser	Thr	Thr	Val	His	Arg	Arg	Ser	Phe
1				5					10					15	
Lys	Thr	Leu	Pro	Arg	Phe	Phe	Ser	Leu	Phe	Tyr	Leu	Leu	Met	Phe	Val
			20					25					30		
Gln	Arg	Val	Asn	Tyr	Gly	Glu	Ile	Ser	Val	Ile	Pro	Phe	Ile	Phe	Pro
		35					40					45			
Leu	Tyr	Ser	His	Tyr	Tyr	Leu	Leu	Leu	Leu	Arg	Ala	Asn	Tyr	Glu	Thr
	50					55				60					
Ile	Ile	Leu	Tyr	Asn	His	Met	Ala	Asn	Val	Ile	Lys	Leu	Arg	Lys	Gly
65				70					75					80	
Leu	Asp	Ile	Asn	Leu	Lys	Gly	Lys	Ala	Ala	Glu	Glu	Leu	Ser	Thr	Val
			85					90					95		
Lys	Glu	Pro	Gly	Phe	Tyr	Ala	Leu	Val	Pro	Asp	Asp	Phe	Pro	Gly	Val
			100				105					110			
Thr	Pro	Lys	Val	Val	Val	Lys	Glu	Gln	Glu	Tyr	Val	Met	Ala	Gly	Gly
		115				120				125					
Pro	Leu	Phe	Ile	Asp	Lys	Asn	His	Pro	Glu	Val	Lys	Phe	Val	Ser	Pro
	130					135				140					
Val	Ser	Gly	Val	Val	Thr	Ser	Val	Glu	Arg	Gly	Ala	Arg	Arg	Lys	Val
145				150					155					160	
Leu	Asn	Ile	Val	Val	Glu	Ala	Ala	Ala	Glu	Gln	Asp	Tyr	Glu	Glu	Phe
			165					170					175		
Gly	Lys	Lys	Asp	Val	Ser	Lys	Leu	Asp	Gly	Glu	Ala	Val	Lys	Ala	Ala
		180				185				190					
Leu	Leu	Glu	Ala	Gly	Met	Phe	Ala	Phe	Met	Lys	Gln	Arg	Pro	Tyr	Asp
		195				200				205					
Val	Ile	Ala	Asp	Pro	Thr	Val	Ala	Pro	Arg	Ala	Ile	Phe	Ile	Ser	Ala
	210					215				220					
Phe	Asp	Ser	Asn	Pro	Leu	Ala	Pro	Asp	Phe	Glu	Tyr	Val	Leu	Lys	Gly
225				230					235					240	
Glu	Glu	Ala	Asn	Phe	Gln	Thr	Gly	Leu	Asp	Ala	Leu	Ala	Lys	Ile	Ala
			245					250					255		

Lys Thr Tyr Leu Gly Ile Ser Ile Lys Gln Lys Ser Thr Ala Leu Thr
 260 265 270
 Gln Ala Lys Asn Val Thr Val Thr Val Phe Asp Gly Pro Asn Pro Ala
 275 280 285
 Gly Asn Val Gly Val Gln Ile Asn His Val Ala Pro Val Val Lys Gly
 290 295 300
 Glu Thr Val Trp Thr Ile Gly Ala Glu Ala Val Ile Phe Ile Gly Arg
 305 310 315 320
 Leu Phe Asn Thr Gly Arg Val Asp Leu Thr Arg Thr Val Ala Val Thr
 325 330 335
 Gly Ser Glu Val Val Lys Pro Ala Tyr Cys Arg Leu Lys Val Gly Ala
 340 345 350
 Leu Leu Thr His Val Phe Ala Gly Asn Val Thr Lys Asp Lys Glu Leu
 355 360 365
 Arg Tyr Ile Ser Gly Asn Val Leu Thr Gly Lys Gln Val Lys Pro Asn
 370 375 380
 Gly Phe Leu Gly Ala Phe Asp Ser Gln Leu Thr Val Ile Pro Glu Gly
 385 390 395 400
 Asp Asp Ile His Glu Met Leu Gly Trp Ile Met Pro Arg Phe Asn Gln
 405 410 415
 Phe Ser Val Asn Arg Ser Tyr Phe Ser Trp Leu Met Gly Asn Lys Lys
 420 425 430
 Glu Tyr Val Leu Asp Ala Arg Ile Lys Gly Gly Glu Arg His Met Ile
 435 440 445
 Met Ser Gly Glu Tyr Asp Lys Val Phe Pro Met Asp Ile Leu Pro Glu
 450 455 460
 Phe Leu Ile Lys Ala Ile Ile Ala Gly Asp Ile Asp Arg Met Glu Ala
 465 470 475 480
 Leu Gly Ile Tyr Glu Val Ala Pro Glu Asp Phe Ala Leu Cys Glu Phe
 485 490 495
 Val Asp Ser Ser Lys Leu Glu Leu Gln Arg Ile Val Arg Ala Gly Leu
 500 505 510
 Asp Met Leu Arg Ala Glu Met Met
 515 520

<210> 7341

<211> 361

<212> PRT

<213> B.fragilis

<400> 7341

Leu Met Lys Ala Leu Arg Asn Tyr Leu Asp Lys Ile Lys Pro Asn Phe
 1 5 10 15
 Glu Glu Gly Gly Lys Leu His Ala Phe Arg Ser Val Phe Asp Gly Phe
 20 25 30
 Glu Thr Phe Leu Phe Val Pro Asn Thr Thr Ser Lys Ser Gly Ala His
 35 40 45
 Ile His Asp Ser Ile Asp Ser Lys Arg Ile Met Ser Ile Val Val Ile
 50 55 60
 Ser Leu Ile Pro Ala Leu Leu Phe Gly Met Tyr Asn Val Gly Tyr Gln
 65 70 75 80
 His Phe Thr His Thr Gly Ala Gln Gly Gly Phe Ile Glu Met Phe Ile
 85 90 95
 Tyr Gly Phe Leu Ala Ile Leu Pro Lys Ile Ile Val Ser Tyr Val Val
 100 105 110
 Gly Leu Gly Ile Glu Phe Val Val Ala Gln Trp Lys Lys Glu Glu Ile
 115 120 125
 Gln Glu Gly Phe Leu Val Ser Gly Ile Leu Ile Pro Met Ile Val Pro
 130 135 140

Val Asp Cys Pro Leu Trp Ile Leu Ala Ile Ala Thr Ala Phe Ala Val
 145 150 155 160
 Ile Phe Ala Lys Glu Val Phe Gly Gly Thr Gly Met Asn Val Phe Asn
 165 170 175
 Val Ala Leu Val Thr Arg Ala Phe Leu Phe Phe Ala Tyr Pro Thr Lys
 180 185 190
 Met Ser Gly Asp Ala Val Trp Val Ala Gln Asp Ser Ile Phe Gly Leu
 195 200 205
 Gly Asn Thr Val Asp Gly Leu Thr Ala Ala Thr Ser Leu Gly Val Ala
 210 215 220
 Ser Thr Ala Thr Asp Pro Asn Gly Phe Pro Ala Phe Ser Trp Asp Met
 225 230 235 240
 Val Thr Gly Leu Ile Pro Gly Ser Ile Gly Glu Thr Ser Val Ile Ala
 245 250 255
 Ile Leu Ile Gly Ala Val Ile Leu Leu Trp Thr Gly Ile Ala Ser Trp
 260 265 270
 Arg Thr Met Leu Ser Val Phe Val Gly Gly Ala Phe Met Gly Trp Ile
 275 280 285
 Phe Asn Thr Val Gly Pro Asp Thr Ala Met Ala His Met Pro Trp Tyr
 290 295 300
 Glu His Leu Val Leu Gly Phe Cys Phe Gly Ala Pro Phe Met Ala
 305 310 315 320
 Thr Asp Pro Val Thr Ser Ala Arg Thr Glu Thr Gly Lys Tyr Ile Phe
 325 330 335
 Gly Phe Leu Ile Gly Ala Met Ala Ile Ile Val Phe Thr Arg Val Ser
 340 345 350
 Ser Ala Arg Ser Ile Trp Ser Val His
 355 360

<210> 7342

<211> 432

<212> PRT

<213> B.fragilis

<400> 7342

Ile Met Cys Tyr Glu Leu His His Phe Ser Thr Lys His Ile Glu Ser
 1 5 10 15
 Gly Thr Asn Asp Ala Leu Gln Phe Gln Phe Arg Arg Val Asp Lys Phe
 20 25 30
 Ala Gln Ser Lys Val Phe Gly Arg His Phe Val Asp Thr Gln Ser Phe
 35 40 45
 His Ala Val Asp Val Pro Gly Asn Asp Cys Phe Asp Gln Glu Phe Arg
 50 55 60
 Gln Asn Val His Arg Glu Tyr Phe Val Val Phe Ala Gly His Asn His
 65 70 75 80
 Val Ala Phe Ala Ser Leu Asp Thr Gly Ile Glu His Ile Leu Leu Leu
 85 90 95
 Ile Pro His Gln Pro Ala Glu Ile Arg Ala Val Asp Ala Glu Leu Ile
 100 105 110
 Glu Thr Gly His Asp Pro Ser Gln His Phe Val Asp Val Val Thr Phe
 115 120 125
 Gly Asn His Cys Glu Leu Ala Val Glu Ser Ala Gln Glu Ser Val Arg
 130 135 140
 Leu His Leu Phe Ala Cys Gln His Ile Ala Ala Asp Val Thr Gln Leu
 145 150 155 160
 Phe Val Leu Arg His Val Ser Gly Lys His Met Gly Gln Gln Cys Ala
 165 170 175
 Asp Phe Gln Ser Ala Ile Ser Trp Phe His His Phe Arg Ser Cys Asn
 180 185 190

Gly Tyr Gly Thr Gly Gln Val His Pro Ser Gly Ile Glu Gln Thr Ser
 195 200 205
 Asp Glu Asp Tyr Gly Phe Arg Ala Asp Ser Pro His Arg Leu Thr Phe
 210 215 220
 His Tyr Gly Ser Tyr Val Ile Asp Leu Tyr Pro Tyr Ile Ser Gly Arg
 225 230 235 240
 Val Arg Ser Val Lys Tyr Gly Tyr Cys Asp Ile Phe Ser Leu Cys Gln
 245 250 255
 Gly Cys Arg Phe Leu Phe Asp Ala Asp Thr Gln Ile Arg Phe Gly Tyr
 260 265 270
 Phe Ser Gln Gly Ile Gln Ser Cys Leu Glu Ile Ser Phe Phe Pro Phe
 275 280 285
 Gln Asn Val Phe Glu Ile Gly Cys Gln Arg Val Ala Val Glu Ser Arg
 290 295 300
 Asp Glu Asp Ser Pro Arg Ser Asp Cys Arg Ile Gly Asn His Val Ile
 305 310 315 320
 Arg Thr Leu Phe His Lys Cys Lys His Thr Ser Phe Gln Glu Cys Ser
 325 330 335
 Phe His Ser Leu Ala Ile Glu Phe Gly Tyr Val Leu Leu Ala Glu Phe
 340 345 350
 Phe Val Ile Leu Leu Cys Gly Ser Leu His His Asp Val Gln His Leu
 355 360 365
 Thr Ala Cys Thr Ala Leu His Ala Cys Tyr Asn Ala Ala Asn Gly Arg
 370 375 380
 Asn Lys Phe His Phe Arg Met Ile Leu Val Asp Lys Gln Gly Ser Pro
 385 390 395 400
 Gly His His Ile Phe Leu Leu Phe His His His Leu Arg Ser His Ser
 405 410 415
 Trp Glu Ile Ile Gly Tyr Glu Cys Val Glu Ser Arg Phe Phe His Arg
 420 425 430

<210> 7343

<211> 355

<212> PRT

<213> B.fragilis

<400> 7343

Ile Leu Arg Cys Thr Leu Ser Arg His Tyr Asn Phe Phe Trp Asp Gln
 1 5 10 15
 Leu Glu Lys Ala Asn Leu Phe Leu Gln Gly Val Ile Asp Thr Arg Glu
 20 25 30
 Lys Pro Met Asp Asp Lys Met Val Glu Trp Leu Phe Arg Asn Pro Leu
 35 40 45
 Ser Asp Gly Gly Thr Phe Thr Gly Val Ala Asp Ile Val Ser Lys Tyr
 50 55 60
 Gly Leu Val Pro Lys Glu Val Met Pro Glu Thr Asn Ser Ser Glu Asn
 65 70 75 80
 Thr Ser Arg Met Ala Gly Leu Ile Ala Glu Lys Leu Arg Glu Tyr Gly
 85 90 95
 Leu Gln Leu Arg Asp Arg Ala Ala Lys Gly Ala Lys Gln Pro Ala Leu
 100 105 110
 Glu Lys Asp Lys Thr Glu Met Leu Gly Thr Val Tyr Arg Met Leu Val
 115 120 125
 Leu Asn Leu Gly Val Pro Pro Thr Glu Phe Thr Trp Thr Arg Lys Asp
 130 135 140
 Glu Lys Gly Asn Pro Val Glu Thr Ala Gln Tyr Thr Pro Met Ser Phe
 145 150 155 160
 Leu Glu Lys Tyr Gly Asp Lys Asn Leu Leu Asp Asn Tyr Val Met Leu
 165 170 175

Met Asn Asp Pro Ser Arg Glu Tyr Tyr Lys Cys Tyr Glu Ile Asp Phe
 180 185 190
 Asp Arg His Arg Tyr Asp Gly Arg Asn Trp Thr Tyr Val Asn Leu Pro
 195 200 205
 Ala Asp Glu Ile Lys Glu Met Ala Ile Ala Ser Leu Lys Asp Ser Thr
 210 215 220
 Met Met Tyr Phe Ser Cys Asp Val Gly Lys Phe Leu Asn Ser Glu Arg
 225 230 235 240
 Gly Leu Leu Asp Val Asn Asn Tyr Asp Tyr Ala Ser Leu Met Gly Thr
 245 250 255
 Thr Phe Gly Met Asp Lys Lys Gln Arg Val Gln Thr Phe Ala Ser Gly
 260 265 270
 Ser Ser His Ala Met Thr Leu Met Ala Val Asp Val Lys Asp Asn Lys
 275 280 285
 Pro Val Lys Trp Met Val Glu Asn Ser Trp Gly Ala Thr Asn Gly Tyr
 290 295 300
 Gln Gly His Leu Ile Met Thr Asp Glu Trp Phe Asp Glu Tyr Met Phe
 305 310 315 320
 Arg Leu Val Val Glu Lys Lys Phe Ala Thr Pro Lys Val Leu Glu Ile
 325 330 335
 Leu Lys Gln Lys Pro Ile Arg Leu Pro Ala Trp Asp Pro Met Phe Ala
 340 345 350
 Pro Glu Gln
 355

<210> 7344

<211> 812

<212> PRT

<213> B.fragilis

<400> 7344

Ile Tyr His Thr Arg Ser Phe Phe Tyr Ile Cys Arg Ile Pro Ser Pro
 1 5 10 15
 Ile Tyr Val Lys Ser Ala Gly Ser Phe His Leu Phe Thr Ser Phe Ser
 20 25 30
 Thr Phe Ile Cys Phe Ile Gly Tyr Phe Cys Arg Arg Tyr Asn Tyr Arg
 35 40 45
 Val Ser Glu Arg Glu Leu Ala Glu Gly Val Leu Asn Gln Asn Ser Tyr
 50 55 60
 Thr Met Val Lys Phe Asn Ala Met Lys Thr Lys Pro Leu Arg Leu Leu
 65 70 75 80
 Arg Gln Lys Arg Ala Ser Trp Leu Lys Ser Val Phe Val Leu Thr Cys
 85 90 95
 Leu Leu Leu Ser Thr Ser Val Ala Met Ala Gln Thr Lys Thr Val Thr
 100 105 110
 Gly Thr Val Thr Asp Ser Phe Asn Glu Pro Leu Ile Gly Ala Ser Ile
 115 120 125
 Leu Val Lys Gly Thr Ser Thr Gly Ala Val Thr Asp Met Asp Gly Lys
 130 135 140
 Tyr Ser Ile Ser Val Thr Pro Asn Asp Val Leu Val Phe Ser Tyr Val
 145 150 155 160
 Gly Tyr Glu Lys Gln Glu Ile Lys Val Gly Gln Gln Thr Val Ile Asn
 165 170 175
 Val Thr Leu Lys Asp Asp Ser Gln Met Leu Ala Glu Thr Val Ile Ile
 180 185 190
 Gly Tyr Gly Ser Ala Lys Lys Arg Asp Leu Thr Gly Ser Ile Thr Asn
 195 200 205
 Ile Lys Gly Ser Glu Ile Ala Asn Lys Pro Ala Thr Asn Pro Leu Ser
 210 215 220

Ser Leu Gln Gly Lys Ile Ala Gly Val Gln Ile Val Asn Ser Gly Gln
 225 230 235 240
 Ala Gly Ala Asp Pro Glu Ile Arg Ile Arg Gly Thr Asn Ser Ile Asn
 245 250 255
 Gly Tyr Lys Pro Leu Tyr Val Val Asp Gly Leu Phe Asn Asp Asn Ile
 260 265 270
 Asn Phe Leu Asn Pro Glu Asp Ile Glu Ser Met Glu Val Leu Lys Asp
 275 280 285
 Pro Ser Ser Leu Ala Ile Phe Gly Val Arg Gly Ala Asn Gly Val Ile
 290 295 300
 Ile Val Thr Thr Lys Arg Ala Lys Glu Gly Gln Thr Leu Val Asn Ile
 305 310 315 320
 Asn Thr Ser Phe Gly Trp Lys Ser Val Val Asp Lys Ile Lys Met Val
 325 330 335
 Asn Ala Pro Gln Phe Lys Glu Leu Tyr Asn Glu Gln Met Ala Asn Gln
 340 345 350
 Gly Asn Ala Leu Phe Asp Phe Ser Asn Trp Asn Ala Asn Thr Asp Trp
 355 360 365
 Gln Asp Glu Ile Phe Gln Thr Gly Phe Ile Thr Asn Asn Val Ser
 370 375 380
 Ile Thr Gly Ala Ser Glu Lys His Ser Phe Tyr Leu Gly Val Gly Tyr
 385 390 395 400
 Ser His Glu Gln Gly Asn Ile Lys His Glu Lys Tyr Ser Lys Val Thr
 405 410 415
 Ile Asn Ala Ser Asn Asp Tyr Lys Ile Thr Lys Asp Ile Lys Val Gly
 420 425 430
 Phe Gln Phe Asn Gly Ala Arg Met Leu Pro Ala Asp Ser Lys Thr Val
 435 440 445
 Leu Asn Ala Ile Arg Thr Thr Pro Val Ala Pro Val Tyr Asn Glu Glu
 450 455 460
 Tyr Gly Leu Tyr Thr Ser Leu Pro Glu Phe Gln Lys Ala Gln Met Asn
 465 470 475 480
 Asn Pro Met Val Asp Val Asn Leu Arg Ala Asn Thr Thr Arg Ala Val
 485 490 495
 Asn Tyr Arg Ala Ser Gly Ser Ile Tyr Gly Glu Val Asp Phe Leu Lys
 500 505 510
 His Phe Thr Phe Lys Ala Met Phe Ser Met Asp Tyr Ala Thr Asn Asp
 515 520 525
 Ser Arg Thr Tyr Lys Pro Ile Lys Val Tyr Asp Ala Thr Phe Ala
 530 535 540
 Gly Asn Val Ala Thr Leu Gly Asn Gly Lys Thr Glu Val Ser Gln Asn
 545 550 555 560
 Lys Gln Asn Glu Thr Lys Val Gln Ser Asp Tyr Leu Leu Thr Tyr Gln
 565 570 575
 Asn Ser Phe Ala Asp Gly Thr His Asn Leu Thr Ala Thr Ala Gly Phe
 580 585 590
 Thr Thr Tyr Tyr Asn Ser Leu Ser Gly Leu Asp Ala Ser Arg Gly Gln
 595 600 605
 Gly Ile Gly Leu Val Ile Pro Asn Asn Pro Asp Lys Trp Phe Val Ser
 610 615 620
 Ile Gly Asp Leu Ala Thr Ala Thr Asn Gly Ser Thr Gln Trp Glu Arg
 625 630 635 640
 Thr Thr Val Ser Met Leu Ala Arg Ile Ile Tyr Asn Tyr Lys Gly Lys
 645 650 655
 Tyr Leu Phe Asn Gly Ser Phe Arg Arg Asp Gly Ser Ser Ala Phe Ala
 660 665 670
 Tyr Thr Gly Asn Gln Trp Gln Asn Phe Tyr Ser Ile Gly Ala Gly Trp
 675 680 685
 Leu Met Thr Glu Glu Glu Phe Met Lys Asp Ile Thr Trp Leu Asp Met

690		695		700
Leu Lys Leu Lys Gly Ser Trp Gly Thr Leu Gly Asn Gln Asn Met Asp				
705		710		715
Lys Ala Tyr Pro Ala Glu Pro Leu Leu Glu Asn Ala Phe Ala Ala Val				720
		725		730
Phe Gly Lys Pro Ala Ile Ile Tyr Pro Gly Tyr Gln Leu Ala Tyr Leu				735
		740		745
Pro Asn Pro Arg Leu Arg Trp Glu Lys Val Glu Ala Trp Glu Thr Gly				750
		755		760
Phe Glu Thr Asn Met Phe Arg Asn Arg Phe His Phe Glu Gly Val Tyr				765
		770		775
Tyr Lys Lys Asn Thr Lys Asp Leu Leu Ala Thr Val Pro Gly Leu Ser				780
785		790		795
Gly Thr Arg Thr Gly His Arg Gln Ser Trp Arg Asp				800
		805		810

<210> 7345
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 7345

His Ile Phe Leu Ser Leu Phe Arg His Arg Met Ser Asn Ser Ser Ala	
1	5
Gly Gln Gln Gly Arg Ser Phe Phe Pro Ala Arg Leu Tyr Val Cys Ala	
	20
Met Gly Lys Pro Ile Ile Lys Ile Leu Tyr Phe His Arg Arg Arg Thr	
	35
Asn Ala Ser Gly Trp Tyr Arg Leu Glu Tyr Ile Phe Gln Arg Gly Lys	
	50
Lys Thr Leu Arg Tyr Val Leu Ser Thr Arg Asp Pro Glu Tyr Leu Val	
65	70
Cys Phe Cys Ser Pro Cys Met Val Glu Arg Ser Glu Met Ile Val Phe	
	85
Val Ala Glu Leu Leu Glu Ile His Lys Val Lys Tyr Ser Tyr Leu	
	100
Lys Val Thr Pro Ser Tyr Ala Tyr Ala Thr Pro Lys Tyr Lys Ser Arg	
	115
Ile Asn Gln Met Cys Lys Lys Ser Arg Tyr His Lys Thr Pro Val Ile	
130	135
Ile Asp Gly Leu	
145	

<210> 7346
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 7346

Val Val Leu Tyr Met Glu Gln Ser Pro Lys Val Gln Asn Lys Ile Thr	
1	5
Lys Ile Leu Glu Ile Leu Glu Tyr Ile Glu Cys Ile Pro Thr Lys Tyr	
	20
Leu Lys His Ile Glu Gly Thr Asp Gly Leu Tyr Glu Met Arg Ile Thr	
	35
Leu Gly Ser Asp Ile Phe Arg Val Phe Cys Phe Phe Asp Lys Gly Arg	
	50
Leu Val Val Leu Leu Ser Gly Phe Gln Lys Lys Thr Gln Lys Thr Pro	
65	70
	75
	80

Lys Lys Glu Ile Asp Lys Ala Val Arg Leu Met Ala Gln Tyr Tyr Asp
 85 90 95
 Asp Lys Lys Arg Arg
 100

<210> 7347
 <211> 316
 <212> PRT
 <213> B.fragilis

<400> 7347
 Phe His Thr His Ile Asn Phe Val Met Gly Gln Gln Ser Arg Glu Ser
 1 5 10 15
 Leu Asp Tyr Glu Lys Ile Ile Leu Lys Asn Met Ala Asn Thr Asn Met
 20 25 30
 Glu His Gly Glu Ile Ile Leu Tyr Gln Pro Asp Asn Thr Ile Lys Leu
 35 40 45
 Glu Val Arg Ile Glu Asn Glu Thr Val Trp Leu Thr Gln Ala Gln Ile
 50 55 60
 Val Asn Leu Phe Gln Ser Ser Lys Ala Asn Ile Ser Glu His Ile Arg
 65 70 75 80
 Asn Ile Tyr Asp Ser Asp Glu Leu Ser Ala Glu Ser Thr Val Arg Lys
 85 90 95
 Phe Arg Thr Val Arg Met Glu Gly Asn Arg Lys Val Thr Arg Ile Leu
 100 105 110
 Glu Tyr Tyr Asn Leu Asp Met Ile Ile Ser Val Gly Tyr Arg Val Asn
 115 120 125
 Ser Lys Arg Gly Val Gln Phe Arg Gln Trp Ser Thr Gly Val Leu Lys
 130 135 140
 Glu Tyr Leu Leu Lys Gly Tyr Ala Ile Asn Gln Arg Val Glu Gln Leu
 145 150 155 160
 Glu Asn Lys Ala Asn Thr His Asp Arg Gln Leu Glu Glu Leu Thr Asn
 165 170 175
 Lys Val Asp Phe Phe Val Arg Thr Ser Leu Pro Pro Ile Glu Gly Val
 180 185 190
 Phe Phe Asn Gly Gln Ile Phe Asp Ala Tyr Val Phe Ser Ala Gln Leu
 195 200 205
 Ile Lys Ser Ala Lys Ser Ser Leu Val Leu Ile Asp Asn Phe Val Asp
 210 215 220
 Glu Ser Val Leu Leu Leu Leu Ser Lys Arg Leu Pro Gly Val Thr Ser
 225 230 235 240
 Ile Ile Tyr Thr Lys Gln Val Thr Pro Gln Leu Glu Leu Asp Leu Thr
 245 250 255
 Lys His Asn Ser Gln Tyr Pro Pro Ile Asp Ile Arg Thr Tyr Gln His
 260 265 270
 Ala His Asp Arg Phe Leu Ile Ile Asp Asn Leu Glu Val Tyr His Ile
 275 280 285
 Gly Ala Ser Leu Lys Asp Leu Gly Lys Lys Leu Phe Ala Phe Ser Lys
 290 295 300
 Met Glu Met Pro Ala Lys Ile Ile Thr Asp Leu Leu
 305 310 315

<210> 7348
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 7348
 His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys

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1           5           10           15
Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Leu Gln Lys
      20           25           30
Thr Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly
      35           40           45
Ser Gly Gly Val Asn Ser Leu Pro Lys Pro Glu Leu Ser Tyr Ser Ala
      50           55           60
Gly Val Tyr Phe Phe Cys Leu Tyr Phe Ser Asp Ser Leu Ser Val Thr
      65           70           75           80
Asp Arg Asn Pro Leu Lys Leu Arg Phe
      85

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<210> 7349
 <211> 60
 <212> PRT
 <213> B.fragilis

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<400> 7349
Ala Asn His Lys His Gln Tyr Ile Lys Glu Leu Ser Leu Gln Glu Arg
1           5           10           15
Ala Gly Ile Lys Arg Arg Ile Val Glu Leu Phe His Ile Tyr Glu Glu
      20           25           30
Gln Phe Tyr Asn Pro Leu Tyr Lys Thr Ser Ile Ser Gln Asn Arg Asn
      35           40           45
Gln Ala Leu Arg Gln Ile Cys Cys Lys Lys Thr Lys
      50           55           60

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<210> 7350
 <211> 121
 <212> PRT
 <213> B.fragilis

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<400> 7350
Val Leu Asp Asn Ala Tyr Thr Ser Ile Phe Gln Arg Gln Leu Ile Pro
1           5           10           15
Glu Glu Val Thr Thr Leu Ala Asn Thr Ser Phe Ala Ala Thr Ser Gly
      20           25           30
Lys Gly Gly Thr Ile Ser Gly Val Pro Ser Ser Ala Gln Tyr Leu Tyr
      35           40           45
Phe Met Ala Asn Ile Lys Thr Asp Val Gly Gln Val Phe Pro Ala Val
      50           55           60
Glu Gly Thr Thr Ser Ala Asp Ala Arg Leu Arg Leu Asn Arg Leu Gln
      65           70           75           80
Gly Thr Ala Pro Ser Asp Trp Thr Ala Asn Ala Phe Val Asp Tyr Cys
      85           90           95
Thr Pro Leu Ala Ser Ala Leu Ser Phe Tyr Pro Asp Val Thr Ile Ser
      100          105          110
Thr Pro Arg Tyr Pro Arg Met Ser Glu
      115          120

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<210> 7351
 <211> 498
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (489), (490), (491), (492), (495)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7351

Pro Met Arg Asn Leu Arg Ala Ile Leu Ile Val Leu Leu Cys Leu Cys
 1 5 10 15
 Gly Ile Tyr Val Gln Ala Gln Gln Leu Glu Ile Lys Gly Leu Val Thr
 20 25 30
 Ser Ser Glu Asp Lys Gln Pro Leu Ile Gly Ala Thr Val Ala Val Lys
 35 40 45
 Gly Val Pro Gly Arg Gly Val Val Thr Asp Met Asp Gly Arg Tyr Thr
 50 55 60
 Leu Lys Ile Glu Pro Ser Asp Lys Ile Leu Val Ile Ser Tyr Ile Gly
 65 70 75 80
 Met Lys Ser Ser Glu Val Lys Val Pro Lys Asn Gly Val Leu Asn Val
 85 90 95
 Val Leu Gln Pro Glu Ser Leu Asn Leu Asp Glu Val Val Val Thr Gly
 100 105 110
 Tyr Gly Asn Phe Ser Lys Ser Ser Phe Thr Gly Ser Ala Asn Thr Leu
 115 120 125
 Arg Ala Asp Met Leu Lys Asn Val Pro Val Leu Ser Val Glu Gln Lys
 130 135 140
 Leu Gln Gly Met Thr Thr Gly Val Asn Ile Thr Ser Gly Ser Gly Gln
 145 150 155 160
 Pro Gly Ala Asn Gln Ser Ile Arg Ile Arg Gly Met Gly Ser Phe Asn
 165 170 175
 Ala Ser Asn Glu Pro Leu Phe Val Ile Asp Gly Ile Pro Val Thr Ser
 180 185 190
 Gly Ser Met Gly Ala Gly Thr Gly Ala Asp Ala Ala Tyr Met Asn Asn
 195 200 205
 Ala Lys Thr Asn Val Met Ser Thr Leu Asn Pro Ala Asp Ile Glu Asn
 210 215 220
 Ile Thr Val Ile Lys Asp Ala Ala Ala Ala Ser Leu Tyr Gly Ser Arg
 225 230 235 240
 Ala Ala Asn Gly Val Ile Leu Ile Thr Thr Lys Lys Gly Ala Val Gly
 245 250 255
 Arg Thr Lys Val Thr Leu Ser Ala Ser Gly Gly Phe Ser Asn Ala Ala
 260 265 270
 Val Asn Phe Arg Pro Thr Leu Asn Gly Glu Gln Arg Arg Glu Met Ile
 275 280 285
 Tyr Glu Gly Leu Tyr Asn Ser Ala Val Asp Lys Gly Leu Gln Ser Pro
 290 295 300
 Glu Ala Tyr Ala Asn Ala Asn Ile Asp Thr Tyr Ala Gly Ile Pro Glu
 305 310 315 320
 Leu Gly Tyr Thr Asp Trp Arg Lys Glu Leu Ile Arg Thr Ala His Asn
 325 330 335
 Gln Asn Tyr Glu Val Thr Ala Ser Gly Gly Asn Glu Arg Thr Thr Phe
 340 345 350
 Tyr Ala Ser Leu Gly Phe Asn Arg Gln Glu Gly Leu Val Glu Asn Ser
 355 360 365
 Asn Leu Asp Arg Tyr Ser Ala Arg Leu Asn Met Thr His Lys Ile Gly
 370 375 380
 Ser Arg Val Glu Val Gly Gly Asn Met Met Phe Thr Gln Ile Ser Gln
 385 390 395 400
 Glu Met Asn Glu Glu Arg Gly Ser Asn Ile Asn Pro Phe Leu Cys Val
 405 410 415
 Ala Val Ser Ala Thr Pro Ser Met Pro Val Arg Asp Ala Ser Gly Asn
 420 425 430
 Tyr Val Gly Ser Tyr Ala Gly Thr Asn Val Asn Pro Leu Arg Asp Ile
 435 440 445
 Arg Thr Asp Tyr Asn Arg Ser Arg Met Thr Arg Met Phe Ser Thr Gly

450
 Tyr Ala Ser Val Asp Ile Ile Lys Gly Leu Lys Leu Lys Glu Val Phe
 465 470 475 480
 Thr Gly Ala Ala Lys Gly Ala His Xaa Xaa Xaa Xaa Ser Lys Xaa Phe
 485 490 495
 Ser Arg

<210> 7352
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 7352
 Lys His Gly Lys Pro Val Leu Lys Pro Ile Cys Ser Val Thr Val Ser
 1 5 10 15
 Ile Ser Lys Glu Tyr Thr Ile Arg Arg Ile Pro Arg Thr Cys Ser Pro
 20 25 30
 Pro Tyr Arg Val Cys Arg Glu Pro Val Pro Gly Ile Gly Asn Leu Gly
 35 40 45
 Glu Ile Glu Asn Lys Gly Val Glu Leu Met Ala Ser Trp Arg Asp Gln
 50 55 60
 Ile Gly Asp Trp Gly Tyr Ser Val Ser Ala Asn Leu Thr Thr Ile Ser
 65 70 75 80
 Asn Lys Val Lys Ser Leu Val Gln Asp Gly Tyr Ser Ile Ile Ala Gly
 85 90 95
 Asp Lys Ser Gln Ser Tyr Thr Met Ala Gly Tyr Pro Ile Gly Tyr Phe
 100 105 110
 Tyr Gly Tyr Lys Val Ala Gly Val Tyr Gln Asn Gln Ala Glu Ile Asp
 115 120 125
 Ala Ser Pro Val Asn Thr Leu Ala Thr Val Thr Pro Gly Asp Leu Lys
 130 135 140
 Phe Ala Asp Val Asn Gly Asp Gly Lys Ile Thr Pro Asp Asp Arg Thr
 145 150 155 160
 Lys Ile Gly Asp Pro Thr Pro Asp Val Thr Tyr Gly Ile Ser Leu Gly
 165 170 175
 Leu Ser Tyr Lys Asn Trp Glu Leu Ser Met Glu Met Met Gly Gln Gly
 180 185 190
 Gly Asn Gln Ile Tyr Arg Thr Trp Asp Asn Tyr Asn Trp Ala Gln Phe
 195 200 205
 Asn Tyr Met Glu Gln Arg Leu Asp Arg Trp His Gly Glu Gly Thr Ser
 210 215 220
 Asn Thr Gln Pro Leu Leu Asn Thr Lys His Ala Ile Asn Ser Glu Asn
 225 230 235 240
 Ser Glu Tyr Phe Ile Glu Asp Gly Ser Phe Phe Arg Ile Arg Asn Leu
 245 250 255
 Gln Leu Ala Tyr Ser Phe Asp Lys Thr Leu Leu Ser Lys Ile Arg Met
 260 265 270
 Gln Ala Leu Lys Val Tyr Val Asn Ile Gln Asn Leu Lys Thr Trp Lys
 275 280 285
 His Asn Thr Gly Tyr Thr Pro Gln Ile Gly Gly Ser Ala Ile Ala Phe
 290 295 300
 Gly Val Asp Asn Gly Thr Tyr Pro Val Pro Ala Val Tyr Thr Phe Gly
 305 310 315 320
 Ile Asn Leu Thr Phe Cys Leu His Gln Gly Ala Ala
 325 330

<210> 7353
 <211> 89

<212> PRT

<213> B.fragilis

<400> 7353

His	Thr	Phe	Cys	Gln	Leu	Ser	Phe	Arg	Tyr	Ser	Ile	Val	Ile	Ser	Thr
1			5						10				15		
Ala	Lys	Val	Ser	Asn	Glu	Thr	Asn	Lys	Ser	Arg	Lys	Arg	Cys	Glu	Gln
			20					25					30		
Met	Glu	Thr	Pro	Cys	Thr	Phe	Asn	Ile	Tyr	Arg	Thr	Trp	Asn	Pro	Thr
		35					40					45			
Asn	Val	Glu	Glu	Ala	Ser	Ser	Met	Ile	Tyr	Leu	Pro	Tyr	Asp	Gly	Cys
	50					55					60				
Trp	Ile	Leu	Tyr	Asn	Cys	Met	Glu	Leu	Cys	Ala	Leu	Ile	Lys	Glu	Leu
65				70					75						80
Phe	Glu	Leu	His	Leu	Leu	Ser	Asn	Cys							
				85											

<210> 7354

<211> 68

<212> PRT

<213> B.fragilis

<400> 7354

Thr	Glu	Tyr	Arg	Ser	Lys	Asn	Leu	Asn	Gly	Phe	Ala	Arg	Met	Ile	Glu
1				5					10				15		
Ile	Ser	Pro	Gly	Arg	Ile	Ile	Tyr	Gly	Arg	Ser	Ile	Gln	Arg	Ala	Ile
			20					25				30			
Tyr	Lys	Thr	Tyr	Asn	Phe	Tyr	Gln	Lys	Ser	Ile	Lys	Val	Leu	Ile	Ala
		35					40					45			
Ala	Thr	Glu	Tyr	Tyr	Ser	Leu	Ile	Arg	Gly	Tyr	Leu	Gly	Val	Glu	Ile
	50					55					60				
Val	Thr	Ser	Gly												
65															

<210> 7355

<211> 101

<212> PRT

<213> B.fragilis

<400> 7355

Lys	Lys	Glu	Val	Met	Met	Asp	Ile	Thr	Thr	Leu	Asp	Gln	Phe	Lys	Asp
1				5					10				15		
Glu	Ile	Tyr	Gly	Val	Lys	Gly	Thr	Pro	Arg	Arg	Asp	Asn	Leu	Glu	Arg
			20					25				30			
Glu	Leu	Glu	Thr	Leu	Arg	Ile	Gly	Val	Gln	Ile	Arg	Asn	Ala	Arg	Gln
		35					40					45			
Lys	Lys	Glu	Met	Thr	Gln	Ala	Gln	Leu	Ala	Glu	Arg	Ile	Asn	Lys	Lys
	50					55					60				
Arg	Thr	Phe	Ile	Ser	Lys	Val	Glu	Asn	Asp	Gly	Gly	Asn	Leu	Thr	Leu
65				70					75						80
Lys	Thr	Leu	Ile	Asp	Ile	Val	Glu	Arg	Gly	Leu	Gly	Gly	Lys	Leu	Asn
				85					90					95	
Ile	Glu	Val	Lys	Ile											
				100											

<210> 7356

<211> 373

<212> PRT

<213> B.fragilis

<400> 7356

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Ile His Lys Phe Met Pro Arg Thr Ala Lys Lys Gly Phe Thr Tyr Tyr
1      5      10      15
Gly Phe Asp Thr Asp His Phe Tyr Asp Pro Lys Val Lys Arg Leu Lys
20      25      30
Asn Lys Phe Gly Met Glu Gly Trp Ala Val Phe His Phe Ile Val Asn
35      40      45
Glu Ile His Arg Val Glu Gly Tyr Tyr Met Ile Met Asp Ser Asp Gly
50      55      60
Leu Phe Asp Val Ser Asp Tyr Ser Arg Met Asp Glu Gln Arg Ile Ala
65      70      75      80
Gly Ile Val Asp Tyr Cys Ala Glu Leu Gly Leu Phe Asp Lys Gly Leu
85      90      95
Trp Arg Ser Arg Gln Val Leu Thr Ser Glu Glu Ile Gln Asn Arg Tyr
100     105     110
Met Gly Ile Cys Lys Ser Ile His Arg Lys Pro Ser Ile Ser Asp Asp
115     120     125
Tyr Leu Leu Leu Asn Ala Ala Ala Pro Ala Ala Thr Ser Ser Pro Gln
130     135     140
Val Ala Ala Pro Cys Pro Ala Thr His Thr Ala Pro Val Ala Glu Pro
145     150     155     160
Val Arg Ser Gly Glu Lys Glu Lys Asp Thr Glu Leu Met Gln Ala Ile
165     170     175
Ala Asp Phe Lys Arg Arg Leu Gln Glu Pro Lys Ser Ser Ala Gly Val
180     185     190
Val Arg Glu Glu Ser Gly Ile Ile Arg Glu Asn Arg Pro Gln Asn Lys
195     200     205
Ile Lys Glu Asn Ile Ser Ser Pro Asn Pro Ser Gly Glu Ser Ser Tyr
210     215     220
Thr Pro Glu Arg Glu Glu Glu Arg Asn Ser Leu Ser Gly Lys Leu Gln
225     230     235     240
Tyr Leu Gly Val Asp Ser Asn Val Ile Gln Trp Val Arg Leu Leu Lys
245     250     255
Ser Arg Tyr Pro Asp Phe Pro Ile Glu Lys Ala Ile Ser Asp Met Glu
260     265     270
Gln Ser Asn Phe Gln Leu Thr Lys Glu Asn Tyr Leu Tyr Pro Leu Ile
275     280     285
Lys Asn Tyr Ile Ala Lys Tyr Asn Ala Asp His Gly Ser Glu Glu Arg
290     295     300
Ala Arg Gln Gln Glu Glu Ile Leu Arg Thr Arg Arg Lys Thr Leu Glu
305     310     315     320
Leu Leu Gly Val Pro Val Lys Asp Gln Gln Glu Ile Leu Gln Leu Ala
325     330     335
Ser Val Ala Pro Leu Val Leu Asp Thr Ala Leu Lys Glu Thr Trp Gly
340     345     350
Asn Lys Lys Ile Lys Ser Pro Thr Met Phe Leu Leu Ser Arg Met Arg
355     360     365
Arg Ala Val Ser Ala
370

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<210> 7357

<211> 125

<212> PRT

<213> B.fragilis

<400> 7357

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Ile Met Asp Thr Glu Asn Leu Arg Lys Lys Tyr Ile Leu Trp Ser Asn
1      5      10      15

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Ile Val Asp Leu Arg Ser Arg Gly Ile Asn Ile Thr Arg Thr Ala His
      20                      25                      30
Cys Leu Gly Val Ser Arg Asp Thr Val Lys His Leu Gln Ser Leu Ser
      35                      40                      45
Ser Asp Glu Leu Phe Arg Lys Tyr Gln Glu Ser Arg Arg Cys Lys Leu
      50                      55                      60
Gln Asn Tyr Glu Gln Ala Val Val Ser Leu Leu Phe Thr Phe Pro Ser
      65                      70                      75                      80
Thr Ser Ser Ser Arg Val His Asp Tyr Leu Lys Glu His Tyr Pro Asp
      85                      90                      95
Phe Pro Asn Val Cys Asp Lys Thr Val His Asn Tyr Val Gln Phe Ile
      100                     105                     110
Arg Lys Lys His His Leu Pro Phe Arg Ser Cys Arg Leu
      115                     120                     125

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<210> 7358

<211> 209

<212> PRT

<213> B.fragilis

<400> 7358

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Tyr Met Pro Thr Ile Phe Gln Ile Pro Thr Phe Ile Gln Ile Leu Glu
1      5      10      15
Phe Ile Gly Thr Phe Ala Phe Ala Ile Ser Gly Ile Arg Leu Ala Ser
      20      25      30
Ala Lys Gln Phe Asp Trp Phe Gly Ala Tyr Val Ala Gly Val Ala Val
      35      40      45
Ala Ile Gly Gly Gly Thr Ile Arg Asp Val Leu Leu Asp Val Thr Pro
      50      55      60
Phe Trp Met Thr Asn Pro Ile Tyr Leu Ile Cys Ser Ala Leu Ala Leu
      65      70      75      80
Leu Trp Val Ile Phe Phe Arg Lys His Leu Ile His Met His Asn Thr
      85      90      95
Phe Phe Ile Phe Asp Ser Ile Gly Leu Ala Leu Phe Thr Val Val Gly
      100     105     110
Ile Ser Lys Thr Ile Asp Leu Gly Tyr Ala Phe Trp Val Ala Ile Ile
      115     120     125
Met Gly Thr Met Thr Gly Ala Ala Gly Gly Val Ile Arg Asp Val Phe
      130     135     140
Ile Asn Glu Ile Pro Leu Ile Phe Arg Lys Glu Ile Tyr Ala Met Ala
      145     150     155     160
Cys Val Ile Gly Gly Val Ile Tyr Trp Gly Leu Asp Arg Leu Gly Val
      165     170     175
Asp Ala Ala Leu Thr Gln Val Ile Ser Gly Cys Cys Ile Phe Val Val
      180     185     190
Arg Ala Leu Ala Val Lys Tyr Gln Ile Cys Leu Pro Ile Leu Lys Gly
      195     200     205
Glu

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<210> 7359

<211> 103

<212> PRT

<213> B.fragilis

<400> 7359

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Lys Lys Asn Leu Ile His Asn Arg Ile Glu Met Asp Ile Asn Gln Met
1      5      10      15
Ile Lys Lys Ala Asp Asp Ala Tyr Ile Asn Tyr Arg His Arg Cys Glu

```

20 25 30
 Ser Leu Ala Lys Glu Ala Gln Lys Tyr Ile Asp Trp Asp Asp Lys Val
 35 40 45
 Ser Cys Glu His Leu Pro Ala Asp Gly Leu Cys Ile Leu Ala Thr Val
 50 55 60
 Pro Ser Asp Cys Asn Met Ser Gly Met Pro Glu Cys Val Cys Pro Ala
 65 70 75 80
 Asp Pro Phe Phe Ser Ser Val Lys Ala Lys Glu Lys Ile Thr Pro Asp
 85 90 95
 Glu Phe Lys Glu Ile Ser Ile
 100

<210> 7360

<211> 446

<212> PRT

<213> B.fragilis

<400> 7360

Asn Ile Thr Tyr Gly Thr Thr Ala Asn Gly Tyr Ser His Thr Gly Tyr
 1 5 10 15
 Ile Ser Ala Lys Pro Ile Glu Leu Phe Gly Arg Cys Lys Thr Asn Thr
 20 25 30
 Thr Asn Gly Lys Ser Glu Cys Ser Asp Lys Leu Gln Asn Leu Asp Lys
 35 40 45
 Ser Arg Asn Leu Lys Asp Ser Trp His Ile Leu Ser Phe Leu Cys Ala
 50 55 60
 Lys Lys Gln Ile Ile Pro Gln Glu Ser Val Asn Leu Phe Leu Glu Asn
 65 70 75 80
 Cys Lys Asn Thr Lys Met Lys Ile Thr Ile Val Ala Gly Ala Arg Pro
 85 90 95
 Asn Phe Met Lys Ile Ala Pro Ile Thr Arg Ala Ile Asp Ala Ala Lys
 100 105 110
 Ala Gln Gly Lys Arg Ile Ser Tyr Arg Leu Val Tyr Thr Gly Val Glu
 115 120 125
 Asn Asp Asn Ser Leu Asp Ala Ser Leu Phe Ala Asp Leu His Met Lys
 130 135 140
 Ala Pro Asp Ala Tyr Leu Gly Val Asn Gly Asn Asn Pro Thr Glu Leu
 145 150 155 160
 Thr Ala Gly Ile Met Ile Ala Phe Glu Arg Glu Leu Thr Glu Asn Pro
 165 170 175
 Thr His Val Val Leu Val Val Asp Asp Leu Thr Ala Thr Met Ser Cys
 180 185 190
 Ala Ile Val Ala Lys Lys Gln Asn Ile Lys Val Ala His Leu Val Ala
 195 200 205
 Gly Thr Arg Ser Phe Asp Met Ser Met Pro Lys Glu Ile Asn Arg Met
 210 215 220
 Ile Thr Asp Gly Leu Ser Asp Tyr Leu Phe Thr Ala Gly Met Val Ala
 225 230 235 240
 Asn Arg Asn Leu Asn Gln Thr Gly Thr Glu Asn Glu Thr Val Tyr Tyr
 245 250 255
 Val Gly Asn Ile Leu Ile Asp Thr Ile Arg Tyr Asn Arg Asn Arg Leu
 260 265 270
 Ile Lys Pro Val Trp Phe Ser Val Leu Gly Leu Lys Glu His Glu Tyr
 275 280 285
 Ile Leu Leu Thr Leu Asn Arg His Val Leu Leu Asn Asn Lys Glu Asn
 290 295 300
 Leu Gln Glu Leu Met Glu Thr Leu Leu Lys Lys Ala Asn Gly Met Pro
 305 310 315 320
 Ile Val Ala Pro Leu His Thr Tyr Val Arg Asp Ala Ile Lys Ala Leu

3761

				325					330					335			
Gly	Ile	Thr	Ala	Pro	Asn	Leu	His	Ile	Met	Pro	Thr	Gln	Ser	Tyr	Leu		
			340						345					350			
Ser	Phe	Gly	Tyr	Leu	Met	Asn	Gln	Ala	Lys	Ala	Ile	Val	Thr	Asp	Ser		
		355					360					365					
Gly	Asn	Val	Ala	Glu	Glu	Ala	Thr	Phe	Leu	Gly	Ile	Pro	Cys	Ile	Thr		
	370					375					380						
Leu	Asn	Thr	Phe	Ala	Glu	His	Pro	Glu	Thr	Trp	Arg	Thr	Gly	Thr	Asn		
385					390					395					400		
Glu	Leu	Val	Gly	Glu	Asp	Pro	Ala	Ala	Leu	Gly	Ala	Cys	Met	Asp	Lys		
			405						410					415			
Leu	Met	Asn	Gly	Glu	Trp	Lys	Gln	Gly	Thr	Leu	Pro	Glu	Arg	Trp	Asp		
		420						425					430				
Gly	Arg	Thr	Ala	Glu	Arg	Ile	Val	Gln	Ile	Leu	Leu	Gly	Glu				
	435					440						445					

<210> 7361

<211> 165

<212> PRT

<213> B.fragilis

<400> 7361

Met	Ala	Ile	Glu	Asn	Thr	Glu	Gly	Tyr	Pro	Leu	Ile	Ser	Trp	Arg	Ala		
1			5					10					15				
Ser	Ile	Ile	Lys	Thr	Lys	Tyr	Met	Asn	Thr	Gln	Arg	Gln	Thr	Gly	Thr		
		20					25					30					
Cys	Arg	Ser	Leu	Ser	Gly	His	Ala	Gln	Arg	His	Gly	Arg	Glu	Val	Arg		
	35					40					45						
Pro	Ser	Tyr	Glu	Ile	Ser	Thr	Ser	Gln	Phe	Ser	Asp	Met	Lys	Val	Arg		
	50				55				60								
Arg	Leu	Thr	Arg	Asn	Tyr	Gly	Phe	Gly	Gly	Tyr	Ser	Ile	Tyr	Arg	Tyr		
65				70				75						80			
Leu	Val	Ser	Glu	Ala	Leu	Tyr	Lys	Gly	Glu	Tyr	Phe	Leu	Pro	Trp	Cys		
		85						90					95				
Glu	Glu	Thr	Ala	Arg	Ala	Val	Ala	Ser	Tyr	Trp	Asn	Ala	Ser	Leu	Glu		
	100						105					110					
Asp	Ile	Thr	Arg	Ile	Val	Asp	Gly	Cys	Val	Gln	Val	Gly	Leu	Phe	Asn		
	115					120					125						
Asp	Glu	Leu	Tyr	Arg	Lys	His	Gly	Val	Leu	Thr	Ser	Ala	Ala	Ile	Gln		
	130				135					140							
Gln	Asp	Tyr	Leu	Lys	Leu	Cys	Gly	Met	Gly	Tyr	Ile	Gln	Glu	Glu	Phe		
145				150					155						160		
Ala	Leu	Ser	Ala	Ser													
			165														

<210> 7362

<211> 88

<212> PRT

<213> B.fragilis

<400> 7362

Asn	Ser	Leu	Glu	Met	Lys	Ile	Thr	Ile	Ser	Glu	Lys	Val	Glu	Gln	Phe		
1			5					10					15				
Ile	Ser	Glu	Arg	Thr	Asp	Lys	Ala	Gly	Gly	Tyr	Tyr	Glu	Tyr	Ile	Asp		
		20					25					30					
Val	Ile	Ala	Gln	Lys	His	Ala	Leu	Glu	Ala	Ala	Glu	Met	Val	Lys	Gln		
	35				40						45						
Glu	Thr	Lys	Glu	Lys	Cys	Gln	Ile	Ala	Phe	Arg	Asn	Phe	Met	Leu	Arg		
	50				55						60						

Ala Thr Leu Ala Asn Val Ser Gly Glu Ser Leu Asp Phe Glu Lys Glu
 65 70 75 80
 Phe Ala Asp Thr Met Ser Gln Ile
 85

<210> 7363
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 7363
 Phe Val Leu Glu Thr Leu Lys Arg Glu Phe Phe Glu Asn Tyr Asn Asn
 1 5 10 15
 Tyr Met Leu Met Thr Ser Gln Glu Ala Asn Ser Ile Pro Leu Glu Asp
 20 25 30
 Ile Leu Ser Arg Tyr Gly Tyr Glu Pro Ser Arg Arg Tyr Gly Gly Tyr
 35 40 45
 Asp Met Tyr Arg Ser Pro Phe Arg Cys Asp Ser Ser Pro Ser Phe Lys
 50 55 60
 Val Phe Arg Asn Glu Asn Arg Trp Tyr Asp Phe Gly Asp Ser Ser His
 65 70 75 80
 Gly Arg Val Val Asp Leu Val Met Arg Ile Gln Asn Cys Ser Phe Pro
 85 90 95
 Gln Ala Met Lys Glu Ile Glu Gly Leu Gly Phe Ser Ser Gly Met Ile
 100 105 110
 Pro Gln Pro Arg Pro Val Thr Val Thr Val Gln Lys Ala Ser Gly Met
 115 120 125
 Thr Leu Leu Lys Ile Ile Pro Val Glu Asn Gly His Leu Leu Asp Tyr
 130 135 140
 Ala Ala Ser Arg Gly Ile Asp Ala Asp Ile Val Arg Glu His Cys Val
 145 150 155 160
 Glu Val His Tyr Cys Phe Glu Lys Asn Pro Arg Glu Lys Tyr Ala Leu
 165 170 175
 Gly Phe Ala Asn Asp His Gly Gly Phe Glu Leu Arg Asn Ser Met Phe
 180 185 190
 Lys Gly Cys Ala Thr Ala Lys Asp Ile Thr Gly Leu Ala Ala Gly Asn
 195 200 205
 Arg Ser Cys Ala Val Phe Glu Gly Phe Phe Asp Leu Leu Ser Phe Lys
 210 215 220
 Gln Tyr Ala Lys Asp His Pro Gln Met Pro Ala Leu Arg Lys Leu Asp
 225 230 235 240
 Leu Cys Val Leu Asn Ser Thr Ser Ile Val Glu Arg Ser Lys Asp Phe
 245 250 255
 Leu Ser Arg Tyr Glu Lys Val His Ala Phe Leu Asp Asn Asp Ser Pro
 260 265 270
 Gly Arg Glu Ala Leu Arg Lys Met Arg His Phe Leu Pro Lys Asp Thr
 275 280 285
 Val Phe Val Asn Glu Ala Glu Arg Leu Tyr Pro Ser Cys Asn Asp Phe
 290 295 300
 Asn Glu Phe Leu Gln Lys Ile Lys Cys Pro Ala Ser Gly Arg Glu Met
 305 310 315 320

<210> 7364
 <211> 731
 <212> PRT
 <213> B.fragilis

<400> 7364
 Asp Glu Val Cys Met Lys Gln Gln Tyr Ser Lys Leu Leu Leu Val Ile

1		5		10		15									
Phe	Leu	Leu	Leu	Ser	Ala	Pro	Gln	Ala	Phe	Ala	Gln	Leu	Lys	Gly	Val
		20						25					30		
Ile	Thr	Asp	Ser	Ile	Ser	His	Glu	Pro	Leu	Met	Tyr	Ile	Ser	Val	Phe
		35					40					45			
Tyr	Glu	Gly	Lys	Gly	Val	Gly	Gly	Ile	Ser	Asn	Ala	Asn	Gly	Glu	Tyr
	50					55					60				
Lys	Val	Glu	Thr	Arg	Lys	Gly	Trp	Asn	Glu	Leu	Thr	Phe	Ser	Ala	Val
65					70					75					80
Gly	Tyr	Ile	Thr	Lys	Lys	Val	Lys	Ile	Pro	Ala	Gly	Ala	Lys	Glu	Leu
				85					90					95	
Asn	Val	Val	Leu	Ser	Pro	Asp	Asp	Val	Met	Leu	Glu	Glu	Val	Val	Val
		100						105					110		
Lys	Pro	Lys	Lys	Glu	Lys	Tyr	Ser	Arg	Lys	Asn	Asn	Pro	Ala	Val	Glu
		115					120					125			
Phe	Met	Arg	Lys	Val	Ile	Asp	His	Lys	Lys	Ala	Gln	Lys	Leu	Glu	Thr
	130					135					140				
Asn	Asp	Tyr	Tyr	Gln	Tyr	Ser	Lys	Tyr	Gln	Lys	Met	Lys	Met	Ser	Leu
145					150					155					160
Asn	Asp	Val	Thr	Pro	Glu	Ser	Leu	Glu	Lys	Gly	Ile	Tyr	Lys	Lys	Phe
		165						170						175	
Ser	Phe	Leu	Lys	Asp	Gln	Val	Glu	Val	Ser	Pro	Glu	Thr	Asn	Lys	Leu
		180						185					190		
Ile	Leu	Pro	Ile	Ser	Val	Gln	Glu	Thr	Ser	Ser	Lys	Thr	Ile	Tyr	Arg
	195						200					205			
Lys	Asp	Pro	Glu	Ser	Lys	Lys	Thr	Ile	Ile	Glu	Gly	Met	Asn	Ser	Asn
	210					215					220				
Gly	Val	Glu	Glu	Phe	Phe	Ser	Thr	Gly	Asp	Met	Leu	Gly	Thr	Ile	Leu
225				230					235						240
Asn	Asp	Val	Phe	Ala	Asp	Ile	Asn	Ile	Tyr	Asp	Asp	Asp	Ile	Arg	Leu
				245					250					255	
Leu	Gln	Arg	Arg	Phe	Val	Ser	Pro	Ile	Gly	Ser	Gly	Ala	Ile	Ser	Phe
		260						265					270		
Tyr	Lys	Phe	Tyr	Leu	Met	Asp	Thr	Val	Met	Val	Asp	Lys	Asn	Lys	Cys
	275					280						285			
Val	His	Leu	Thr	Phe	Val	Pro	Gln	Asn	Pro	Gln	Asp	Phe	Gly	Phe	Thr
	290					295					300				
Gly	His	Leu	Tyr	Val	Leu	Asp	Asp	Ser	Thr	Tyr	Ala	Val	Lys	Lys	Cys
305				310					315						320
Thr	Met	Asn	Leu	Pro	Lys	Lys	Thr	Gly	Val	Asn	Phe	Val	Glu	Asn	Leu
			325					330						335	
Asp	Val	Val	Gln	Gln	Tyr	Glu	Gln	Leu	Pro	Asn	Gly	Asn	Trp	Val	Leu
		340						345					350		
Thr	Asp	Asp	Asp	Met	Thr	Val	Asp	Leu	Leu	Val	Met	Lys	Ala	Ile	Gln
	355					360						365			
Gly	Ile	Gln	Val	Lys	Arg	Thr	Thr	Lys	Tyr	Ser	Asn	Tyr	Val	Phe	Glu
	370					375					380				
Pro	Ile	Glu	Pro	Arg	Leu	Phe	Arg	Leu	Lys	Gly	Asn	Val	Ile	Lys	Glu
385				390					395						400
Ala	Asp	Met	Leu	Thr	Lys	Ser	Asp	Glu	Tyr	Trp	Ala	Gly	Val	Arg	Gln
			405					410						415	
Val	Pro	Leu	Thr	Lys	Thr	Glu	Ser	Ser	Met	Asp	Leu	Phe	Met	Asn	Arg
		420						425					430		
Leu	Glu	Gln	Ile	Pro	Gly	Phe	Lys	Tyr	Val	Ile	Phe	Gly	Ala	Lys	Ala
	435					440						445			
Leu	Ile	Glu	Asn	Tyr	Val	Glu	Thr	Gly	Thr	Lys	Lys	His	Pro	Ser	Lys
	450					455					460				
Phe	Asp	Phe	Gly	Pro	Ile	Asn	Thr	Met	Ile	Ser	Ser	Asn	Tyr	Val	Asp
465					470				475						480

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Gly Thr Arg Phe Arg Leu Ser Gly Met Thr Thr Ala Lys Leu Asn Pro
 485 490 495
 His Trp Phe Phe Asn Gly Tyr Gly Ala Tyr Gly Leu Lys Asp Lys Lys
 500 505 510
 Trp Lys Tyr Glu Gly Asn Val Thr Tyr Ser Phe Arg Lys Cys Glu Phe
 515 520 525
 Phe Pro Trp Glu Phe Pro Lys His Tyr Ile Ser Ala Ser Tyr Arg Tyr
 530 535 540
 Asp Val Met Ser Pro Met Asp Lys Phe Leu Asp Thr Asp Lys Asp Asn
 545 550 555 560
 Val Phe Val Ala Trp Lys Thr Thr Thr Val Asp Gln Met Ser Tyr Val
 565 570 575
 Arg Asp Ala Thr Leu Arg Tyr Glu Met Glu Thr Leu Ser Gly Phe Ser
 580 585 590
 Val Ala Ala Met Ala Arg His Arg Lys Asp Thr Pro Ala Gly Lys Leu
 595 600 605
 Gln Tyr Ile Arg Asn Asp Ala Ala Lys Thr Ile Val Pro Asp Ile Thr
 610 615 620
 Thr Ala Glu Leu Gly Leu Thr Leu Arg Tyr Ala Pro Gly Glu Thr Phe
 625 630 635 640
 Val Asn Thr Lys Gln Arg Arg Arg Pro Val Ser Leu Asp Ala Pro Ile
 645 650 655
 Phe Thr Leu Ser His Thr Thr Gly Phe Lys Gly Val Leu Gly Gly Glu
 660 665 670
 Tyr Asn Phe Asn Leu Thr Glu Ala Ser Ile Trp Lys Arg Phe Trp Leu
 675 680 685
 Ser Ser Trp Gly Lys Val Asp Val Thr Leu Lys Gly Gly Ala Gln Trp
 690 695 700
 Asn Thr Val Pro Phe Pro Leu Leu Ile Leu Pro Ala Ala Asn Leu Ser
 705 710 715 720
 Tyr Ile Thr Gln Lys Glu Thr Phe Asn Leu Ile
 725 730

<210> 7365

<211> 110

<212> PRT

<213> B.fragilis

<400> 7365

Leu Ile Pro Ile Gln Met Ser Lys Ile Glu Asp Leu Val Lys Trp Lys
 1 5 10 15
 Thr Val Glu Thr Val Thr Pro Asn Tyr Pro Asp Gly Val Ile Phe Ile
 20 25 30
 Lys Glu Asp Thr Ser Val Glu Phe Pro Leu Ala Met Val Ala Phe Pro
 35 40 45
 Leu Gly Gly His Glu Asn Gly Thr Lys Lys Gln Arg Glu Arg Ala Lys
 50 55 60
 Leu Ile Ala Ala Ala Pro Glu Leu Leu Asn Ala Leu Gln Gly Met Leu
 65 70 75 80
 Glu Arg Phe Asp Tyr Asn Asp Gln Ala Ile Tyr Ser Phe Ala Thr Lys
 85 90 95
 Glu Ile Asp Ala Ala Lys Ala Ala Ile Lys Lys Ala Ile Glu
 100 105 110

<210> 7366

<211> 179

<212> PRT

<213> B.fragilis

<400> 7366

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Ile Leu His Met Gly His Pro Thr Met Gln Glu Asn Asp Thr Ala Lys
1           5           10           15
Leu Thr Pro Thr Arg Ile Met Leu Leu Ile Leu Phe Ile Ala Gly Thr
           20           25           30
Gly Ile Phe Thr Leu Gln Ala Gln Asn Arg Glu Glu Arg Lys Glu Leu
           35           40           45
Lys Glu Gln Thr Val Lys Glu Lys Ile Glu Ser Glu Asn Tyr Arg Ile
           50           55           60
Asp Ile Asn Thr Ala Tyr Pro Arg Arg Gly Arg Met Ile Pro Leu Thr
65           70           75           80
Ser Ile Tyr Ser Val Thr Ile Arg Asn Asp Ser Val Phe Ser Gln Leu
           85           90           95
Pro Tyr Phe Gly Arg Ala Tyr Ser Ile Pro Tyr Gly Gly Gly Gln Gly
           100          105          110
Leu Met Phe Asn Ala Pro Ile Asp Gln Tyr Thr Met Ala Met Gly Lys
           115          120          125
Arg Gly Ala Ala Lys Ile Asn Phe Thr Ala Lys Ser Pro Glu Asp Gln
           130          135          140
Phe Arg Phe Arg Ile Thr Ile Tyr Ser Asn Gly Ser Ser Ser Ile Asp
145           150           155           160
Val Asp Met Gln Asn Arg Glu Ser Ile Ser Phe Ser Gly Asp Leu Ile
           165          170          175
Leu Pro Glu

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<210> 7367

<211> 65

<212> PRT

<213> B.fragilis

<400> 7367

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Arg Ile Asn Met Ala Trp Met Val Thr Gln Lys Asn Ile Lys Ile His
1           5           10           15
Thr Cys Ile Asp Gly Ile Asp Ser Val Glu Asp Val Arg Val Ile Ile
           20           25           30
Ser His Lys Lys Leu Lys Ala Leu Gly Ala Lys Arg Arg Val Tyr Lys
           35           40           45
Asp Thr Arg Glu Ser Phe Phe Leu Ile Glu Ser Asp Cys Glu Ile Ile
50           55           60
Leu
65

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<210> 7368

<211> 104

<212> PRT

<213> B.fragilis

<400> 7368

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Lys Leu Leu Val Arg Asn Val Glu Phe Ile Lys Thr Arg Glu Arg Ala
1           5           10           15
Phe Phe Leu Leu Asn Pro Ile Val Lys Ser Ser Ser Lys Leu Glu Gly
           20           25           30
Met Lys Lys Tyr Leu Ala Ile Glu Ile Arg Gly Glu Ile Phe Val Met
           35           40           45
Asn Asp Asn Asp Glu Leu Gly Gly Leu Ile Asp Asn Asp Val Pro Phe
50           55           60
Thr Val Ile Gly His Val Cys Thr Glu Glu Cys Asn Thr Thr Cys Leu
65           70           75           80

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His Tyr Arg Gln Gly Thr Cys Pro Cys Lys Ile Met Lys Asp Thr Phe
 85 90 95
 Gly Lys Val Ile His Val Phe Val
 100

<210> 7369
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 7369
 Ala Val Thr Ala Cys Arg Arg Glu Cys Glu Asn Lys Gln Thr Ile Lys
 1 5 10 15
 Asn Pro Ile Leu Ile Lys Met Glu Ile Arg Gly Lys Ile Ile Ala Val
 20 25 30
 Leu Pro Val Lys Asp Gly Ile Gly Lys Thr Thr Gly Asn Glu Trp Lys
 35 40 45
 Ser Arg Glu Phe Val Leu Glu Thr Glu Glu Ser Lys Pro Gln Ser Val
 50 55 60
 Cys Leu Gln Leu Met Asn Ala Asn Ile Glu Arg Tyr Ala Val Glu Val
 65 70 75 80
 Gly Met Thr Val His Val Lys Phe Asp Ile Ser Ala Arg Gln Trp Glu
 85 90 95
 Asn Arg Trp Phe Asn Thr Leu Thr Ala Trp Glu Val Thr Val Ile Lys
 100 105 110
 Gln Lys Glu Glu Gln Pro Ala
 115

<210> 7370
 <211> 577
 <212> PRT
 <213> B.fragilis

<400> 7370
 Ala Leu Trp Arg Pro Cys Ile Gln Lys Leu Trp Leu Ala Phe Pro Ser
 1 5 10 15
 His Pro Gly Ser Gly Glu Ser Gly Val Pro Val Leu Thr Phe Lys Lys
 20 25 30
 Met Arg Lys Thr Arg Arg Ile Ile Pro Phe Val Phe Cys Gly Leu Leu
 35 40 45
 Ile Ser Cys Thr Thr Glu Arg Arg Leu Ala Arg Val Arg Ile Ser Gln
 50 55 60
 Pro Gln Met Lys Glu Thr Val Ala Asp Thr Gly Lys Gln Leu Pro Gly
 65 70 75 80
 Gln Ile Ala Trp Thr Asp Asp Lys Gly Glu Glu His Leu Val Lys Gln
 85 90 95
 Val Ser His Asp Ser Val Thr Gly Glu Asn Met Thr Leu Ile Glu Leu
 100 105 110
 Ser Glu Val Thr Val Met Ala Lys Ser Lys Gln Val Ala Glu Arg Asn
 115 120 125
 Gly Lys Ile Asn Leu Asp Phe Leu Val Thr Val Pro Gly Glu Leu Ile
 130 135 140
 Asn Asn Lys Trp Gln Val Gln Leu Thr Pro Val Ala Tyr Lys Pro Ser
 145 150 155 160
 Asp Thr Leu Tyr Leu Asp Lys Ile Phe Leu Ser Gly Ala Asp Phe Ala
 165 170 175
 Lys Met Gln Glu Lys Gly Tyr Met Arg Tyr Arg Ala Phe Met Asn Ser
 180 185 190
 Ile Ile Pro Asp Ser Leu Tyr Met Gln Arg Leu Leu Asp Ser Lys Gly

195	200	205
Tyr Lys Lys Ala Leu Ala Glu Leu Glu Glu Glu Tyr Phe Gln Ala Trp		
210	215	220
Lys His Glu Val Ile Ala Lys Glu Arg Trp Val Asp Trp Ser Asp Lys		
225	230	235
Thr Asn Ala Arg Phe Ala Leu Phe Asn Tyr Lys Met Glu Arg Asn Arg		
245	250	255
Gln Ala Ile Ala Gly Tyr Asn Ser Ile Leu Glu Tyr Leu Pro Ala Tyr		
260	265	270
Trp Met Arg Arg Glu Ile Asp Gly Lys Tyr Ile Pro Ser Lys Trp Lys		
275	280	285
Met Phe Ala Glu Gly Asn Tyr Lys Ile Arg Thr Arg Ser Ile Thr Pro		
290	295	300
Glu Asp Ser Ala Ala Ile Thr Glu Arg Phe Thr Asp Tyr Lys Lys Ile		
305	310	315
Ala Glu Asn Gln Lys Arg Lys Glu Gln Ala Gly Ala Met Tyr Glu Lys		
325	330	335
Tyr Val Arg Phe Pro Tyr Glu Pro Ala Arg Leu Asp Thr Val Ile Lys		
340	345	350
Gln Gly Asn Ser Phe Val Tyr Tyr Lys Gln Glu Leu Pro Ala Thr		
355	360	365
Glu Asn Thr Lys Lys Ile Glu Leu Thr Leu Asp Gly Gln Ile Leu Ser		
370	375	380
Arg Asp Glu Val Arg Thr Gln Leu Pro Pro Ser Asp Thr Ile Thr Tyr		
385	390	395
Tyr Ile Ser Ser Met Val Gln Phe Leu Asp Arg Thr Pro Arg Tyr Arg		
405	410	415
Lys Lys Ile Ile Thr Arg Lys Asp Glu Val Ser Leu Arg Ala Tyr Val		
420	425	430
Thr Tyr Lys Ser Gly Ser Thr Gly Phe Asp Glu Lys Thr Gly Asn Asn		
435	440	445
Lys Ala Glu Ile Asp Lys Val Phe Glu Thr Ile Arg Gly Ile Asn Tyr		
450	455	460
Thr Gly Glu Phe Leu Ile Asp Ser Ile Arg Met Thr Ala Thr Ser Ser		
465	470	475
Pro Glu Gly Ser Ser Glu Met Asn Leu Phe Leu Ser Arg Glu Arg Ala		
485	490	495
Leu Ala Leu Lys Lys Tyr Leu Ala Ala Arg Thr Glu Asp Arg Glu Gly		
500	505	510
Val Asp Thr Leu Phe Arg Pro Arg Trp Thr Gly Glu Glu Trp Ser Arg		
515	520	525
Leu His Glu Leu Val Leu Ser Asp Asp Ser Leu Ala Asn Lys Ala Gly		
530	535	540
Ile Leu Arg Ile Leu Lys Glu Thr Lys Asn Pro Asp Ser Arg Glu His		
545	550	555
Ala Leu Arg Glu Tyr Ala Ser Asp Tyr Lys Arg Ile Arg Glu Arg Val		
565	570	575
Phe		

<210> 7371

<211> 118

<212> PRT

<213> B.fragilis

<400> 7371

Ala Lys Gly Gly Thr Ala Gly Met Lys Lys Arg Ser Phe Leu Leu Gly
1 5 10 15
Ser Leu Leu Ala Phe Thr Leu Gly Val Ser Ala Gln Ser Tyr Ser Leu

20 25 30
 Arg Thr Asn Val Leu Gly Leu Ala Thr Thr Asn Leu Asn Leu Glu Ala
 35 40 45
 Ser Met Thr Leu Gly Arg Lys Trp Ser Leu His Leu Pro Val Gln Tyr
 50 55 60
 Asn Pro Phe Arg Phe Ser Arg Asn Arg Gln Phe Arg Asn Leu Tyr Val
 65 70 75 80
 Ala Pro Gly Val Arg Tyr Trp Leu Leu Glu Ser Tyr Met Gly Pro Phe
 85 90 95
 Ile Gly Met His Gly Thr Ala Gly Tyr Ile Gln Cys Gly Gln Pro Leu
 100 105 110
 Arg Gln Gln Val Pro Leu
 115

<210> 7372
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 7372
 Arg His Met Gly Tyr Val Ser Ile Lys Arg Gly Tyr Cys Arg Ser Gln
 1 5 10 15
 Lys Tyr Arg Asn Lys Tyr Ile Arg Trp Tyr Phe Glu Gly Val Thr Pro
 20 25 30
 Gly Leu Arg Gly Gln Phe Glu Ala Met Arg Ser Thr Ser Ala Glu Glu
 35 40 45
 Val Arg Val Ala Ala Leu Val His Cys His Asn Ala Val Ile Asp Arg
 50 55 60
 Tyr Leu Val Thr Ile Gly Met Cys Ser Ala Lys Val Gln Pro Arg Asn
 65 70 75 80
 Thr Lys Thr Asp Tyr Ser Ala Tyr His Ser Gly Met Asp Asp Gly Arg
 85 90 95
 Ser Ile Ser Leu His Arg Gln Ile Asn Gly Gly Asn Val
 100 105

<210> 7373
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 7373
 Arg Met Lys Gly Thr Tyr Trp Tyr Ala Val Asp Tyr Ala Gly Thr Gly
 1 5 10 15
 His Leu Phe Thr Tyr Lys Pro Glu Arg Asp Ala Gly Ile Trp Asn Gly
 20 25 30
 Glu Glu Ala Leu Gln Val Ser Gln Gly Ala Leu Arg Glu Val Phe Pro
 35 40 45
 Lys Ile Thr Trp Gln Asp Ser Pro Val Val Val Thr Leu Glu Val Leu
 50 55 60
 Pro Cys Glu Glu Thr Phe Arg Leu Arg Leu Ser Lys Asn Cys Gly Tyr
 65 70 75 80
 Ile Leu Arg Lys Tyr Leu Arg Phe Pro Arg Glu Gly Lys Asn Lys
 85 90 95

<210> 7374
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 7374

Arg Lys Lys Gly Asn Gly Glu Ile Lys Gly Arg Gly Trp Lys Met Gly
 1 5 10 15
 Met Arg Trp Phe Gln Gly Gly Phe Gly Ser Lys Leu Ser Trp Trp Glu
 20 25 30
 Lys Gly Gly Gly Asn Glu Gly Glu Ala Glu Lys Arg Lys Ile Lys Met
 35 40 45
 Ala Trp Ile Cys Glu Pro Val Thr Val Gln Asn Asn Ile
 50 55 60

<210> 7375

<211> 73

<212> PRT

<213> B.fragilis

<400> 7375

Val His Arg Ile Tyr Ile Ser Pro Thr Ile Gly Val Pro Asp Met Lys
 1 5 10 15
 Lys Lys Ser Glu Lys Gln Asn Met Asn Val Lys Asn Met Asn Lys Ile
 20 25 30
 Asn Thr Glu Lys Ser Pro Ala Ile Thr Leu Asn Asn Arg Arg Leu His
 35 40 45
 Lys Gln Asn Lys Gln Tyr Ile Ala Leu Ser Ser Gln Thr Lys Leu Thr
 50 55 60
 Lys Thr Leu Asn Ile Arg Ile Gln Ile
 65 70

<210> 7376

<211> 138

<212> PRT

<213> B.fragilis

<400> 7376

Thr Val Asp Val Ser Arg Gly Glu Trp Arg Tyr Arg Ile Lys Asp Arg
 1 5 10 15
 Asn Pro Leu Asn Asn Ser His Met Tyr Phe Ile His Tyr Ile Gln Thr
 20 25 30
 Tyr Ala Ser Val Asn Arg Lys Gly Ser Glu Leu Gln Glu Tyr Val Leu
 35 40 45
 Gln Leu Lys Asp Ser Leu Ile Lys Asp Arg Glu Val Leu Asp Asp Leu
 50 55 60
 Lys Glu Glu Leu His Cys Arg Ile Gly Glu Leu Asp Ala Lys Tyr Pro
 65 70 75 80
 Arg Thr Gln Pro Leu His Leu Asp Ala Ala Ser Gly Arg Asp Ser Ile
 85 90 95
 Gln Trp Ile Ile His Val Lys Gly Lys Pro Asp Asn Leu Ile Cys Ile
 100 105 110
 Ile Ser Ile Thr Lys Val Arg Asn Leu Leu Gly Glu Gly Thr Gly Phe
 115 120 125
 Phe Leu Gly Glu Lys Thr Gly Gly Lys Glu
 130 135

<210> 7377

<211> 432

<212> PRT

<213> B.fragilis

<400> 7377

Leu Lys Tyr Lys Cys Lys Arg Ile Ser Leu Asn Ser Tyr Leu Leu Val

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1           5           10           15
Arg Lys Leu Phe Glu Ala Ile Phe Arg Leu Pro Tyr Ser Val Leu Leu
           20           25           30
Phe Ala Ser His Thr Leu Arg Gly Ile Pro Ile Ile Ala Arg Thr Tyr
           35           40           45
His Ala Cys Arg Leu Thr Asn Gly Ile Thr Leu Glu Leu Ala Val Leu
           50           55           60
His Leu Thr Asp Asp Thr Ile Ile Val Leu His Tyr Asp Lys Phe Ala
65           70           75           80
Gln Thr Phe Pro Ser Ile Glu Ser Ala Leu Arg Cys His Val Gly Ile
           85           90           95
Val Gly Gln Lys Leu His Ser Arg Phe Arg Ile Leu Leu Val Gln Leu
           100          105          110
Asn Ser Asn Cys Phe Asn Thr Phe Leu Cys Leu Val Glu Gly Gly Phe
           115          120          125
Lys Phe Val Leu Arg Ser Thr Tyr Ile Ala Asp His Gln Ile Val Ala
           130          135          140
Gly Ile Tyr His Val Gly His Pro Val Glu Asn Pro Lys Ser Gly Val
145          150          155          160
Pro Gly Glu Gly Asp Val Ile Gly Thr Val Tyr Thr Arg Ile Ala Tyr
           165          170          175
Arg Ser Phe Gly Ser Thr Thr Ile Tyr Gly Ser Glu Asn Ser His Val
           180          185          190
Gly Ile Ile Arg Thr Lys Pro Lys His Thr Ala Tyr Ser Ile Gly Lys
           195          200          205
Ile Gly Thr His Leu Ser His Lys Asn Glu Thr Ala Leu Leu Cys Arg
           210          215          220
Asp Gly Thr Leu Ile Glu Ile Leu Leu Val Ala Tyr Leu Glu Ser Gln
225          230          235          240
Arg Arg Glu Ala Val Arg Cys Phe Ile Arg Ser Gly Thr Lys Ile Ile
           245          250          255
Ala Asp Val Glu Gly Gly Ser Phe Ile Met Val Ala His Gly Ile Leu
           260          265          270
Tyr Ile Leu Asn Gly Glu Phe Ala Phe Arg Leu Tyr Glu Gln Arg His
           275          280          285
Arg Val Ile Gly Leu Ser Leu Asp Ile Arg Gln Ile Gly Phe Thr Leu
290          295          300
Val Gly Lys His Ile Glu Val Ala Pro His Thr Gly Phe Thr Glu Thr
305          310          315          320
Ala Gly Thr Glu Ile Glu Arg Cys Ile Ser Ile Gly Lys Ala Glu Val
           325          330          335
Phe Val His Thr Ala Glu Ile Ser Phe Phe Ala Gly Lys Arg Asn Asn
           340          345          350
Val Ile Arg Ile His Ala Val Gly Leu Val Ser His Ile Glu Leu Met
           355          360          365
Asp Ala Arg Leu Val Gly Met Cys Arg Asn Ala Val Val Arg His Ser
370          375          380
Asp Ser Tyr Pro Tyr Gly Ser Pro Asp Ala Gly Thr Phe Thr Tyr His
385          390          395          400
Leu His Asn Pro Tyr Phe Ile Gly Ile Gly Asn Gly Glu Asp Ser Pro
           405          410          415
Cys Cys Asn Ile Arg Ile Pro Ala Pro Val Gln Cys Leu His Arg Gly
           420          425          430

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<210> 7378

<211> 763

<212> PRT

<213> B.fragilis

<400> 7378

Asn Leu His Lys Gly Met Lys Asn Asn Thr Leu Ser Gly Ala Tyr Tyr
 1 5 10 15
 Pro Lys Asn Pro Gln Ile Lys His Phe Arg Ile Met Arg Ile Thr
 20 25 30
 Leu Phe Leu Leu Met Ala Cys Val Phe Ser Leu Tyr Ala Gly Asn Ser
 35 40 45
 Tyr Ser Gln Asn Thr Arg Val Ser Phe Ala Met Asp Asn Val Gly Leu
 50 55 60
 Asn Lys Val Leu Glu Glu Ile Glu Ser Gln Thr Asp Tyr Leu Phe Ile
 65 70 75 80
 Tyr Asn Ser Gln Ile Asn Val Asn Lys Leu Val Thr Ile Lys Ala Asn
 85 90 95
 Lys Gln Thr Val Ser Lys Val Leu Asp Gln Ile Leu Gln Asn Thr Gly
 100 105 110
 Ile Glu Tyr Lys Leu Glu Gly Ser His Ile Ile Leu Glu Lys Lys Val
 115 120 125
 Glu Glu Val His Asn Ser Ser Ser Ala Val Gln Gln Gln Gln Thr Lys
 130 135 140
 Lys Ile Thr Gly Lys Val Val Asp Lys Thr Gly Glu Ala Ile Ile Gly
 145 150 155 160
 Ala Asn Val Lys Ile Gln Gly Thr Asp Lys Gly Thr Ile Thr Asp Leu
 165 170 175
 Asp Gly Asn Phe Ile Leu Glu Val Ala Pro Lys Asp Val Leu Val Ile
 180 185 190
 Ser Tyr Ile Gly Tyr Leu Asp Thr Lys Val Pro Ile Ala Gly Gln Lys
 195 200 205
 Gln Ile His Val Val Leu Ser Glu Asp Asn Lys Met Leu Asp Glu Val
 210 215 220
 Val Val Ile Gly Tyr Gly Thr Thr Ser Thr Arg Lys Met Ala Ser Ala
 225 230 235 240
 Val Thr Ala Val Lys Gly Glu Lys Leu Gln Asp Leu Pro Phe Asn Ser
 245 250 255
 Val Ala Ala Ser Leu Ala Gly Arg Ala Thr Gly Val Ile Val Gln Ser
 260 265 270
 Ser Gly Gly Glu Pro Gly Ser Ala Pro Ser Ile Ser Ile Arg Gly Gly
 275 280 285
 Gly Ala Pro Val Tyr Val Ile Asp Gly Val Ile Ser Asp Ala Trp Asp
 290 295 300
 Phe Asn Thr Leu Asn Pro Asn Asp Ile Glu Ser Leu Ser Ile Leu Lys
 305 310 315 320
 Asp Ala Ala Ser Leu Ala Val Tyr Gly Ser Arg Ala Ala Asn Gly Ile
 325 330 335
 Val Met Val Lys Thr Lys Gln Gly Gly Lys Gly Lys Thr Ala Val Asn
 340 345 350
 Tyr Thr Phe Asn Ala Glu Phe Ser Gln Pro Thr Lys Leu Leu Lys Lys
 355 360 365
 Thr Arg Gly Tyr Asp Tyr Ala Tyr Asn Gln Met Leu Ala Gly Ile Asn
 370 375 380
 Asp Gly Leu Asp Glu Ala Asp Leu Pro Phe Asn Gln Glu Val Leu Asp
 385 390 395 400
 Ile Ile Lys Asn Gln Ser Asp Pro Tyr Thr Ser Gly His Ala Asp Thr
 405 410 415
 Asp Trp Leu Gly Glu Gly Leu Lys Thr Val Ala Pro Gln Tyr Lys His
 420 425 430
 Thr Val Ser Leu Ser Gly Ser Gly Asn Lys Val Asn Tyr Tyr Ile Ser
 435 440 445
 Leu Gly Met Leu Asn Gln Gly Ser Ile Tyr Thr Ser Asn Ala Leu Asn
 450 455 460

Tyr Asp Arg Tyr Thr Val Arg Ser Asn Val Asn Thr Thr Phe Asp Lys
 465 470 475 480
 Ile Gly Leu Lys Val Ser Leu Asn Leu Asn Gly Ala Tyr Glu Lys Lys
 485 490 495
 Glu Tyr Pro Ser Phe Ser Ala Ala Lys Ile Trp Glu Asp Leu Tyr Asn
 500 505 510
 Gln Ser Pro Leu Asn Pro Ala Tyr Asn Lys Asp Gly Thr Tyr Ala Ala
 515 520 525
 Val Thr Asp His Pro Leu Ala Glu Met Asp Lys Arg Ser Gly Tyr Asn
 530 535 540
 Arg Asn Tyr Gly Lys Phe Ile Asn Thr Gln Val Ala Ala Asp Trp Thr
 545 550 555 560
 Leu Pro Trp Leu Lys Glu Leu Thr Leu Gly Ala Met Phe Asn Tyr Arg
 565 570 575
 Leu Asn Asp Ser His Val Lys Lys Phe Ser Thr Lys Ala Pro Gln Tyr
 580 585 590
 Tyr Ala Asp Gly Ala Val Tyr Pro Ile Gly Lys Pro Thr Leu Asn Glu
 595 600 605
 Glu Gly Tyr Trp Gly Glu Ser Tyr Asn Phe Glu Val Ser Ala Ala Tyr
 610 615 620
 Val Lys Thr Phe Ala Glu Lys His Thr Ile Asp Ala Lys Phe Val Tyr
 625 630 635 640
 Asn Val Ala Glu Asn Thr Gly Trp Asn Phe Asn Ala Tyr Cys Gly Glu
 645 650 655
 Tyr Leu Ser Thr Val Val Asp Gln Leu Phe Ala Gly Ala Ala Tyr Thr
 660 665 670
 Gln Gln Asn Gly Gly Tyr Ser Asp Glu Arg Gly Arg Met Gly Leu Val
 675 680 685
 Gly Leu Leu Lys Tyr Asp Phe Met Asn Arg Asn Ile Val Glu Gly Ser
 690 695 700
 Phe Arg Tyr Tyr Gly Ser Asp Asn Phe Thr Pro Arg His Arg Trp Gly
 705 710 715 720
 Phe Phe Pro Ser Gly Ala Glu Ala Trp Ala Ile Ser Glu Glu Pro Phe
 725 730 735
 Phe Lys Glu Trp Glu Gln His Val Phe Asn Leu Leu Lys Leu Arg Pro
 740 745 750
 Phe Leu Trp Thr Asp Pro Tyr Gly Lys Trp Glu
 755 760

<210> 7379
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 7379
 Phe Gly Gly Lys Thr Ala Leu Gln Asp Leu Ile Lys Arg Gly Phe Arg
 1 5 10 15
 Val Pro Pro Glu Thr Ala Leu Ser Trp Asp Tyr Gly Gly Asn Ser Phe
 20 25 30
 Ile Leu Trp Asp Trp Asn Ile Gly Phe Phe Ser Thr Asn Arg Phe Val
 35 40 45
 Lys Gly His Leu Arg Asn Ile Ser Tyr Tyr Arg Lys Pro Lys Gly Gly
 50 55 60
 Val Asn Ile Ile Pro Arg
 65 70

<210> 7380
 <211> 397
 <212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (387)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7380

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Pro Ala Val Lys Thr Leu Asn Trp Cys Arg Asn Thr Asp Ile Thr Ala
1          5          10          15
Trp Arg Val Phe Thr Ile Ala Asp Pro Asn Glu Ile Trp Ile Met Glu
          20          25          30
Met Ile Gly Lys Gly Pro Gly Ile Arg Gly Ala Val Trp Val Ala Val
          35          40          45
Arg Val Pro Asp Asp Cys Ile Ser Ala His Ala Asn Gln Ser Arg Ile
          50          55          60
His Gln Phe Asp Met Ala Asp Lys Ala Asn Cys Met Tyr Ser Asn Asp
65          70          75          80
Val Ile Ser Phe Ala Arg Glu Lys Gly Tyr Phe Ser Gly Val Asn Lys
          85          90          95
Asp Phe Ser Phe Ala Asp Ala Tyr Ala Pro Leu Asp Phe Gly Ala Arg
          100          105          110
Arg Phe Cys Glu Ala Arg Val Trp Ser Tyr Phe Asn Met Phe Thr Asp
          115          120          125
Gln Gly Glu Ala Tyr Leu Pro Tyr Ile Gln Gly Lys Thr Asn Asp Pro
130          135          140
Met Pro Leu Phe Val Lys Pro Lys Arg Lys Leu Ser Val Gln Asp Val
145          150          155          160
Lys Asn Ala Met Arg Asp His Tyr Glu Gly Thr Ala Leu Asp Ile Ser
          165          170          175
Asn Asp Phe Gly Ala Gly Pro Tyr Lys Thr Pro Tyr Arg Leu Ser Pro
          180          185          190
Leu Thr Phe Lys Val Gly Asp Gln Glu Tyr Phe Asn Glu Arg Pro Ile
          195          200          205
Ser Thr Gln Gln Ser Gly Phe Val Phe Val Ala Gln Met Arg Ala Asn
210          215          220
Leu Pro Asp Ala Val Gly Gly Val Leu Trp Phe Gly Thr Asp Asp Ala
225          230          235          240
Asn Met Thr Val Phe Thr Pro Val Tyr Cys Cys Thr Thr Lys Ala Pro
          245          250          255
Val Cys Tyr Thr Arg Val Asp Gly Ala Asp Tyr Ile Thr Phe Ser Trp
          260          265          270
Asn Ser Ala Phe Trp Ile Phe Asn Trp Val Ala Asn Met Val Tyr Pro
          275          280          285
Arg Tyr Asp Leu Met Ile Gly Asp Val Arg Ala Thr Gln Asn Glu Leu
290          295          300
Glu Thr Thr Phe Asn Glu Ala Gln Glu Gly Ile Glu Ala Val Ala Val
305          310          315          320
Lys Leu Tyr Glu Lys Asn Pro Glu Thr Ala Val Lys Phe Leu Thr Asn
          325          330          335
Tyr Thr Asp Met Thr Ala Gln Ser Thr Phe Asp Thr Trp Lys Arg Leu
          340          345          350
Gly Glu Phe Ile Ile Val Lys Tyr Asn Asp Gly Val Ile Arg Lys Met
          355          360          365
Lys Asp Gly Lys Phe Glu Arg Asn Ala Ile Gly Gln Pro Ala Gly Val
370          375          380
Val Arg Xaa Gly Tyr Tyr Arg Asn Ser Ser Lys Ser Met
385          390          395

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<210> 7381
 <211> 586
 <212> PRT
 <213> B.fragilis

<400> 7381

Asn	Ile	Asp	Arg	Thr	Met	Gly	Asn	Glu	Glu	Leu	Ile	Lys	Gln	Val	Thr
1				5				10					15		
Glu	Lys	Ala	Glu	Lys	Trp	Leu	Thr	Pro	Ala	Tyr	Asp	Ala	Glu	Thr	Gln
		20						25				30			
Ala	Glu	Val	Lys	Arg	Met	Leu	Glu	Asn	Glu	Asp	Lys	Thr	Glu	Leu	Ile
		35					40					45			
Glu	Ala	Phe	Tyr	Lys	Asp	Leu	Glu	Phe	Gly	Thr	Gly	Gly	Leu	Arg	Gly
	50					55					60				
Ile	Met	Gly	Val	Gly	Thr	Asn	Arg	Met	Asn	Ile	Tyr	Thr	Val	Gly	Ala
65					70				75						80
Ala	Thr	Gln	Gly	Leu	Ser	Asn	Tyr	Leu	Asn	Ala	Asn	Phe	Lys	Asp	Met
			85					90						95	
Lys	Gln	Ile	Ser	Val	Val	Val	Gly	Tyr	Asp	Cys	Arg	Asn	Asn	Ser	Ser
		100						105					110		
Leu	Phe	Ala	Lys	Ile	Ser	Ala	Asp	Ile	Phe	Ser	Ala	Asn	Gly	Ile	Lys
	115						120						125		
Val	Tyr	Leu	Phe	Glu	Glu	Met	Arg	Pro	Thr	Pro	Glu	Met	Ser	Phe	Ala
	130					135					140				
Ile	Arg	His	Leu	Gly	Cys	Gln	Ser	Gly	Ile	Ile	Leu	Thr	Ala	Ser	His
145					150					155					160
Asn	Pro	Lys	Glu	Tyr	Asn	Gly	Tyr	Lys	Ala	Tyr	Trp	Asp	Asp	Gly	Ala
			165						170					175	
Gln	Val	Leu	Ala	Pro	His	Asp	Lys	Gly	Ile	Ile	Asp	Glu	Val	Asn	Lys
		180						185					190		
Ile	Ala	Ser	Ala	Ala	Asp	Ile	Lys	Phe	Gln	Gly	Asn	Pro	Asp	Leu	Ile
	195						200					205			
Gln	Ile	Ile	Gly	Glu	Asp	Val	Asp	Lys	Ile	Tyr	Leu	Asp	Met	Val	Lys
	210				215						220				
Thr	Val	Ser	Ile	Asp	Pro	Glu	Ala	Ile	Ala	Arg	His	Lys	Asp	Met	Lys
225					230					235					240
Ile	Val	Tyr	Thr	Pro	Ile	His	Gly	Thr	Gly	Met	Met	Leu	Ile	Pro	Arg
			245						250					255	
Ala	Leu	Lys	Met	Trp	Gly	Phe	Glu	Asn	Val	Tyr	Thr	Val	Pro	Glu	Gln
		260					265						270		
Met	Ile	Lys	Asp	Gly	Asn	Phe	Pro	Thr	Val	Val	Ser	Pro	Asn	Pro	Glu
	275					280						285			
Asn	Ala	Glu	Ala	Leu	Thr	Met	Ala	Leu	Asn	Leu	Ala	Lys	Glu	Ile	Asp
	290					295					300				
Ala	Asp	Leu	Val	Met	Ala	Ser	Asp	Pro	Asp	Ala	Asp	Arg	Val	Gly	Ile
305					310					315					320
Ala	Cys	Lys	Asn	Asp	Lys	Gly	Glu	Trp	Val	Leu	Ile	Asn	Gly	Asn	Gln
			325						330					335	
Thr	Cys	Leu	Met	Tyr	Leu	Tyr	Tyr	Ile	Ile	Thr	Gln	Tyr	Asn	Lys	Leu
		340						345					350		
Gly	Lys	Met	Thr	Gly	Asn	Glu	Phe	Cys	Val	Lys	Thr	Ile	Val	Thr	Thr
		355				360						365			
Glu	Leu	Ile	Lys	Lys	Ile	Ala	Asp	Lys	Asn	His	Ile	Glu	Met	Leu	Asp
	370					375					380				
Cys	Tyr	Thr	Gly	Phe	Lys	Trp	Ile	Ala	Arg	Glu	Ile	Arg	Leu	Arg	Glu
385					390					395					400
Gly	Lys	Lys	Lys	Tyr	Ile	Gly	Gly	Gly	Glu	Glu	Ser	Tyr	Gly	Phe	Leu
			405						410					415	
Ala	Glu	Asp	Phe	Val	Arg	Asp	Lys	Asp	Ala	Val	Ser	Ala	Cys	Cys	Leu

```

      420                      425                      430
Ile Ala Glu Val Ala Ala Trp Ala Lys Asp Asn Gly Lys Thr Leu Tyr
      435                      440                      445
Gln Leu Leu Met Asp Ile Tyr Val Glu Tyr Gly Phe Ser Lys Glu Phe
      450                      455                      460
Thr Val Asn Val Val Lys Pro Gly Lys Ser Gly Ala Glu Glu Ile Lys
      465                      470                      475                      480
Ala Met Met Glu Asn Phe Arg Ala Asn Pro Pro Lys Glu Leu Gly Gly
      485                      490                      495
Ser Lys Val Val Leu Ser Lys Asp Tyr Lys Thr Leu Lys Gln Thr Asp
      500                      505                      510
Ala Ala Gly His Val Thr Asp Ile Asp Met Pro Glu Pro Ser Asn Val
      515                      520                      525
Leu Gln Tyr Phe Thr Glu Asp Gly Gly Lys Val Ser Val Arg Pro Ser
      530                      535                      540
Gly Thr Glu Pro Lys Ile Lys Phe Tyr Ile Glu Val Lys Gly Glu Met
      545                      550                      555                      560
Gly Cys Arg Asn Cys Phe Ala Thr Ala Asp Ala Glu Ala Thr Glu Lys
      565                      570                      575
Val Glu Ala Val Lys Lys Ser Leu Gly Ile
      580                      585

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<210> 7382

<211> 64

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (37)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7382

```

Arg Thr Ala Ser Ser Ser Val Met Pro Leu Val Asn Leu Gln Ala Trp
1          5          10          15
Tyr Val Arg Ala Ile Ile Gly Ile Pro Arg Arg Val Cys Glu Ala Asn
      20          25          30
Arg Arg Thr Leu Xaa Gly Asn Arg Asn Ile Ala Ser Lys Ser Phe Leu
      35          40          45
Thr Lys Arg Tyr Glu Phe Lys Leu Ile Leu Leu His Leu Tyr Phe Asn
      50          55          60

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<210> 7383

<211> 81

<212> PRT

<213> B.fragilis

<400> 7383

```

Glu Leu Phe Ile Gln Glu Asn Asp Ser Asp Arg Phe Pro Val Thr Leu
1          5          10          15
Pro Ile Ile Val Glu Thr Gly Lys Ile Ser Thr Arg Ile Gly Asp Ile
      20          25          30
Val Arg Val Glu Gly Thr Ala Gln Val Leu Gly Phe Leu Glu Asn Ser
      35          40          45
Pro Lys Arg Asn Ala Pro Ser Asn Glu Gly Gln Gly Ile Pro Ile Ile
      50          55          60
Leu Trp Ile His Leu Tyr Asp Ala Lys Tyr Pro Ser Lys Glu Tyr Leu
      65          70          75          80
Lys

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<210> 7384
 <211> 314
 <212> PRT
 <213> B.fragilis

<400> 7384

```

Tyr Ile Val Met Asp Lys Asp Leu Leu Tyr Asn Phe Tyr Lys Gly Lys
1      5      10      15
Val Ser Ile Glu Glu Gly Gln Arg Val Lys Ala Trp Val Glu Ala Ser
20      25      30
Asp Glu Asn Glu Arg Ala Phe Tyr Arg Glu Arg Lys Ile Phe Asp Ala
35      40      45
Leu Met Leu Asn Asn Pro Leu Pro Val Lys Lys Thr Ser Phe Phe Asn
50      55      60
Phe Thr His Tyr Lys Lys Ile Glu Trp Leu Lys Ile Ala Met Ala Val
65      70      75      80
Ile Leu Thr Phe Leu Leu Ser Tyr Phe Tyr Gln Glu Tyr Lys Ala Gly
85      90      95
Leu Asp Ser Val Ala Met Ser Thr Ile Ser Val Pro Glu Gly Gln Arg
100     105     110
Thr Asn Val Thr Leu Pro Asp Gly Ser Asn Val Trp Leu Asn Ala Cys
115     120     125
Thr Thr Ile Gln Tyr Pro Thr Ser Phe Asn Ser Arg Glu Arg Phe Val
130     135     140
Ile Leu Lys Gly Glu Ala Tyr Phe Asp Val Lys Lys Asn Lys Ser Arg
145     150     155     160
Pro Phe Ile Val His Thr Asp Ala Tyr Ser Ile Glu Val Leu Gly Thr
165     170     175
Lys Phe Asn Val Asp Ala Tyr Pro Glu Thr Glu Lys Phe Glu Thr Thr
180     185     190
Leu Met His Gly Ser Val Lys Val Thr Leu Lys Ala Asp Ser Ser Gln
195     200     205
Thr Val Ile Leu Lys Pro Asp His Lys Leu Ser Leu Glu Lys Gly Arg
210     215     220
Phe Val Met Thr Lys Val Glu Asp Tyr Asn Pro Tyr Arg Trp Lys Glu
225     230     235     240
Gly Leu Ile Cys Phe Ser Asp Glu Ser Phe Pro Asn Ile Met Lys Asp
245     250     255
Phe Glu Lys Tyr Tyr Gly Val Lys Ile Val Ile Glu Asn Lys Asn Val
260     265     270
Leu Gln Ile Asn Phe Thr Gly Lys Phe Arg Gln Thr Asp Gly Ile Asp
275     280     285
Tyr Ala Leu Arg Ile Leu Gln Lys Asn Ile Asp Phe Gln Tyr Glu Lys
290     295     300
Asp Asn Glu Lys Gln Ile Ile Tyr Ile Lys
305     310

```

<210> 7385
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 7385

```

Ser Tyr Val Met His Ile Lys Thr Asn Pro Lys Asp Lys Met Ser Phe
1      5      10      15
Asn Gln Leu Tyr Asn Asp Tyr Gln Thr Arg Phe Leu Asn Phe Ala Asn
20      25      30

```


Thr Tyr Val Arg Asp Trp Asp Val Ala Glu Asp Ile Thr Thr Glu Ala
 35 40 45
 Leu Ile Tyr Tyr Trp Glu Asn Arg Asn Thr Leu Ser Glu Val Ser Asn
 50 55 60
 Ile Pro Ala Tyr Ile Leu Thr Ile Ile Lys Asn Lys Ser Leu Asn Tyr
 65 70 75 80
 Leu Arg His Leu Gln Ile Arg Glu Glu His Ser Glu Asn Ile Arg Lys
 85 90 95
 Tyr Ile Glu Trp Glu Leu Asn Ala Arg Ile Val Ser Leu Asp Ala Cys
 100 105 110
 Glu Pro Tyr Glu Leu Leu Val Lys Glu Met Gln Glu Leu Ile Gln Gln
 115 120 125
 Thr Leu Asp Lys Leu Pro Glu Arg Thr Arg Lys Ile Phe Ile Leu Ser
 130 135 140
 Arg Tyr Glu Asn Lys Ser Tyr Lys Glu Ile Ala Ala Leu Met Asn Met
 145 150 155 160
 Thr Thr Lys Gly Val Asp Phe His Ile Cys Lys Ala Leu Lys Ala Leu
 165 170 175
 Gln Ile Asn Leu Lys Asp Tyr Phe Pro Leu Phe Leu Tyr Phe Leu Met
 180 185 190
 Lys Phe His
 195

<210> 7386
 <211> 629
 <212> PRT
 <213> B.fragilis

<400> 7386
 Glu Asp Arg Leu Lys Thr Met Glu Glu Asn Glu Leu Ile Pro Val Asp
 1 5 10 15
 Asn Asn Pro Val Glu Tyr Thr Asp Asp Asn Ile Arg His Leu Ser Asp
 20 25 30
 Met Glu His Val Arg Thr Arg Pro Gly Met Tyr Ile Gly Lys Leu Gly
 35 40 45
 Asp Gly Ser His Thr Glu Asp Gly Ile Tyr Val Leu Leu Lys Glu Val
 50 55 60
 Ile Asp Asn Ser Ile Asp Glu Phe Lys Met Gln Ser Gly Lys Lys Ile
 65 70 75 80
 Glu Ile Arg Val Glu Glu Asn Leu Arg Val Ser Val Arg Asp Tyr Gly
 85 90 95
 Arg Gly Ile Pro Gln Gly Lys Leu Ile Glu Ala Val Ser Val Leu Asn
 100 105 110
 Thr Gly Gly Lys Tyr Asp Ser Lys Ala Phe Lys Lys Ser Val Gly Leu
 115 120 125
 Asn Gly Val Gly Val Lys Ala Val Asn Ala Leu Ser Ser Asn Phe Glu
 130 135 140
 Val Arg Ser Tyr Arg Asp Gly Lys Val Arg Cys Ala Thr Phe Thr Lys
 145 150 155 160
 Gly Glu Leu Val Thr Asp His Thr Glu Asp Thr Glu Glu Glu Asn Gly
 165 170 175
 Thr Tyr Ile Phe Phe Glu Pro Asp Glu Thr Leu Phe Leu Asn Tyr Ser
 180 185 190
 Phe Arg Pro Glu Phe Ile Glu Thr Met Leu Arg Asn Tyr Thr Tyr Leu
 195 200 205
 Asn Thr Gly Leu Ala Ile Ile Tyr Asn Gly Gln Arg Ile Leu Ser Arg
 210 215 220
 Asn Gly Leu Val Asp Leu Leu Asn Asp Asn Met Thr Ala Thr Gly Leu
 225 230 235 240

Tyr Pro Ile Val His Leu Lys Gly Glu Asp Ile Glu Ile Ala Phe Thr
 245 250 255
 His Thr Gly Gln Tyr Gly Glu Glu Tyr Tyr Ser Phe Val Asn Gly Gln
 260 265 270
 His Thr Thr Gln Gly Gly Thr His Gln Ser Ala Phe Lys Glu His Ile
 275 280 285
 Ala Arg Thr Ile Lys Glu Phe Tyr Asn Lys Asn Gln Asp Tyr Thr Asp
 290 295 300
 Ile Arg Asn Gly Leu Val Ala Ala Ile Ala Val Asn Val Glu Glu Pro
 305 310 315 320
 Met Phe Glu Ser Gln Thr Lys Ile Lys Leu Gly Ser Thr Asn Met Ser
 325 330 335
 Pro Gly Gly Ile Thr Val Asn Lys Phe Val Gly Asp Phe Ile Lys Gln
 340 345 350
 Glu Val Asp Asn Phe Leu His Lys His Ala Asp Ile Ala Glu Ile Met
 355 360 365
 Leu Gln Lys Ile Gln Asp Ser Glu Lys Glu Arg Lys Ala Ile Ala Gly
 370 375 380
 Val Thr Lys Leu Ala Arg Glu Arg Ala Lys Lys Ala Asn Leu His Asn
 385 390 395 400
 Arg Lys Leu Arg Asp Cys Arg Val His Leu Asn Asp Val Lys Gly Lys
 405 410 415
 Gly Leu Glu Glu Glu Ser Cys Ile Phe Ile Thr Glu Gly Asp Ser Ala
 420 425 430
 Ser Gly Ser Ile Thr Lys Ser Arg Asp Val Asn Thr Gln Ala Val Phe
 435 440 445
 Ser Leu Arg Gly Lys Pro Leu Asn Ser Phe Gly Leu Thr Lys Lys Val
 450 455 460
 Val Tyr Glu Asn Glu Glu Phe Asn Leu Leu Gln Ala Ala Leu Asn Ile
 465 470 475 480
 Glu Asp Gly Ile Glu Gly Leu Arg Tyr Asn Lys Val Ile Val Ala Thr
 485 490 495
 Asp Ala Asp Val Asp Gly Met His Ile Arg Leu Leu Leu Ile Thr Phe
 500 505 510
 Phe Leu Gln Phe Phe Pro Asp Leu Ile Lys Lys Gly His Val Tyr Ile
 515 520 525
 Leu Gln Thr Pro Leu Phe Arg Val Arg Asn Lys Lys Lys Thr Leu Tyr
 530 535 540
 Cys Tyr Thr Glu Glu Glu Arg Val Asn Ala Ile Lys Glu Leu Ser Pro
 545 550 555 560
 Asn Pro Glu Ile Thr Arg Phe Lys Gly Leu Gly Glu Ile Ser Pro Asp
 565 570 575
 Glu Phe Arg His Phe Ile Gly Lys Asp Met Arg Leu Glu Gln Val Ser
 580 585 590
 Leu Arg Lys Thr Asp Thr Val Lys Glu Leu Leu Glu Phe Tyr Met Gly
 595 600 605
 Lys Asn Thr Met Glu Arg Gln Asn Phe Ile Ile Asp Asn Leu Val Ile
 610 615 620
 Glu Glu Asp Ile Ala
 625

<210> 7387

<211> 160

<212> PRT

<213> B.fragilis

<400> 7387

Ser Gly Tyr Arg Arg Arg His Arg Ile Asn Met Arg Arg Ala Ile Phe
 1 5 10 15

Pro Gly Thr Phe Asp Pro Phe Thr Ile Gly His Tyr Ser Val Val Gln
 20 25 30
 Arg Thr Leu Thr Phe Met Asp Glu Val Val Ile Gly Ile Gly Ile Asn
 35 40 45
 Glu Asn Lys Asn Thr Tyr Phe Pro Ile Glu Lys Arg Val Glu Met Ile
 50 55 60
 Arg Lys Phe Tyr Lys Asp Glu Pro Arg Ile Lys Val Glu Ser Tyr Asp
 65 70 75 80
 Cys Leu Thr Ile Asp Phe Ala Arg Gln Val Asp Ala Gln Phe Ile Val
 85 90 95
 Arg Gly Ile Arg Thr Val Lys Asp Phe Glu Tyr Glu Glu Thr Ile Ala
 100 105 110
 Asp Ile Asn Arg Lys Leu Ala Gly Ile Glu Thr Ile Leu Leu Phe Thr
 115 120 125
 Glu Pro Glu Leu Thr Cys Val Ser Ser Thr Ile Val Arg Glu Leu Leu
 130 135 140
 Gly Tyr Asn Lys Asp Ile Ser Met Phe Ile Pro Lys Gly Met Glu Met
 145 150 155 160

<210> 7388
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7388
 His Asn Thr Arg Ile Leu Pro Ser Ile Arg Val Met Val Arg Leu Ala
 1 5 10 15
 Lys Asn Asn Pro Lys Asn Gln Ser Arg Met Pro Glu Pro Thr Lys Val
 20 25 30
 Lys Arg Ser Lys Leu Leu Met Pro Val Ser Arg Lys Gly Val Met Glu
 35 40 45
 Ala Leu His Pro Asn Thr Lys Lys Met Leu Asn Arg Leu Leu Pro Ile
 50 55 60
 Thr Leu Pro Met Ala Ile Ser Gly Phe Phe Phe Lys Ala Ala Thr Ile
 65 70 75 80
 Asp Val Ala Ser Ser Gly Arg Glu Val Pro Pro Ala Thr Ser Val Ser
 85 90 95
 Pro Ile Thr Asp Ser Leu Thr Pro Arg Cys Arg Ala Met Leu Leu Ala
 100 105 110
 Pro Ser Thr Asn His Cys Pro Pro Lys Ile Ser Pro Ala Asn Pro Pro
 115 120 125
 Arg Met Lys Ser Thr Asp Phe His Ile Gly Arg Leu Leu Ile Ser Ser
 130 135 140
 Ser Gly
 145

<210> 7389
 <211> 381
 <212> PRT
 <213> B.fragilis

<400> 7389
 Ile Gln Ala Met Ala Ile Thr Ile Lys Lys Val Ser Thr Lys Arg Glu
 1 5 10 15
 Leu Lys Lys Phe Ile Arg Phe Asn Tyr Glu Leu Tyr Lys Glu Asn Pro
 20 25 30
 Tyr Ser Val Pro Asp Leu Tyr Asp Asp Met Leu Asn Thr Phe Asn Lys
 35 40 45
 Lys Lys Asn Ala Ala Phe Glu Phe Cys Glu Ala Glu Tyr Phe Leu Ala

```

      50                      55                      60
Tyr Lys Asp Gly Lys Ile Val Gly Arg Ile Ala Gly Ile Ile Asn His
65                      70                      75                      80
Arg Ala Asn Ala Thr Trp Asn Lys Lys Asp Val Arg Phe Gly Trp Ile
      85                      90                      95
Asp Phe Ile Asp Asp Leu Glu Val Ser Ser Arg Leu Leu Gln Thr Val
      100                      105                      110
Glu Glu Trp Gly Lys Ser Lys Gly Met Glu Asn Ile Gln Gly Pro Leu
      115                      120                      125
Gly Phe Thr Asp Phe Asp Ala Glu Gly Met Leu Ile Glu Gly Phe Asp
      130                      135                      140
Gln Leu Ser Thr Met Ala Thr Ile Tyr Asn His Pro Tyr Tyr Pro Gln
145                      150                      155                      160
His Met Glu Lys Leu Gly Phe Glu Lys Asp Ala Asp Trp Val Glu Tyr
      165                      170                      175
Lys Ile Tyr Ile Pro Asp Ala Ile Pro Glu Lys His Gln Arg Ile Ser
      180                      185                      190
Asp Leu Ile Gln Arg Lys Tyr Asn Leu Lys Ile Lys Lys Tyr Thr Ser
      195                      200                      205
Ser Arg Lys Ile Ala Ala Asp Tyr Gly Gln Ala Ile Phe Glu Leu Met
      210                      215                      220
Asn Glu Ala Tyr Ser Pro Leu Tyr Gly Tyr Ser Pro Leu Ser Gln Arg
225                      230                      235                      240
Gln Ile Asp Gln Tyr Val Lys Met Tyr Leu Pro Ile Val Asp Leu Arg
      245                      250                      255
Met Val Thr Leu Ile Thr Asp Ala Glu Asp Lys Leu Ile Ala Val Gly
      260                      265                      270
Ile Ser Met Pro Ser Leu Ser Glu Ala Leu Gln Lys Ser His Gly Arg
      275                      280                      285
Leu Leu Pro Leu Gly Trp Tyr Tyr Leu Leu Lys Ala Leu Phe Met Lys
      290                      295                      300
Arg Arg Ala Lys Met Leu Asp Leu Leu Leu Val Ala Val Lys Pro Glu
305                      310                      315                      320
Tyr Gln Asn Lys Gly Val Asn Ala Leu Leu Phe Ser Asp Leu Ile Pro
      325                      330                      335
Val Tyr Gln Lys Leu Gly Phe Ile Phe Ala Glu Ser Asn Pro Glu Leu
      340                      345                      350
Glu Met Asn Gly Lys Val Gln Ala Gln Trp Glu Tyr Phe Lys Thr Glu
      355                      360                      365
Gln His Lys Arg Arg Arg Ala Phe Thr Lys Lys Ile Asp
      370                      375                      380

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<210> 7390

<211> 323

<212> PRT

<213> B.fragilis

<400> 7390

```

Phe Lys Gly Ile Asp Met Asp Ile Leu Leu Leu Ile Gly Gly Leu Leu
1      5      10      15
Leu Ile Leu Ile Gly Ala Asn Cys Leu Thr Asp Gly Ala Ala Ser Val
      20      25      30
Ala Lys Arg Phe Arg Ile Pro Ser Ile Val Ile Gly Leu Thr Ile Val
      35      40      45
Ala Phe Gly Thr Ser Ala Pro Glu Leu Thr Val Ser Val Ser Ser Ala
      50      55      60
Leu Lys Gly Ser Ala Asp Ile Ala Val Gly Asn Val Val Gly Ser Asn
65      70      75      80
Ile Phe Asn Thr Leu Met Ile Val Gly Cys Thr Ala Leu Phe Ala Pro

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<210> 7391
<211> 306
<212> PRT
<213> B.fragilis
```

<400> 7391																
Thr	His	Val	Ile	Met	Lys	Arg	Ile	Ile	Tyr	Leu	Leu	Ile	Gly	Leu	Cys	
1				5					10					15		
Ser	Val	Leu	Gly	Leu	Gln	Ala	Gln	Asn	Phe	Gly	Ser	Pro	Ala	Met	Arg	
			20					25					30			
Lys	Leu	Gln	Leu	Ala	Glu	Phe	Ala	Ile	Ser	Asn	Leu	Tyr	Val	Asp	Thr	
		35					40					45				
Val	Asn	Glu	Asn	Lys	Leu	Val	Glu	Ser	Ala	Ile	Ile	Glu	Met	Leu	Ala	
	50					55					60					
Gln	Leu	Asp	Pro	His	Ser	Thr	Tyr	Ser	Asp	Ala	Glu	Glu	Val	Lys	Lys	
65					70					75					80	
Met	Asn	Glu	Pro	Leu	Gln	Gly	Asn	Phe	Glu	Gly	Ile	Gly	Val	Gln	Phe	
				85					90					95		
Gln	Met	Ile	Glu	Asp	Thr	Leu	Leu	Ile	Val	Gln	Pro	Val	Ser	Asn	Gly	
			100					105					110			
Pro	Ser	Glu	Lys	Val	Gly	Ile	Leu	Ala	Gly	Asp	Arg	Ile	Ile	Ala	Val	
		115				120					125					
Asn	Asp	Thr	Ala	Ile	Ala	Gly	Val	Lys	Met	Gly	Thr	Glu	Glu	Ile	Met	
	130					135					140					
Gly	Arg	Leu	Arg	Gly	Pro	Lys	Asp	Ser	Lys	Val	Asn	Leu	Thr	Ile	Ile	
145					150					155					160	
Arg	Arg	Gly	Val	Lys	Glu	Pro	Leu	Leu	Phe	Asn	Val	Lys	Arg	Asp	Lys	

165 170 175
 Ile Pro Ile Leu Ser Leu Asp Ala Ala Tyr Met Ile Gln Pro Lys Ile
 180 185 190
 Gly Tyr Ile Arg Ile Asn Arg Phe Gly Ala Thr Thr Ala Glu Glu Phe
 195 200 205
 Leu Lys Ala Leu Lys Glu Leu Gln Lys Lys Gly Met Lys Asp Leu Ile
 210 215 220
 Leu Asp Leu Gln Gly Asn Gly Gly Gly Tyr Leu Asn Ala Ala Ile Asp
 225 230 235 240
 Leu Ala Asn Glu Phe Leu Gly Gln Lys Lys Leu Ile Val Tyr Thr Glu
 245 250 255
 Arg Pro Ser Ala Gln Arg Asn Glu Val Phe Gly Gln Gly Asn Gly Asn
 260 265 270
 Phe Arg Asn Gly Arg Leu Val Glu Leu Val Asp Lys Tyr Ser Leu Trp
 275 280 285
 Ala Val Lys Ile Gly Thr Gly Ala Ile Gln Asp Trp Glu Gln Arg Asn
 290 295 300
 Gly Gly
 305

<210> 7392
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 7392
 Ser Lys Glu Thr Ile Asn Val Lys Leu Asn Phe Lys Arg Glu Phe Met
 1 5 10 15
 Lys Arg Lys Leu Met Leu Leu Leu Thr Cys Leu Phe Met Gly Ile Gly
 20 25 30
 Leu Val Thr Ala Gln Thr Gln Lys Val Thr Gly Val Val Ile Ser Glu
 35 40 45
 Glu Asp Gly Gln Pro Val Val Gly Ala Ser Val Leu Ala Lys Gly Thr
 50 55 60
 Thr Val Gly Val Ile Thr Asp Val Asp Gly Lys Phe Thr Leu Ser Gly
 65 70 75 80
 Ile Pro Ser Ser Ala Lys Thr Leu Gln Ile Ser Tyr Ile Gly Met Gln
 85 90 95
 Thr Ala Glu Val Ala Ile Ala Pro Asn Ile Arg Val Ile Leu Lys Thr
 100 105 110
 Asp Ser Lys Ala Leu Asp Glu Val Val Val Ala Tyr Gly Thr Gln
 115 120 125
 Ser Ala Arg Thr Val Thr Ala Ser Val Ser Thr Val Arg Ala Asp Ala
 130 135 140
 Leu Lys Asp Val Pro Ser Val Ser Phe Asp Gln Met Leu Gln Gly Arg
 145 150 155 160
 Ala Ser Gly Val Ser Ile Thr Thr Pro Ser Ala Gly Val Gly Gln Ala
 165 170 175
 Pro Ile Val Arg Val Arg Gly Val Asn Ser Ile Thr Ser Gly Thr Ser
 180 185 190
 Pro Leu Tyr Val Val Asp Val Phe Thr Gly Gly Ala Met Ile Ala Arg
 195 200 205
 Gly

<210> 7393
 <211> 398
 <212> PRT
 <213> B.fragilis

<400> 7393

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Leu Lys Ile Lys Glu Met Asp Lys Ile Ile Tyr Ser Leu Val Tyr Asn
1      5      10      15
Arg Lys Lys Ser Leu Asn Lys Lys Gly Met Ala Leu Val Gln Val Glu
20      25      30
Ala Tyr Leu Asn Arg Lys Lys Lys Tyr Phe Ser Thr Lys Val Tyr Leu
35      40      45
Ser Pro Asp Gln Trp Asp Phe Lys Lys Arg Met Val Lys Asn His Pro
50      55      60
Asn Ala Asp Ala Ile Asn His Met Leu Tyr Glu Phe Met Ala Glu Ile
65      70      75      80
Glu Lys Lys Glu Leu Gly Leu Trp Gln Gln Gly Lys Gln Ile Ser Leu
85      90      95
Asp Ser Leu Lys Asn Ser Met Glu Asn Gln Asp Asp Ser Thr Ser Phe
100     105     110
Ile Ala Phe Phe Arg Asn Glu Ile Ala Lys Ser Ser Leu Lys Glu Ser
115     120     125
Thr Lys Arg Asn His Leu Ser Thr Leu Glu Leu Leu Arg Ser Tyr Lys
130     135     140
Lys Asp Val Ser Phe Ser Glu Leu Thr Phe Glu Phe Ile Ser Ser Phe
145     150     155     160
Asp His Tyr Leu Gln Gln Lys Gly Tyr His Thr Asn Thr Ile Ala Lys
165     170     175
His Met Lys His Leu Lys Arg His Ile Asn Val Ala Ile Asn Lys Glu
180     185     190
Tyr Met Glu Ile Gln Lys Tyr Ala Phe Arg Lys Tyr Lys Ile Lys Ser
195     200     205
Val Glu Asn Asn His Thr His Leu Ser Pro Glu Glu Leu Gly Lys Ile
210     215     220
Glu Ser Leu Glu Leu Gly Gly Arg Phe Thr Lys Leu Glu Lys Thr Lys
225     230     235     240
Asp Ala Phe Leu Phe Cys Cys Tyr Ala Gly Leu Arg Tyr Ser Asp Phe
245     250     255
Thr Asn Leu Ser Pro Glu Asn Ile Val Lys Met His Gln Glu Thr Trp
260     265     270
Leu Ile Tyr Lys Ser Val Lys Thr Asn Thr Glu Val Arg Leu Pro Leu
275     280     285
Tyr Leu Leu Phe Glu Gly Lys Gly Ile Glu Val Leu Asn Lys Tyr Gln
290     295     300
Asp Asp Leu Ala Asp Phe Phe Lys Leu Arg Asp Asn Ser Asn Val Asn
305     310     315     320
Lys Glu Leu Leu Ile Ile Ala Lys Leu Ser Gly Leu Asn Lys Arg Ile
325     330     335
Ser Phe His Thr Ala Arg His Thr Asn Ala Thr Leu Leu Ile Tyr Ser
340     345     350
Gly Val Asn Ile Thr Thr Val Gln Lys Leu Leu Gly His Lys Ser Val
355     360     365
Lys Thr Thr Gln Val Tyr Thr Asn Ile Met Asp Ile Thr Ile Val Arg
370     375     380
Asp Leu Glu Lys Ser Lys Asn Asn Arg Lys Val Ser Tyr Met
385     390     395

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<210> 7394

<211> 156

<212> PRT

<213> B.fragilis

<400> 7394

Lys Leu Lys Pro Met Lys Lys Asn Leu Tyr Trp Met Ala Ala Ala Phe
 1 5 10 15
 Ile Thr Leu Thr Ala Val Gly Cys Thr Asn Ala Lys Lys Ala Asp Val
 20 25 30
 Ser Ala Ala Gly Ser Asp Thr Thr Gln Val Ile Asp Met His Thr Ala
 35 40 45
 Glu Thr Ser Leu Asp Tyr Tyr Gly Val Tyr Lys Gly Thr Val Pro Ala
 50 55 60
 Ala Asp Cys Pro Gly Ile Glu Leu Thr Leu Thr Lys Lys Asp Arg
 65 70 75 80
 Thr Tyr Thr Tyr His Trp Ala Tyr Ile Asp Arg Lys Asp Ala Asp Phe
 85 90 95
 Asp Glu Thr Gly Thr Phe Thr Val Lys Asp Asn Leu Leu Thr Leu Thr
 100 105 110
 Glu Lys Gly Gly Glu Val Ser Tyr Phe Lys Val Gln Glu Gly Ser Leu
 115 120 125
 Val Met Leu Asn Asn Glu Lys Gln Pro Ala Thr Gly Thr Leu Ala Asp
 130 135 140
 Ala Tyr Val Leu Lys Gln Glu Glu Val Phe Leu Asp
 145 150 155

<210> 7395

<211> 738

<212> PRT

<213> B.fragilis

<400> 7395

Thr His Phe Thr Lys Lys Tyr Ala Cys Met Gln Arg Ala Lys Lys Asn
 1 5 10 15
 Tyr Leu Ile Tyr Ala Val Met Leu Leu Leu Phe Gly Ala Leu Ile Tyr
 20 25 30
 Met Ala Ile Glu Glu Gly Asp Arg Phe Ser His His Ala Val Ala Ser
 35 40 45
 Ser Thr Val Ala Glu Asp Thr Pro Phe Thr Met Phe Cys Gln Phe Val
 50 55 60
 Thr Asp Asn Leu His His Pro Leu Ser Ile Leu Leu Ile Gln Ile Ile
 65 70 75 80
 Ala Val Leu Leu Met Val Arg Leu Phe Gly Phe Leu Phe Lys His Ile
 85 90 95
 Gly Gln Pro Gly Val Ile Gly Glu Ile Val Ala Gly Ile Val Leu Gly
 100 105 110
 Pro Ser Val Leu Gly Tyr Phe Phe Pro Asp Val Phe Gln Ala Leu Phe
 115 120 125
 Pro Pro Glu Ser Leu Thr Asn Leu Glu Leu Leu Ser Gln Val Gly Leu
 130 135 140
 Val Leu Phe Met Phe Val Ile Gly Met Glu Leu Asp Phe Ser Val Leu
 145 150 155 160
 Lys Asn Lys Ile Asn Glu Thr Leu Val Ile Ser His Ala Gly Ile Leu
 165 170 175
 Val Pro Phe Phe Leu Gly Ile Val Ala Ser Tyr Trp Ile Tyr Glu Glu
 180 185 190
 Tyr Ala Ala Ala Gln Thr Ala Phe Leu Pro Phe Ala Leu Phe Ile Gly
 195 200 205
 Ile Ser Met Ser Ile Thr Ala Phe Pro Val Leu Ala Arg Ile Ile Gln
 210 215 220
 Glu Arg Asn Met Thr Lys Thr Ser Leu Gly Thr Leu Ala Ile Ala Ser
 225 230 235 240
 Ala Ala Asn Asp Asp Val Thr Ala Trp Cys Leu Leu Ala Val Val Ile
 245 250 255

Ala	Ile	Ala	Lys	Ala	Gly	Thr	Phe	Ala	Ser	Ala	Leu	Tyr	Ala	Ile	Gly	260	265	270
Leu	Thr	Ala	Leu	Tyr	Ile	Ile	Ile	Met	Phe	Met	Val	Val	Arg	Pro	Phe	275	280	285
Leu	Lys	Lys	Val	Gly	Glu	Val	Tyr	Ala	Asn	Gln	Glu	Val	Ile	Asn	Lys	290	295	300
Thr	Phe	Val	Ala	Leu	Ile	Leu	Leu	Ile	Leu	Ile	Ile	Ser	Ser	Thr	Leu	305	310	315
Thr	Glu	Ile	Ile	Gly	Ile	His	Ala	Leu	Phe	Gly	Ala	Phe	Met	Ala	Gly	325	330	335
Val	Val	Met	Pro	Pro	Ser	Ile	Gly	Phe	Arg	Lys	Val	Met	Met	Glu	Lys	340	345	350
Val	Glu	Asp	Ile	Ala	Leu	Val	Phe	Phe	Leu	Pro	Leu	Phe	Phe	Ala	Phe	355	360	365
Thr	Gly	Leu	Arg	Thr	Glu	Ile	Gly	Leu	Ile	Asn	Ser	Pro	Ala	Leu	Trp	370	375	380
Gly	Val	Cys	Leu	Leu	Leu	Ile	Thr	Val	Ala	Val	Ala	Gly	Lys	Leu	Gly	385	390	395
Gly	Cys	Ala	Val	Ala	Ala	Arg	Leu	Val	Gly	Glu	Ser	Trp	Lys	Asp	Ser	405	410	415
Phe	Thr	Ile	Gly	Thr	Leu	Met	Asn	Thr	Arg	Gly	Leu	Met	Glu	Leu	Val	420	425	430
Ala	Leu	Asn	Ile	Gly	Tyr	Glu	Met	Gly	Val	Leu	Pro	Pro	Ser	Ile	Phe	435	440	445
Val	Ile	Leu	Val	Ile	Met	Ala	Leu	Val	Thr	Thr	Phe	Met	Thr	Thr	Pro	450	455	460
Leu	Leu	His	Leu	Val	Glu	Arg	Val	Phe	Ala	Arg	Arg	Glu	Glu	Arg	Leu	465	470	475
Ser	Ala	Lys	Leu	Lys	Leu	Val	Phe	Cys	Phe	Gly	Arg	Pro	Glu	Ser	Gly	485	490	495
Arg	Ser	Leu	Leu	Ser	Ile	Phe	Phe	Leu	Leu	Phe	Gly	Lys	Lys	Met	Lys	500	505	510
Ala	Ala	Gln	Val	Val	Ala	Ala	His	Phe	Thr	Val	Gly	Thr	Asp	Leu	Asn	515	520	525
Pro	Leu	Asn	Ala	Glu	Gln	Tyr	Ala	Arg	Asp	Ser	Phe	Ser	Leu	Val	Asp	530	535	540
Glu	Lys	Ala	Ser	Glu	Leu	Gly	Leu	Ser	Val	Glu	Asn	Arg	Tyr	Arg	Val	545	550	555
Thr	Asp	Lys	Leu	Val	Gln	Asp	Met	Ile	Arg	Leu	Ala	Arg	Lys	Glu	Arg	565	570	575
Pro	Asp	Met	Phe	Leu	Leu	Gly	Ala	Gly	Ser	Lys	Tyr	Arg	Pro	Asp	Thr	580	585	590
Ala	Gly	Ser	Asn	Gly	Val	Leu	Trp	Leu	Ser	Leu	Phe	Arg	Asp	Lys	Ile	595	600	605
Asp	Asp	Val	Met	Glu	Gln	Val	Lys	Cys	Pro	Val	Ala	Val	Phe	Val	Asn	610	615	620
Arg	Gly	Tyr	Ser	Gly	Ser	Ser	Pro	Val	Ser	Phe	Val	Leu	Gly	Gly	Val	625	630	635
Ile	Asp	Ala	Phe	Leu	Leu	Thr	Tyr	Leu	Glu	Ser	Met	Leu	Glu	Gly	Gly	645	650	655
Ala	Gln	Val	His	Leu	Phe	Leu	Phe	Asp	Thr	Asp	Asp	Glu	Ala	Phe	Arg	660	665	670
Gln	Ser	Thr	Asp	Pro	Ile	Leu	Ala	Lys	Tyr	Ser	Ser	Gln	Ile	Arg	Thr	675	680	685
Arg	Pro	Phe	Ser	Gly	Ala	Ala	Asn	Leu	Thr	Ser	Ala	Ala	Lys	Asp	Gly	690	695	700
Leu	Leu	Val	Met	Ser	His	Leu	Ser	Tyr	Thr	Lys	Leu	Ser	Glu	Glu	Glu	705	710	715
Glu	Val	Phe	Arg	Asp	Leu	Pro	Ser	Leu	Leu	Val	Ile	Arg	Arg	Pro	Lys	720		

725

730

735

Lys Gly

<210> 7396
 <211> 117
 <212> PRT
 <213> B.fragilis

<400> 7396
 Asn Glu Gly Thr Thr Ala Ala Gly Glu Asp Ala Asn Leu Glu Gln Thr
 1 5 10 15
 Arg Leu Gln Gln Gln Ser Leu Asn Glu Gln Met Leu Leu Glu Leu Thr
 20 25 30
 Arg Ala Ala Asn Asn Leu Asp Glu Ala Lys Leu Glu Ser Glu Leu Ala
 35 40 45
 Asp Arg Ser Leu Gln Gln Ala Glu Glu Asn Arg Arg Val Ser Lys Asn
 50 55 60
 Gln Tyr Glu Val Gly Leu Glu Thr Leu Ser Asp His Leu Glu Gly Gln
 65 70 75 80
 Ala Leu Trp Gln Gln Ala Tyr Glu Thr Lys Val Asn Ala His Phe Gln
 85 90 95
 Leu Tyr Leu Asn Tyr Val Ala Tyr Leu Lys Ala Ala Gly Ile Leu Tyr
 100 105 110
 Asn Lys Ile Asn Leu
 115

<210> 7397
 <211> 182
 <212> PRT
 <213> B.fragilis

<400> 7397
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr
 180

<210> 7398

<211> 83
 <212> PRT
 <213> B.fragilis

<400> 7398

Val	Pro	Glu	Gln	Gln	Lys	Val	Ala	Gln	Asp	Phe	Ala	Met	Ser	Glu	Phe
1			5					10						15	
Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Met
		20						25				30			
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu
	35					40					45				
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu
	50					55				60					
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser
65					70					75				80	
Ser	Ala	Arg													

<210> 7399
 <211> 358
 <212> PRT
 <213> B.fragilis

<400> 7399

Arg	Leu	Lys	Lys	Gln	Asn	Lys	Arg	Met	Thr	Gly	Ile	Glu	Lys	Thr	Val
1			5					10						15	
Thr	Asn	Arg	Ser	Gly	Ala	Gly	Ala	Leu	Val	Leu	Cys	Thr	Ile	Leu	Phe
		20						25				30			
Cys	Leu	Cys	Ala	Cys	Thr	Glu	Asp	Ala	Ser	Tyr	Thr	Ala	Gly	Val	Trp
	35					40					45				
Tyr	Arg	Arg	Ser	Asp	Phe	Asp	Gly	Val	Ala	Arg	Thr	Asp	Ala	Ala	Gly
	50					55				60					
Phe	Thr	Ile	Gly	Asn	Lys	Gly	Tyr	Ile	Cys	Gly	Gly	Tyr	Asn	Gly	Lys
65				70					75					80	
Thr	Thr	Arg	Leu	Ala	Asp	Thr	Trp	Glu	Tyr	Asp	Ile	Asp	Asn	Asp	Trp
			85					90					95		
Trp	Thr	Gln	Arg	Ala	Asp	Met	Pro	Gly	Thr	Val	Arg	Asn	Ala	Ala	Thr
		100						105					110		
Gly	Phe	Pro	Val	Gly	Asn	Lys	Gly	Tyr	Ile	Thr	Thr	Gly	Tyr	Asn	Pro
	115						120					125			
Asp	Gln	Lys	Tyr	Leu	Ala	Asp	Thr	Trp	Glu	Tyr	Asp	Pro	Glu	Thr	Asn
	130					135					140				
Thr	Trp	Arg	Gln	Met	Asp	Asp	Phe	Lys	Gly	Gly	Ala	Arg	Tyr	Tyr	Ala
145				150						155					160
Leu	Gly	Phe	Gly	Ile	Asp	Asn	Tyr	Gly	Tyr	Val	Gly	Thr	Gly	Tyr	Asn
			165					170						175	
Asp	Asn	Tyr	Leu	Lys	Asp	Phe	Tyr	Arg	Phe	Asp	Pro	Thr	Ala	Ala	Ala
		180					185					190			
Gly	Ser	Gln	Trp	Thr	Ile	Val	Asn	Gly	Phe	Gly	Gly	Gln	Lys	Arg	Gln
	195						200					205			
Gly	Ala	Thr	Ala	Phe	Val	Ile	Asn	Gly	Lys	Ala	Tyr	Val	Cys	Gly	Gly
	210					215					220				
Gln	Asn	Asn	Asn	Ser	Asp	Val	Ser	Asp	Phe	Trp	Arg	Phe	Asp	Pro	Ser
225				230					235						240
Ala	Ala	Thr	Pro	Trp	Thr	Gln	Leu	Arg	Asp	Ile	Ala	Asn	Thr	Ser	Asp
			245						250					255	
Asp	Asp	Tyr	Asp	Asp	Asp	Tyr	Thr	Ser	Ile	Val	Arg	Ser	Tyr	Gly	Val
		260						265					270		
Ser	Phe	Val	Ile	Asp	Gly	Lys	Ala	Tyr	Leu	Thr	Leu	Gly	Ser	Thr	Ala

275 280 285
 Gly Gly Ser Tyr Tyr Ser Asn Tyr Trp Ile Tyr Asp Pro Glu Thr Asp
 290 295 300
 Leu Trp Glu Gly Asp Asp Leu Thr Ala Phe Glu Gly Ser Thr Arg Ile
 305 310 315 320
 His Ala Val Cys Phe Ser Thr Gly Thr Arg Gly Ile Ile Ala Thr Gly
 325 330 335
 Gly Ser Gly Ser Ser Ser Tyr Phe Asp Asp Thr Trp Glu Leu Lys Pro
 340 345 350
 Tyr Glu Tyr Glu Glu Glu
 355

<210> 7400
 <211> 402
 <212> PRT
 <213> B.fragilis

<400> 7400

Pro Met Lys Arg Asn Leu Ile Leu Leu Leu Thr Leu Cys His Ser Thr
 1 5 10 15
 Leu Leu Ile Tyr Ser Gln Asn Thr Thr Asn Ser Pro Thr Ser Met Phe
 20 25 30
 Gly Leu Gly Glu Leu Ser Thr Gly Glu Gly Gly Gln Tyr Ser Gly Leu
 35 40 45
 Gly Gly Ala Gly Ile Ala Leu Gln Ser Tyr Asn Phe Leu Asn Thr Ala
 50 55 60
 Asn Pro Ala Ser Leu Thr Ala Ile Glu Gly Gln Arg Phe Leu Ile Asp
 65 70 75 80
 Ala Gly Val Met Gly Ala Tyr Lys Val Tyr Thr Gln Thr Gly Thr Ser
 85 90 95
 Asn His Ser Leu Val Gly Asn Leu Asn Asn Leu Ser Ile Gly Cys Arg
 100 105 110
 Ile Thr Pro Arg Trp Tyr Gly Ala Val Phe Met Ala Pro Val Ser Ser
 115 120 125
 Val Gly Tyr Ala Ile Thr Leu Asp Gln Asp Ile Thr Gly Thr Gly Ser
 130 135 140
 Ser Thr Val Ser Ser Leu Phe Glu Gly Glu Gly Leu Ser Lys Met
 145 150 155 160
 Gly Ile Ser Thr Ala Tyr Arg Leu Phe Lys Gly Phe Ser Val Gly Ala
 165 170 175
 Asn Leu Ser Tyr Val Thr Gly Thr Ile Lys Gln Thr Glu Thr Gln Gly
 180 185 190
 Ser Ile Asn Val Glu Glu Ser Ser Tyr Lys His Ala Phe Tyr Ala Asp
 195 200 205
 Phe Gly Leu Gln Tyr Lys Phe Ser Leu Ser Arg Asn Lys Tyr Leu Val
 210 215 220
 Ala Gly Ala Val Tyr Gly Tyr Ser Gln Asp Leu Ala Gln Asp Asn Thr
 225 230 235 240
 Leu Ser Val Ser Ser Thr Ser Gly Asn Glu Ser Ile Asp Glu Ser Gln
 245 250 255
 Arg His Val Arg Gln Cys Leu Pro Gln Phe Val Gly Ala Gly Leu Ala
 260 265 270
 Tyr Asn Ser Pro His Trp Thr Leu Thr Val Glu Tyr Lys Tyr Thr Asp
 275 280 285
 Trp Ser Arg Met Lys Ser Ser Gln Ser Asn Val Arg Phe Glu Asn Gln
 290 295 300
 His Arg Leu Ser Ala Gly Thr Ala Tyr Thr Ala Gly Asn Ile Tyr Arg
 305 310 315 320
 Asn Pro Val Lys Leu Leu Leu Gly Ala Gly Val Ser Asn Ser Tyr Ile

	325		330		335										
Val	Ile	Gln	Lys	Lys	Ala	Thr	Asn	Tyr	Tyr	Val	Ser	Ala	Gly	Ser	
	340						345					350			
Asn	Phe	Thr	Leu	Tyr	Asn	Gly	Asn	Val	Leu	Ser	Leu	Gly	Val	Lys	Tyr
	355						360					365			
Ser	Asp	Gln	Leu	His	Leu	Pro	Asn	Gly	Met	Gln	Arg	Glu	Arg	Gly	Val
	370						375				380				
Thr	Leu	Phe	Phe	Asn	Phe	Thr	Phe	Ser	Glu	Arg	Thr	Tyr	Arg	Ala	Lys
	385				390					395					400
Ile	Gln														

<210> 7401
 <211> 466
 <212> PRT
 <213> B.fragilis

<400> 7401

Ile	Val	Pro	Ile	Ser	Arg	Ser	Phe	Phe	Tyr	Arg	Glu	Asn	Lys	Ser	Ser
1			5						10					15	
Ser	Phe	Ala	Ala	Lys	Met	Ile	Arg	Phe	Met	Lys	Arg	Lys	Asn	Leu	Ser
		20						25					30		
Leu	Phe	Phe	Ile	Thr	Leu	Phe	Ile	Ser	Leu	Leu	Ala	Ser	Cys	Arg	Asp
		35					40					45			
Glu	Leu	Ser	Thr	Ala	Gly	Gly	Lys	Trp	Val	Glu	Ser	Ser	Leu	Arg	Thr
	50				55					60					
Ile	Gln	Thr	Asp	Thr	Cys	Thr	Val	Arg	Leu	Ser	Thr	Ile	Leu	Ser	Asp
65					70				75						80
Ser	Leu	Ala	Thr	Ser	Gly	Asp	Thr	Val	Cys	Gln	Ile	Gly	Thr	Ile	Asp
				85				90						95	
Asp	Pro	Val	Trp	Gly	Lys	Ile	Glu	Ala	Ala	Phe	Tyr	Val	Glu	Tyr	Asp
		100					105						110		
Val	Pro	Thr	Val	Ser	Phe	Ser	Glu	Asn	Ala	Asp	Tyr	Arg	Phe	Asp	Ser
		115					120					125			
Ile	Thr	Ile	Arg	Phe	Tyr	Ser	Ser	Gly	Asn	Tyr	Leu	Gly	Asp	Thr	Leu
	130					135					140				
Ser	Pro	Gln	Arg	Ile	Ser	Leu	His	Ser	Leu	Ser	Glu	Asn	Leu	Ser	Leu
145					150					155					160
Asp	Glu	Gly	Tyr	Leu	Tyr	Thr	Thr	Ser	Lys	Val	Ser	Tyr	His	Ser	Thr
				165					170					175	
Pro	Leu	Ala	Ser	Phe	Thr	Phe	Thr	Pro	Thr	Pro	Gly	Glu	Thr	Ile	Arg
		180					185					190			
Glu	His	Glu	Ile	Arg	Leu	Pro	Asp	Glu	Trp	Gly	Val	Glu	Trp	Phe	Glu
	195						200					205			
His	Phe	Gln	Ala	Gly	Ser	Arg	Glu	Met	Glu	Ser	Gln	Glu	Tyr	Phe	Arg
	210					215					220				
Asp	Tyr	Phe	Lys	Gly	Ile	Ala	Phe	Ile	Pro	Glu	Glu	Gly	Gly	Asn	Cys
225					230					235					240
Val	Asn	Gly	Phe	Met	Val	Asn	Asp	Ser	Ser	Leu	Cys	Ile	Thr	Leu	Tyr
				245					250					255	
Tyr	His	Gln	Thr	Glu	Thr	Asp	Ala	Thr	Glu	Leu	Ser	Ala	Asp	Phe	Leu
		260					265						270		
Pro	Asn	Ser	Asp	Leu	Arg	Phe	Asn	Gln	Val	Ser	Cys	Asp	Arg	Ser	Arg
		275					280					285			
Thr	Ala	Leu	Ser	Ser	Leu	Gln	Ser	Gly	Leu	Asn	Asn	Gly	Leu	Pro	Ser
	290					295					300				
Glu	Lys	Ser	Glu	His	Gln	Ser	Tyr	Leu	Gln	Gly	Leu	Thr	Gly	Met	Tyr
305					310				315						320
Ile	Asn	Ile	Asp	Phe	Pro	Phe	Leu	Asn	Asp	Leu	Arg	Ala	Glu	Gly	Arg

325 330 335
 Leu Val Thr Ile Glu Ser Ala Leu Leu Arg Leu Tyr Pro Val Lys Gly
 340 345 350
 Thr Tyr Gly Lys Gln Tyr Pro Leu Pro Glu Ser Leu Thr Leu Tyr Thr
 355 360 365
 Ala Asp Glu Asn Asn Val Thr Glu Asp Val Val Thr Asp Ile Ser Gly
 370 375 380
 Ser Ser Val Gln Thr Gly Ser Leu Val Thr Asp Glu Met Met Gly Glu
 385 390 395 400
 Asp Thr Tyr Tyr Ser Phe Asp Ile Thr Ser Phe Leu Gln Ser Asn Leu
 405 410 415
 Gly Thr Val Gly Tyr Asn Arg Lys Ile Leu Gln Leu Met Leu Pro Asp
 420 425 430
 Asn Leu Phe Phe Thr Thr Leu Asn Gly Val Val Phe Gly Asp Ala Gly
 435 440 445
 His Pro Asp Ser Asn Pro Val Lys Leu Thr Leu Leu Tyr Lys Thr Tyr
 450 455 460
 Asn Pro
 465

<210> 7402
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 7402
 Gly Arg Arg Ala Arg Pro Ile Ala Ala Cys Thr Met Gly Glu Lys Thr
 1 5 10 15
 Val Asp Glu Glu Val Pro Val Leu Phe Glu Tyr Pro Leu Met Asn Asp
 20 25 30
 Val Met Arg Ile Val Lys Glu Glu Glu Pro Glu Ile Leu Ser Gln Ser
 35 40 45
 Tyr Asp Met Asp Ala Ser Met Thr Leu Arg Ile Arg Gln Ser Ala Met
 50 55 60
 Pro Arg Leu Arg Ser Arg Leu Glu Lys Val Glu Thr Ala Arg Ile Thr
 65 70 75 80
 Asp Glu Gln Glu Gly Asn Gly
 85

<210> 7403
 <211> 419
 <212> PRT
 <213> B.fragilis

<400> 7403
 Ser Ala Val Leu Met Ala Thr Ile Lys Pro Phe Lys Gly Ile Arg Pro
 1 5 10 15
 Pro Gln Asp Leu Val Glu Gln Val Ala Ser Arg Pro Tyr Asp Val Leu
 20 25 30
 Asn Ser Glu Glu Ala Arg Ala Glu Ala Ala Gly Asn Asp Lys Ser Leu
 35 40 45
 Tyr His Ile Ile Lys Pro Glu Ile Asp Phe Pro Val Gly Thr Asp Glu
 50 55 60
 His Asp Glu Lys Val Tyr Ala Lys Ala Ala Glu Asn Phe Arg Leu Phe
 65 70 75 80
 Arg Asp Lys Gly Trp Leu Val Gln Asp Asp Lys Glu Asn Tyr Tyr Ile
 85 90 95
 Tyr Ala Gln Thr Met Asn Gly Lys Thr Gln Tyr Gly Leu Val Val Gly
 100 105 110

Ala Tyr Val Pro Asp Tyr Met Asn Gly Val Ile Lys Lys His Glu Leu
 115 120 125
 Thr Arg Arg Asp Lys Glu Glu Asp Arg Met Lys His Val Arg Val Asn
 130 135 140
 Asn Ala Asn Ile Glu Pro Val Phe Phe Ala Tyr Pro Asp Asn Ala Val
 145 150 155 160
 Leu Asp Ala Ile Ile Arg Lys Tyr Thr Ala Gln Lys Pro Val Tyr Asp
 165 170 175
 Phe Ile Ala Pro Gly Asp Gly Phe Gly His Thr Phe Trp Val Ile Asp
 180 185 190
 Asn Ser Glu Asp Ile Ala Val Ile Thr Lys Glu Phe Ala Ala Met Pro
 195 200 205
 Ala Leu Tyr Ile Ala Asp Gly His His Arg Ser Ala Ala Ala Ala Leu
 210 215 220
 Val Gly Ala Glu Lys Ala Lys Gln Asn Pro Asn His Arg Gly Asp Glu
 225 230 235 240
 Glu Tyr Asn Tyr Phe Met Ala Val Cys Phe Pro Ala Asn Gln Leu Thr
 245 250 255
 Ile Ile Asp Tyr Asn Arg Val Val Lys Asp Leu Asn Gly Leu Thr Pro
 260 265 270
 Ala Glu Phe Leu Thr Ala Leu Gly Lys Asn Phe Glu Ile Glu Glu Lys
 275 280 285
 Gly Lys Glu Ile Tyr Lys Pro Asn Ala Leu His Asn Phe Ala Leu Tyr
 290 295 300
 Leu Asp Gly Lys Trp Tyr Ser Leu Thr Ala Lys Pro Gly Thr Tyr Asp
 305 310 315 320
 Asp Asn Asp Pro Ile Gly Val Leu Asp Val Thr Ile Ser Ser Asn Leu
 325 330 335
 Ile Leu Asp Glu Ile Leu Gly Ile Lys Asp Leu Arg Ser Asp Arg Arg
 340 345 350
 Ile Asp Phe Val Gly Gly Ile Arg Gly Leu Gly Glu Leu Ser Arg Arg
 355 360 365
 Val Asp Ser Gly Glu Met Lys Val Ala Leu Ala Leu Tyr Pro Val Ser
 370 375 380
 Met Lys Gln Leu Met Asp Ile Ala Asp Thr Gly Asn Ile Met Pro Pro
 385 390 395 400
 Lys Thr Thr Trp Phe Glu Pro Lys Leu Arg Ser Gly Leu Val Ile His
 405 410 415
 Glu Leu Glu

<210> 7404

<211> 211

<212> PRT

<213> B.fragilis

<400> 7404

Asn Met Ser Gln Leu Phe Ser Lys Lys Asn Lys Glu Val Phe Ala Thr
 1 5 10 15
 Pro Leu Gly Leu Asn Asn Pro Val Thr Val Gln Val Leu Gly Ile Cys
 20 25 30
 Ser Ala Leu Ala Val Thr Ala Lys Leu Glu Pro Ala Ile Val Met Gly
 35 40 45
 Leu Ser Val Thr Val Ile Thr Ala Phe Ser Asn Val Val Ile Ser Leu
 50 55 60
 Leu Arg Lys Thr Ile Pro Asn Arg Ile Arg Ile Ile Val Gln Leu Val
 65 70 75 80
 Val Val Ala Ala Leu Val Thr Ile Val Ser Glu Val Leu Lys Ala Phe
 85 90 95

Ala Tyr Asp Val Ser Val Gln Leu Ser Val Tyr Val Gly Leu Ile Ile
 100 105 110
 Thr Asn Cys Ile Leu Met Gly Arg Leu Glu Ala Phe Ala Met Ala Asn
 115 120 125
 Gly Pro Trp Glu Ser Phe Leu Asp Gly Val Gly Asn Gly Leu Gly Tyr
 130 135 140
 Ala Lys Ile Leu Ile Ile Val Ala Phe Phe Arg Glu Leu Leu Gly Ser
 145 150 155 160
 Gly Thr Leu Leu Asn Phe Arg Ile Ile Pro Glu Ser Phe Tyr Lys Met
 165 170 175
 Gly Tyr Ile Asn Asn Gly Leu Met Leu Met Pro Pro Met Ala Leu Ile
 180 185 190
 Ile Cys Ala Cys Ile Ile Trp Tyr Gln Arg Ser Arg Cys Lys Glu Leu
 195 200 205
 Gln Glu Lys
 210

<210> 7405
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 7405
 Phe Val Ala Asn Ser Phe Cys Val Pro Asp Tyr Ser Asn Met Tyr Val
 1 5 10 15
 Phe Pro Tyr Leu Cys Arg Arg Ser Asn Tyr Tyr Gln Glu Thr Asp Met
 20 25 30
 Gly Arg Lys Glu Glu Tyr Lys Leu Gln Asn Glu Gln Phe Met Gln Thr
 35 40 45
 Leu Arg Thr Glu Ala Asp Val His Glu Leu Pro Cys Gly Ile Leu Tyr
 50 55 60
 Lys Val Leu Glu Glu Gly Thr Gly Ala Ala Thr Pro Arg Ser Asn Ser
 65 70 75 80
 Val Val Ser Val His Tyr Lys Gly Thr Leu Ile Asn Gly Arg Glu Phe
 85 90 95
 Asp Asn Ser Trp Lys Arg Asn Cys Pro Glu Ala Phe Arg Leu Asn Glu
 100 105 110
 Val Ile Glu Gly Trp Gln Ile Ala Leu Gln Lys Met Arg Val Gly Asp
 115 120 125
 His Trp Ile Val Tyr Ile Pro Tyr Asn Met Gly Tyr Gly Thr Arg Thr
 130 135 140
 Ser Gly Pro Ile Pro Ala Phe Ser Thr Leu Ile Phe Glu Val Gln Leu
 145 150 155 160
 Leu Gly Ile Ala

<210> 7406
 <211> 429
 <212> PRT
 <213> B.fragilis

<400> 7406
 Ser Lys Lys Asn Lys Thr Met Thr Ser Leu Ile Leu Ala Ser Ile Gly
 1 5 10 15
 Val Phe Leu Val Val Ile Ile Leu Leu Val Ile Ile Leu Leu Val Ala
 20 25 30
 Lys Ser Tyr Leu Ser Pro Ser Gly Glu Val Thr Ile Thr Met Asn Gly
 35 40 45
 Glu Gln Gln Leu Lys Thr Ser Gln Gly Gly Thr Leu Leu Gly Thr Leu

50 55 60
 Ser Ala Asn Asn Val Phe Leu Ser Ser Ala Cys Gly Gly Lys Gly Ser
 65 70 75 80
 Cys Gly Gln Cys Arg Cys Gln Val Leu Glu Gly Gly Gly Glu Ile Leu
 85 90 95
 Pro Thr Glu Thr Gly Phe Phe Ser Arg Lys Glu Gln Ala Asp His Trp
 100 105 110
 Arg Leu Gly Cys Gln Val Lys Val Lys Gln Asp Met Ser Ile Lys Ile
 115 120 125
 Asp Glu Ser Ile Leu Gly Val Lys Glu Trp Glu Cys Glu Val Ile Ser
 130 135 140
 Asn Lys Asn Val Ala Thr Phe Ile Lys Glu Phe Ile Val Ala Leu Pro
 145 150 155 160
 Pro Gly Glu His Met Asp Phe Val Pro Gly Ser Tyr Ala Gln Ile Lys
 165 170 175
 Ile Pro Thr Phe Ser Met Asp Tyr Asp Lys Asp Ile Asp Lys Ser Leu
 180 185 190
 Ile Gly Asp Glu Tyr Leu Pro Ala Trp Glu Lys Phe Gly Leu Leu Gly
 195 200 205
 Leu Lys Cys Arg Asn Asp Glu Pro Thr Ile Arg Ala Tyr Ser Met Ala
 210 215 220
 Asn Tyr Pro Ala Glu Gly Asp Arg Ile Met Leu Thr Val Arg Ile Ala
 225 230 235 240
 Thr Pro Pro Phe Lys Pro Lys Asp Gln Gly Pro Gly Phe Met Asp Val
 245 250 255
 Met Pro Gly Ile Ala Ser Ser Tyr Ile Phe Thr Leu Lys Pro Gly Asp
 260 265 270
 Lys Val Thr Met Ser Gly Pro Tyr Gly Asp Phe His Pro Ile Leu Asp
 275 280 285
 Ser Lys Asn Glu Met Met Trp Ile Gly Gly Gly Ala Gly Met Ala Pro
 290 295 300
 Leu Arg Ala Gln Ile Met His Leu Thr Lys Thr Leu His Ile Thr Asp
 305 310 315 320
 Arg Thr Met Asn Tyr Phe Tyr Gly Ala Arg Ala Leu Asn Glu Val Phe
 325 330 335
 Tyr Leu Glu Asp Phe Leu Gln Ile Glu Lys Asp Phe Pro Asn Phe Lys
 340 345 350
 Phe His Leu Ala Leu Asp Arg Pro Asp Pro Ala Ala Asp Ala Ala Gly
 355 360 365
 Val Lys Tyr Thr Ala Gly Phe Val His Asn Val Ile Tyr Glu Thr Tyr
 370 375 380
 Leu Lys Asn His Glu Ala Pro Glu Asp Ile Glu Tyr Tyr Met Cys Gly
 385 390 395 400
 Pro Gly Pro Met Ser Lys Ala Val Glu Lys Met Leu Asp Asp Leu Gly
 405 410 415
 Val Pro Ser Lys Asn Leu Met Phe Asp Asn Phe Gly Gly
 420 425

<210> 7407

<211> 152

<212> PRT

<213> B.fragilis

<400> 7407

Lys Lys Ile Asp Arg Met Ala Phe Glu Ala Thr Lys Arg Glu Trp Ser
 1 5 10 15
 Glu Leu Tyr Val Phe Phe Arg Leu Leu Ala Asp Gly Lys Val Ser Leu
 20 25 30
 Gly Thr Pro Gln Ala Lys Lys Glu Asp Glu Lys Tyr Arg Pro Ile Ala

35 40 45
 Met Ile Gln Arg Glu Glu His Asp Gly Thr Arg Arg Tyr Tyr Ile Glu
 50 55 60
 Glu Glu Val Ile Arg Met Glu Gly Glu Lys Val Glu Lys Ser Ile Pro
 65 70 75 80
 Arg Glu Asp Phe Ala Thr Val Ala Asp Leu Ile Leu Asp Ala Ile Lys
 85 90 95
 Asn Ser Ser Ala Asp Glu Val Thr Ser Pro Asp Gly Val Glu Glu Phe
 100 105 110
 Leu Asp Glu Ala Gly Ile Phe Asp Leu Glu Ala Arg Thr Glu Asp Arg
 115 120 125
 Thr Asp Phe Ser Ile Ala Phe Trp His Pro Glu Ala Pro Leu Ala Gly
 130 135 140
 Cys Leu Arg His Gly Pro Gly Glu
 145 150

<210> 7408

<211> 471

<212> PRT

<213> B.fragilis

<400> 7408

Ser Phe Gly Asp His His Lys Arg Asn Cys Phe Arg Val Val Arg Lys
 1 5 10 15
 Gln Phe Phe Phe Ile Phe Val Ser Leu Phe Lys Asn Val Glu Lys Thr
 20 25 30
 Met Asn Gly Leu Lys Asp Ile Leu Glu Arg Leu Lys Ile Glu Gln Leu
 35 40 45
 Asn Pro Met Gln Glu Ala Ser Val Glu Ala Phe Asp Lys Gly Gly Glu
 50 55 60
 Asp Leu Ile Leu Leu Ser Pro Thr Gly Ser Gly Lys Thr Leu Ala Phe
 65 70 75 80
 Leu Leu Pro Leu Val Gly Ser Leu Lys Ala Asp Val Lys Gly Val Gln
 85 90 95
 Ala Val Val Leu Val Pro Ser Arg Glu Leu Ala Leu Gln Ile Glu Gln
 100 105 110
 Val Phe Lys Ala Met Gly Thr Glu Phe Lys Ala Met Ser Cys Tyr Gly
 115 120 125
 Gly Arg Pro Ala Met Glu Glu His Arg Thr Met Lys Gly Met Gln Pro
 130 135 140
 Ala Val Ile Ile Gly Thr Pro Gly Arg Met Asn Asp His Leu Ser Lys
 145 150 155 160
 Gln Asn Phe Asp Ala Ser Thr Val Ser Leu Leu Val Ile Asp Glu Phe
 165 170 175
 Asp Lys Cys Leu Glu Phe Gly Phe Gln Glu Glu Met Ala Thr Val Ile
 180 185 190
 Gly Gln Leu Pro Asp Leu Lys Arg Arg Phe Leu Thr Ser Ala Thr Asp
 195 200 205
 Ala Glu Glu Ile Pro Gln Phe Thr Gly Leu Asn Arg Thr Ile Lys Leu
 210 215 220
 Asp Phe Leu Thr Asn Asp Val Glu Glu Ser Arg Leu Arg Leu Met Lys
 225 230 235 240
 Val Val Ser Pro Ala Lys Asp Lys Ile Glu Thr Leu Tyr Lys Leu Leu
 245 250 255
 Cys Thr Leu Gly Ser Ser Ser Ser Ile Val Phe Cys Asn His Arg Asp
 260 265 270
 Ala Val Asp Arg Val Ser Ala Leu Leu Thr Glu Lys Gly Val Ser Asn
 275 280 285
 Glu Arg Phe His Gly Gly Met Glu Gln Pro Asp Arg Glu Arg Ala Leu

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      290              295              300
Tyr Lys Phe Arg Asn Gly Ser Cys Pro Val Leu Val Ser Thr Asp Leu
305              310              315              320
Ala Ala Arg Gly Leu Asp Ile Pro Glu Val Glu His Ile Ile His Tyr
              325              330              335
His Leu Pro Val Asn Glu Glu Ala Phe Thr His Arg Asn Gly Arg Thr
              340              345              350
Ala Arg Trp Asp Ala Thr Gly Thr Ser Tyr Leu Ile Leu Asn Pro Glu
              355              360              365
Glu His Val Pro Asp Tyr Ile Pro Ser Glu Leu Glu Ile Phe Asp Leu
              370              375              380
Pro Glu Asn Thr Pro Arg Pro Ala Lys Pro Gln Trp Val Thr Ile Tyr
              385              390              395              400
Ile Gly Lys Gly Lys Lys Asp Lys Leu Ser Lys Ile Asp Ile Ala Gly
              405              410              415
Phe Leu Tyr Lys Lys Gly Asn Leu Ala Arg Glu Asp Val Gly Ala Ile
              420              425              430
Asp Val Lys Asp His Tyr Ala Phe Val Ala Val Arg Arg Pro Lys Met
              435              440              445
Lys Gln Leu Leu Thr Leu Ile Arg Gly Glu Lys Ile Lys Gly Met Lys
              450              455              460
Thr Val Ile Glu Glu Ala Asp
465              470

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<210> 7409
 <211> 183
 <212> PRT
 <213> B.fragilis

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<400> 7409
Tyr Gly Leu Trp His Thr Tyr Gln Trp Pro Asp Ser Gly Phe Phe Asn
1              5              10              15
Phe Asp Phe Arg Gly Thr Ile Thr Gly Tyr Ser Leu Asn His Gln Lys
              20              25              30
Lys Ile Pro Asp Ile Met Thr Glu Asp Thr Tyr Lys Thr Ile Thr Glu
              35              40              45
Val Ser Glu Gly Thr Tyr Thr Glu Lys Arg Ser Lys Phe Ile Ala Ile
              50              55              60
Ala Leu Pro Val Arg Thr Leu Glu Glu Ile Lys Val His Leu Glu Ala
65              70              75              80
Tyr Gln Lys Lys Tyr Tyr Asp Ala Arg His Val Cys Tyr Ala Tyr Met
              85              90              95
Leu Gly His Glu Arg Lys Asn Phe Arg Ala Asn Asp Asn Gly Glu Pro
              100              105              110
Ser Gly Thr Ala Gly Lys Pro Ile Leu Gly Gln Ile Asn Ser Thr Glu
              115              120              125
Leu Thr Asp Ile Leu Ile Met Trp Val Arg Tyr Ser Lys Gly Ile Lys
              130              135              140
Leu Gly Thr Ser Gly Leu Ile Val Ala Tyr Arg Ala Ala Ala Arg Gly
145              150              155              160
Pro Ser Leu His Ala Pro Trp Glu Arg Lys Leu Trp Thr Arg Lys Tyr
              165              170              175
Pro Tyr Phe Ser Ser Ile Leu
              180

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<210> 7410
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 7410

Glu Ser Lys Arg Lys Ile Met Glu Gln Leu Leu Ser Leu Phe Val Arg
 1 5 10 15
 Ser Ile Phe Val Asp Asn Met Ile Phe Ala Phe Phe Leu Gly Met Cys
 20 25 30
 Ser Tyr Leu Ala Val Ser Lys Asn Val Lys Thr Ala Val Gly Leu Gly
 35 40 45
 Ile Ala Val Thr Phe Val Leu Val Val Thr Leu Pro Val Asn Tyr Leu
 50 55 60
 Leu Gln Thr Lys Val Leu Ala Ala Asn Ala Ile Ile Glu Gly Val Asp
 65 70 75 80
 Leu Ser Phe Leu Ser Phe Ile Leu Phe Ile Gly Arg Met Ala Gly Phe
 85 90 95
 Gly Gln Leu Val Glu Met Val Val Glu Arg Phe Ser Pro Ser Leu Tyr
 100 105 110
 Ala Ser Leu Gly Ile Phe Leu Pro Leu Ile Ala Val Asn Cys Ala Ile
 115 120 125
 Met Gly Ala Ser Leu Phe Met Gln Gln Arg Ile Thr Met Asp Pro Ser
 130 135 140
 Asn Pro Gln Ala Ile Thr Gly Val Gly Ser Ala Val Val Tyr Ala Leu
 145 150 155 160
 Gly Ser Gly Ile Gly Trp Leu Leu Ala Ile Val Gly Leu Ala Ala Ile
 165 170 175
 Arg Glu Lys Met Ala Tyr Ser Asp Val Pro Ala Pro Leu Lys Gly Leu
 180 185 190
 Gly Ile Thr Phe Ile Thr Val Gly Leu Met Ala Met Ala Phe Met Cys
 195 200 205
 Phe Ser Gly Leu Lys Leu
 210

<210> 7411

<211> 84

<212> PRT

<213> B.fragilis

<400> 7411

Lys Leu Arg Gly Pro Phe Gln Pro Arg Gly Glu Asp Gly Ala Glu Ile
 1 5 10 15
 Ala Gly Ala Ala Phe Gln Asn Glu Phe Ser Gly Lys Lys Val Leu Lys
 20 25 30
 Asp Gly Gln Val Ala Leu Ala Val Glu Lys Asn Gly Lys Val Thr Asp
 35 40 45
 Pro Ala Tyr Gln Val Asp Gly Ile Ser Gly Gly Thr Ile Thr Ser Lys
 50 55 60
 Gly Val Asp Ala Met Ile Lys Ala Cys Leu Ser Gln Tyr Asp Lys Phe
 65 70 75 80
 Leu Thr Asn Asn

<210> 7412

<211> 365

<212> PRT

<213> B.fragilis

<400> 7412

Arg Asn Cys Ile Thr Lys Asn Thr His Gln Met Lys Lys His Asn Phe
 1 5 10 15
 Ser Ala Gly Pro Ser Ile Leu Pro Arg Glu Val Ile Glu Glu Thr Ala

20 25 30
 Lys Ala Ile Leu Asp Phe Asn Gly Ser Gly Leu Ser Val Leu Glu Val
 35 40 45
 Ser His Arg Gly Lys Asp Phe Gln Ala Val Met Asp Glu Ala Val Ala
 50 55 60
 Leu Phe Lys Glu Ile Leu Asn Ile Pro Glu Gly Tyr Ser Val Leu Phe
 65 70 75 80
 Leu Gly Gly Gly Ala Ser Met Gln Phe Cys Met Val Pro Tyr Asn Phe
 85 90 95
 Leu Glu Lys Lys Ala Ala Tyr Leu Asn Thr Gly Val Trp Ala Lys Lys
 100 105 110
 Ala Met Lys Glu Ala Lys Gly Phe Gly Glu Val Val Glu Val Ala Ser
 115 120 125
 Ser Ala Asp Ala Asn Tyr Thr Phe Ile Pro Lys Asp Phe Thr Ile Pro
 130 135 140
 Ala Asp Ala Asp Tyr Phe His Val Thr Thr Asn Asn Thr Ile Tyr Gly
 145 150 155 160
 Thr Glu Leu Lys Gly Asp Leu Asp Ser Pro Val Pro Met Val Ala Asp
 165 170 175
 Met Ser Ser Asp Ile Phe Ser Arg Pro Val Asp Val Ser Lys Tyr Ile
 180 185 190
 Cys Ile Tyr Gly Gly Ala Gln Lys Asn Leu Ala Pro Ser Gly Val Thr
 195 200 205
 Phe Val Ile Val Lys Asp Asp Ala Val Gly Lys Val Ser Arg Tyr Ile
 210 215 220
 Pro Ser Met Leu Asn Tyr Lys Thr His Ile Asp Gly Gly Ser Met Phe
 225 230 235 240
 Asn Thr Pro Pro Val Leu Pro Ile Tyr Ser Ala Met Gln Thr Leu Arg
 245 250 255
 Trp Ile Lys Ala Gln Gly Gly Val Lys Glu Met Asp Arg Arg Ala Thr
 260 265 270
 Glu Lys Ala Asp Met Leu Tyr Ala Glu Ile Asp Arg Asn Lys Met Phe
 275 280 285
 Val Gly Thr Ala Ala Lys Glu Asp Arg Ser Arg Met Asn Ile Cys Phe
 290 295 300
 Val Met Ala Pro Glu Tyr Lys Asp Leu Glu Ala Asp Phe Leu Lys Phe
 305 310 315 320
 Ala Thr Asp Lys Gly Met Ser Gly Ile Lys Gly His Arg Ser Val Gly
 325 330 335
 Gly Phe Arg Ala Ser Cys Tyr Asn Ala Met Pro Lys Glu Ser Val Gln
 340 345 350
 Ala Leu Ile Asp Cys Met Gln Glu Phe Glu Lys Leu His
 355 360 365

<210> 7413

<211> 327

<212> PRT

<213> B.fragilis

<400> 7413

Met Thr Ala Phe Gly Val Cys Gly Ile Leu Cys Gly Glu Phe Ser Gln
 1 5 10 15
 Asn Arg Ile Arg Glu Met Lys Ile Leu Val Ala Thr Glu Lys Pro Phe
 20 25 30
 Ala Lys Ile Ala Val Asp Gly Ile Lys Lys Glu Ile Glu Gly Ala Gly
 35 40 45
 Phe Glu Leu Ala Leu Leu Glu Lys Tyr Thr Asp Lys Ala Gln Leu Leu
 50 55 60
 Asp Ala Val Lys Asp Ala Asn Ala Ile Ile Ile Arg Ser Asp Ile Ile

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65              70              75              80
Asp Ala Glu Val Leu Asp Ala Ala Lys Glu Leu Lys Ile Val Val Arg
      85              90              95
Ala Gly Ala Gly Tyr Asp Asn Val Asp Leu Asn Ala Ala Thr Ala His
      100             105             110
Gly Val Cys Val Met Asn Thr Pro Gly Gln Asn Ser Asn Ala Val Ala
      115             120             125
Glu Leu Val Phe Gly Leu Leu Val Tyr Ala Val Arg Asn Phe Tyr Asn
      130             135             140
Gly Thr Ser Gly Thr Glu Leu Met Gly Lys Lys Leu Gly Ile His Ala
      145             150             155             160
Tyr Gly Asn Val Gly Arg Asn Val Ala Arg Ile Ala Lys Gly Phe Gly
      165             170             175
Met Glu Leu Tyr Ala Tyr Asp Ala Phe Cys Pro Lys Asp Val Ile Glu
      180             185             190
Lys Asp Gly Val Lys Ala Val Asp Ser Ala Glu Glu Leu Tyr Lys Thr
      195             200             205
Cys Asn Ile Val Ser Leu His Ile Pro Ala Thr Ala Glu Thr Lys Asn
      210             215             220
Ser Ile Asn His Asp Leu Leu Ala Asn Met Pro Lys Gly Ala Ile Leu
      225             230             235             240
Val Asn Thr Ala Arg Lys Glu Val Ile Asn Glu Asp Glu Leu Ile Gln
      245             250             255
Leu Met Glu Glu Arg Pro Asp Phe Lys Tyr Ile Thr Asp Ile Met Pro
      260             265             270
Ala Ala Asn Thr Lys Phe Ala Glu Leu Phe Ala Gly Arg Tyr Phe Ser
      275             280             285
Thr Pro Lys Lys Met Gly Ala Gln Thr Ala Glu Ala Asn Ile Asn Ala
      290             295             300
Gly Ile Ala Ala Ala Arg Gln Ile Val Gly Phe Leu Lys Glu Gly Cys
      305             310             315             320
Glu Lys Phe Arg Val Asn Lys
      325

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<210> 7414

<211> 110

<212> PRT

<213> B.fragilis

<400> 7414

```

Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe Asp
1              5              10              15
Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe Met
      20             25             30
Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn Phe
      35             40             45
Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu Lys
      50             55             60
Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val Pro
      65             70             75             80
Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr Thr
      85             90             95
Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
      100            105            110

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<210> 7415

<211> 86

<212> PRT

<213> B.fragilis

<400> 7415

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Ile Val Thr Leu Cys Val Leu Thr Phe Lys Leu Leu Tyr Gln Met Asp
1           5           10           15
Lys Asn Glu Ile Gly Leu Asn Ala Gly Lys Val Trp Gln Leu Leu Ser
          20           25           30
Asn Asn Asp Lys Trp Ser Tyr Gly Asn Leu Lys Lys Lys Ser Gly Leu
          35           40           45
Lys Asp Lys Asp Leu Gly Ala Ala Leu Gly Trp Leu Ala Arg Glu Asp
          50           55           60
Lys Ile Glu Phe Glu Gln Glu Glu Glu Glu Leu Tyr Val Tyr Leu Cys
65           70           75           80
Val Asn Val Tyr Ile Gly
          85

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<210> 7416

<211> 61

<212> PRT

<213> B.fragilis

<400> 7416

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Ile Tyr Glu Pro Phe Ser Pro Gly Lys Leu Ala Asn Lys Glu Trp Asp
1           5           10           15
Gly Arg Ser Asp Gly Glu Ile Cys Arg Lys Leu Glu Glu Lys Lys Gly
          20           25           30
Asp Ile Ala Gly His Asn Arg Asn Ala Leu Pro Gly Ser Arg Arg Thr
          35           40           45
Tyr Pro Asp Thr Phe Leu Ser Val Pro Ser Gln Asn Thr
          50           55           60

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<210> 7417

<211> 271

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (271)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7417

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1           5           10           15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
          20           25           30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
          35           40           45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
          50           55           60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65           70           75           80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
          85           90           95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
          100          105          110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
          115          120          125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
          130          135          140

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3800

Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Xaa
 260 265 270

<210> 7418
 <211> 175
 <212> PRT
 <213> B.fragilis

<400> 7418

Phe Tyr Phe Tyr Val Phe Ser Phe Gly Gly Thr Ser Val Val Asp Ala
 1 5 10 15
 Gln Thr Lys Gly Ile Val Val Asp Gly Val Lys Gly Arg Ser Leu Ser
 20 25 30
 Asp Val Asn Ile Tyr Leu Gln Lys Asp Ser Val Glu Ile Gly Ser Thr
 35 40 45
 Asp Arg Asn Gly Glu Phe Met Phe Ser Arg Asp Gln Ile Thr Ile Ser
 50 55 60
 Asp Thr Ile Val Phe Ser His Val Gly Tyr Phe Pro Leu Lys Cys Thr
 65 70 75 80
 Leu Ser Glu Leu Gln His Leu Gly Tyr Lys Val Val Leu His Glu His
 85 90 95
 Pro Gln Leu Leu His Glu Val Val Val Ser Gly Glu Arg Pro Pro Phe
 100 105 110
 Phe Leu Glu Trp Thr Ser Leu Ser Pro Leu Pro Lys Pro Leu Tyr Ser
 115 120 125
 Phe Gly Gly Phe Leu His Ala Gly Lys Ile Tyr Val Val Ala Gly Asp
 130 135 140
 Glu Thr Leu Val Arg Met Val Thr Asp Lys His Arg Arg Ser Thr Ser
 145 150 155 160
 Leu Leu Ser Phe Thr Met Thr Ala Cys Met Arg Trp Glu Glu Leu
 165 170 175

<210> 7419
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 7419

Ser Val Lys Tyr Ala Met Val Lys Val Ile Leu Phe Pro Ser Leu Leu
 1 5 10 15
 Phe Cys Phe Ile Ile Asp Ala His Ser Tyr Phe Asn Thr Ile Tyr Arg
 20 25 30
 Asn Gln Tyr Ile Asn Lys Arg Gly Asn Glu Lys Lys Thr Glu Arg Pro
 35 40 45
 Asn Thr Leu Asp Pro Leu Arg Ile Asn Leu Thr Tyr Val Asn Gly Asn

50 55 60
 Tyr Ile Ser Met Arg Ser Tyr Ile Tyr Pro Leu Thr Val Thr Pro Thr
 65 70 75 80
 His Tyr Val Lys Arg Ile Pro Pro Val Glu Lys Ser Cys Ile Phe His
 85 90 95
 Ile Gln Ser Ser Gln Phe Val Tyr Ala His Cys Ile Cys Phe Asn Met
 100 105 110
 Val Asp Leu
 115

<210> 7420
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7420
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 7421
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 7421
 Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Phe Ile Lys Thr Phe
 1 5 10 15
 Pro Gly Tyr Tyr Tyr Leu Gln Tyr Thr Tyr Lys Glu Gln Val Leu Gly
 20 25 30
 Glu Ile Trp Ser Arg Lys Thr Asn Gln Ile Val Ser Arg Ser Ile Leu
 35 40 45
 Thr Arg Pro Asn Gln Phe Thr Thr Leu Arg Gly Ile Arg Phe Arg Phe
 50 55 60
 Pro Ser Gly Thr Val Ile Arg Leu Leu Pro Asp Tyr Ile Ser Gly Asn
 65 70 75 80
 Lys Ile Ala Phe Phe Ile Pro Ala Asp Glu Ala Met Gly Glu Ile Pro
 85 90 95
 Gly Ile Lys Ile Arg Glu Asp Asp Asn Pro Ile Leu Met Val Met Glu
 100 105 110
 Leu

<210> 7422
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 7422
 Arg Lys Val Asp Arg Arg Asp Arg Arg Gly Ala Glu Thr Phe Ala Gly

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1           5           10           15
Lys Cys Glu Gly Lys Val Ala Ser Tyr Pro Gln Lys Asp Leu Cys Ile
                20                25                30
Asp Glu Arg Lys Gly Val Met Met Glu Thr Asn Lys Lys His Thr Glu
                35                40                45
Asn Ala Leu Lys Gln Ala Leu Gln Arg Arg Gln Pro Gly Arg Leu Pro
                50                55                60
Ser Asn Phe Asn Tyr Arg Met Met Glu Gln Ile Arg Leu Glu Ala Glu
65                70                75                80
Lys Gln Gln Lys Arg Lys Glu Arg Val Met Leu Cys Gly Met Ile Ala
                85                90                95
Gly Ile Leu Leu Leu Gly Val Gly Val Tyr Thr Leu Val Phe Lys
                100                105                110
Leu Glu Phe Asn Phe Lys Glu Tyr Leu Ser Gly Met Asp Phe Ser His
                115                120                125
Ala Asp Ser Ser Leu Leu Ala Phe Tyr Ser Tyr Ile Ala Thr Leu Val
                130                135                140
Leu Leu Leu Leu Gly Leu Asp Tyr Trp Leu Arg Lys Lys Lys Phe His
145                150                155                160
Ser

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<210> 7423
<211> 198
<212> PRT
<213> B.fragilis

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<400> 7423
Thr Tyr Lys Arg Thr Asp Lys Met Lys Ile Val Ala Phe Asn Gly Ser
1           5           10           15
Pro Arg Lys Gly Gly Asn Thr Glu Leu Leu Ile Lys Glu Val Phe Lys
                20                25                30
Pro Ile Gln Glu Ala Gly Ile Glu Thr Glu Leu Val Gln Leu Gly Gly
                35                40                45
Lys Leu Leu Arg Gly Cys Ala Ser Cys Tyr Thr Cys Phe Lys Thr Lys
                50                55                60
Asp Gly Lys Cys Ala Ile Lys Thr Asp Pro Met Asn Glu Phe Ile Gln
65                70                75                80
Lys Ala Gln Glu Ala Asp Gly Ile Ile Leu Ala Ser Pro Thr Tyr Tyr
                85                90                95
Gly Ser Val Ser Ala Glu Met Lys Ala Phe Met Asp Arg Leu Gly Leu
                100                105                110
Thr Thr Ile Gly Gln Gly Arg Thr Leu Thr Arg Lys Val Gly Ala Ala
                115                120                125
Val Ile Ser Val Arg Arg Gly Gly Ala Val Thr Val Tyr Asp Glu Leu
                130                135                140
Asn Arg Phe Met Leu Gly Ser Gly Met Ile Val Pro Gly Ser Thr Tyr
145                150                155                160
Trp Asn Phe Gly Ile Gly Glu Met Pro Gly Glu Val Phe Asp Asp Ala
                165                170                175
Glu Gly Leu Arg Asn Met Lys Asp Leu Gly Val Gln Leu Ala Trp Leu
                180                185                190
Leu Lys Ala Ile His Asn
                195

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<210> 7424
<211> 339
<212> PRT
<213> B.fragilis

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<400> 7424

```

His Thr Met Arg Ser Phe Ala Ser Asp Asn Asn Ser Gly Val His Pro
1           5           10           15
Ala Ile Met Glu Ala Leu Thr Arg Ala Asn Arg Asp His Ala Leu Gly
20           25           30
Tyr Gly Asp Asp Leu Trp Thr Glu Glu Ala Val Arg Lys Ile Lys Glu
35           40           45
Thr Phe Val Ala Asp Cys Glu Pro Leu Phe Val Phe Asn Gly Thr Gly
50           55           60
Ser Asn Val Ile Ala Leu Gln Leu Met Thr Arg Pro Tyr Asn Ser Ile
65           70           75           80
Leu Cys Ala Glu Thr Ala His Ile Tyr Val Asp Glu Cys Gly Ser Pro
85           90           95
Val Lys Met Thr Gly Cys Gln Ile Arg Pro Ile Ala Thr Pro Asp Gly
100          105          110
Lys Leu Thr Pro Gln Leu Ile Thr Pro Tyr Leu His Gly Phe Ala Asp
115          120          125
Gln His His Ser Gln Pro Gly Ala Ile Tyr Leu Ser Glu Cys Thr Glu
130          135          140
Leu Gly Thr Ile Tyr Thr Pro Asp Glu Leu Lys Ala Ile Thr Ser Leu
145          150          155          160
Ala His Gln Tyr Gly Met Trp Val His Met Asp Gly Ala Arg Ile Ala
165          170          175
Asn Ala Cys Ala Ser Leu Gly Leu Ser Leu Arg Ala Leu Thr Val Asp
180          185          190
Cys Gly Ile Asp Val Leu Ser Phe Gly Gly Thr Lys Asn Gly Leu Met
195          200          205
Met Gly Glu Cys Val Ile Val Phe Asp Asp Ser Leu Lys Ser Glu Ala
210          215          220
Arg Phe Ile Arg Lys Gln Ser Ala Gln Leu Ala Ser Lys Met Arg Tyr
225          230          235          240
Leu Ser Cys Gln Phe Thr Ala Tyr Leu Thr Asp Glu Leu Trp Leu Lys
245          250          255
Asn Ala Thr His Ala Asn Ala Met Ala Lys Arg Leu Ala Asp Ala Leu
260          265          270
Glu Gln Val Pro Gly Val Arg Phe Thr Gln Lys Val Glu Ser Asn Gln
275          280          285
Leu Phe Leu Thr Met Pro Arg Ala Glu Thr Asp Arg Met Leu Gln Thr
290          295          300
Tyr Phe Phe Tyr Phe Trp Asn Glu Glu Ala Asp Glu Ile Arg Leu Val
305          310          315          320
Thr Ser Phe Asp Thr Thr Glu Glu Asp Ile Asp Thr Phe Ile Arg Ile
325          330          335
Leu Lys Asn

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<210> 7425

<211> 736

<212> PRT

<213> B.fragilis

<400> 7425

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Thr Thr Phe Gly Pro Ser Ser Pro Val Val Lys Thr Ser Ser Tyr Ile
1           5           10           15
Thr Ala Gln Thr Val Ile Glu Asn Pro Pro Phe Glu Thr Arg Gln Gly
20           25           30
Ser Ile His Thr Ile Ser Lys Ile Glu Leu Ser Pro Thr Glu Thr Arg
35           40           45

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Leu Thr Ile Arg Thr Val Phe Arg Pro Gln Trp Trp Thr Ser Leu Asp
 50 55 60
 Ser Leu Thr Tyr Ile Tyr Ala Pro Glu Ser Lys Lys Gln Leu Tyr Pro
 65 70 75 80
 Leu Arg Ile Glu Gly Arg Lys Phe Gly Glu Gln Val Thr Thr Pro Ala
 85 90 95
 Ser Gly Ile Ile Glu Asp Asp Cys Val Ile Thr Tyr Pro Pro Leu Pro
 100 105 110
 Glu Gly Thr Thr Arg Ile Asp Trp Met Asp Asp Asn Leu Asn Ser Glu
 115 120 125
 Thr Asn Thr Tyr Gly Ile Leu Leu Val Lys Pro Gln Glu Thr Lys Glu
 130 135 140
 Gln Ala Ser Leu Arg Lys Ile His Gly Asn Trp Gln Gln Ala Asp Ala
 145 150 155 160
 Gln Asn Gly Trp Asp Ile Gly Ile Tyr Asp Ser Leu Ala Ile Met Asp
 165 170 175
 Asn Arg Phe Trp Lys Tyr Asp Leu Cys Arg Lys Gln Gly Lys Lys Phe
 180 185 190
 Lys Leu Asn Leu Lys Asp Glu Thr Gly Glu Gln Cys Leu Leu Glu Ile
 195 200 205
 Thr Gln Glu Lys Asp Gly Asn Leu Cys Ile Gly Lys Asn Gly Gly Lys
 210 215 220
 Ala Asn Lys Tyr Ile Arg Ala Gly Arg Pro Gln Arg Asn Tyr Ala Ala
 225 230 235 240
 Thr Thr Ala Ala Thr Ala Pro Gln Thr Ala Phe Phe Arg Lys Asp Thr
 245 250 255
 Val His Ile Arg Gly Phe Leu Asp Gly Tyr Ser Pro Lys Leu Gly Phe
 260 265 270
 Thr Thr Val Leu Ile Tyr Thr Asp Asn His Ile Thr Asn Glu Gly Thr
 275 280 285
 Pro Ala Val Val Thr Ile His Pro Asp Gly Arg Phe Glu Ser Asp Phe
 290 295 300
 Val Val Asn Tyr Pro Gly Val His His Leu Ser Met Gly Asn Asn Trp
 305 310 315 320
 Met Thr Phe Tyr Ile Arg Pro Gly Glu Thr Leu Met Leu Tyr Ile Asn
 325 330 335
 Trp Glu Asp His Leu Asp Tyr Leu Arg Gln Arg Arg Leu Lys Pro Met
 340 345 350
 Leu Thr Glu Thr Leu Tyr Met Gly Pro Ser Ser Ser Ile Asn Gln Glu
 355 360 365
 Leu Met Pro Cys Glu Pro Leu Phe Ser Lys Asp Tyr His Ile Ile Gln
 370 375 380
 Asn Ala Cys Lys Thr Leu Thr Pro Ser Glu Phe Lys Thr Gln Gln Glu
 385 390 395 400
 Pro Met Tyr Lys Leu Trp Met His Arg Val Asp Ser Leu Glu Gln Ser
 405 410 415
 Lys Thr Leu Gln Pro Glu Ala Met Gln Met Leu Lys Asn Asp Val Met
 420 425 430
 Ile Asn Tyr Gly Ala Trp Leu Leu Glu Phe Ile Leu Met Arg Asp Met
 435 440 445
 Asp Ala Arg Lys Asp Thr Thr Asn Thr Ile Leu Lys Ile Lys Glu Thr
 450 455 460
 Pro Asp Tyr Tyr Asp Phe Leu Lys Ala Met Pro Leu Asn Asp Val Arg
 465 470 475 480
 Ser Ile Gly Cys Asn Asn Phe Ser Thr Phe Ile Asn Arg Ile Glu Phe
 485 490 495
 Met Asn Pro Phe Leu Pro Ala Ser Trp Gln Ile Lys Asn Gly Thr Asp
 500 505 510
 Asp Arg Met Glu Lys Tyr Ala Glu Ser Trp Arg Lys Lys Lys Glu Ile

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      515              520              525
Leu Gln Asp Thr Thr Gly Met Pro Phe Pro Val Val Gly Glu Leu Ile
  530              535              540
Leu Thr Arg Ser Tyr Pro Phe Leu Ala Lys Thr Leu Glu Asn Glu Lys
  545              550              555              560
Lys Ala Phe Ala Leu Asp Thr Leu Lys Gly Tyr Leu His Asp Pro
      565              570              575
Phe Leu Val Ala Glu Ala Glu Arg Met Tyr Arg Gln Val Tyr Pro Val
      580              585              590
Gln Gly Asn Lys Pro Gln Glu Leu Pro Ala Gly Lys Gly Thr Asp Ile
      595              600              605
Ile Arg Lys Leu Thr Ala Pro Tyr Leu Gly Lys Phe Val Ile Ile Asp
      610              615              620
Phe Trp Ala Thr Ser Cys Gly Pro Cys Arg Ala Ser Ile Glu Gln His
  625              630              635              640
Ala Asp Leu Arg Lys Asp Tyr Arg Asn Ser Pro Asp Ile Lys Phe Ile
      645              650              655
Phe Val Thr Ser Asn Gln Asp Ser Pro Glu Lys Ala Tyr Glu Asn Tyr
      660              665              670
Val Glu Lys His Leu Lys Glu Glu Thr Ile Phe Arg Leu Pro Gln Ser
      675              680              685
Asp Tyr Asn Tyr Leu Arg Glu Leu Phe His Phe Asn Gly Ile Pro Arg
  690              695              700
Tyr Val Leu Leu Asp Arg Asp Gly Lys Leu Leu Asp Glu Asn Phe Pro
  705              710              715              720
Met Tyr Asn Ile Glu Leu Phe Leu Lys Glu Ser Lys Ile Arg Lys Glu
      725              730              735

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<210> 7426
<211> 186
<212> PRT
<213> B.fragilis

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<400> 7426
Pro Asp Ile Met Val Gln Asn Asp Glu Thr Gln Tyr Ile Ala Arg Ile
  1              5              10              15
Leu Asp Gly Asp Thr Glu Cys Phe Ser Ala Phe Leu Asp Arg Tyr Ser
      20              25              30
Arg Pro Leu Tyr Val Leu Ile Val Gln Ile Val Gly Cys Ser Glu Asp
      35              40              45
Ala Glu Glu Leu Val Gln Asp Val Phe Leu Lys Ala Phe Arg Cys Leu
      50              55              60
Gly Ser Tyr Arg Gly Glu Cys Arg Phe Ser Thr Trp Leu Tyr Arg Ile
  65              70              75              80
Ala Tyr Thr Thr Ala Val Ser Ala Thr Arg Lys Lys Lys Gln Glu Phe
      85              90              95
Leu Tyr Ile Glu Glu Asn Thr Ile Asn Asn Val Pro Asp Glu Lys Ala
      100              105              110
Asp Asp Ile Leu Tyr Pro Thr Asp Asp Glu Glu Arg Thr Ala Arg Leu
      115              120              125
Ile Gln Ala Ile Asp Leu Leu Asn Val Glu Glu Lys Ala Leu Ile Thr
      130              135              140
Leu Phe Tyr Tyr Glu Glu Lys Ser Ile Glu Glu Ile Gly Glu Val Leu
  145              150              155              160
Lys Leu Ser Pro Gly Asn Val Lys Val Lys Leu His Arg Thr Arg Lys
      165              170              175
Lys Ile Tyr Val Leu Met Asn Gly Lys Glu
      180              185

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<210> 7427
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7427

Lys	His	Thr	Ile	Met	Met	Asp	Phe	Ile	Thr	Ala	Pro	Leu	Ile	Val	Gly
1				5					10					15	
Ile	Ile	Thr	Leu	Gly	Ile	Tyr	Lys	Leu	Phe	Glu	Leu	Phe	Ala	Cys	Arg
			20					25					30		
Arg	Glu	Arg	Ile	Thr	Leu	Ile	Glu	Lys	Leu	Gly	Glu	Lys	Met	Ser	Gln
			35					40					45		
Thr	Asp	Leu	Glu	Leu	Asn	Gly	Lys	Ile	Cys	Leu	Pro	Asp	Phe	Asn	Arg
			50				55					60			
Pro	Gln	Leu	Ser	Phe	Gly	Ala	Leu	Lys	Gly	Gly	Cys	Leu	Leu	Leu	Gly
65					70					75					80
Val	Gly	Leu	Gly	Leu	Leu	Val	Gly	Phe	Ile	Leu	Ser	Tyr	Val	Ser	Phe
				85					90					95	
Ser	Pro	Tyr	Asp	Leu	Asp	Arg	Leu	Asp	Arg	Gly	Tyr	Thr	Arg	Glu	Met
			100					105					110		
Val	Gly	Val	Ile	Tyr	Gly	Ser	Cys	Thr	Leu	Leu	Phe	Gly	Gly	Ala	Gly
			115				120						125		
Leu	Val	Ala	Ser	Phe	Leu	Ile	Glu	Gln	Asn	Phe	Ala	Ala	Lys	Lys	Lys
			130				135					140			
Glu	Lys														
145															

<210> 7428
 <211> 601
 <212> PRT
 <213> B.fragilis

<400> 7428

Ile	Tyr	Asn	Phe	Leu	Ser	Gln	Leu	Pro	Val	Ile	Ala	Thr	Ser	Asn	His
1				5					10					15	
Leu	Asn	Leu	Thr	Ile	Asn	Met	Ala	Lys	Lys	Val	Ala	Glu	Gln	Leu	Val
			20					25					30		
Asp	Thr	Leu	Ile	Glu	Ala	Gly	Val	Arg	Arg	Ile	Tyr	Ala	Val	Thr	Gly
			35				40						45		
Asp	Ser	Leu	Asn	Glu	Val	Asn	Glu	Ala	Val	Arg	Gln	Asn	Glu	Val	Met
			50				55				60				
Lys	Trp	Ile	His	Val	Arg	His	Glu	Glu	Thr	Gly	Ala	Tyr	Ala	Ala	Gly
65					70					75					80
Ala	Glu	Ala	Gln	Leu	Thr	Gly	Leu	Pro	Gly	Cys	Cys	Ala	Gly	Ser	Ser
			85						90					95	
Gly	Pro	Gly	His	Val	His	Leu	Ile	Asn	Gly	Leu	Tyr	Asp	Ala	His	Arg
			100					105					110		
Ser	Gly	Ala	Pro	Val	Ile	Ala	Ile	Ala	Ser	Thr	Ile	Pro	Thr	Gly	Glu
			115				120						125		
Phe	Gly	Thr	Glu	Tyr	Phe	Gln	Glu	Thr	Asn	Thr	Val	Lys	Leu	Phe	Asn
			130				135					140			
Asp	Cys	Ser	Phe	Tyr	Asn	Glu	Val	Ala	Thr	Thr	Pro	Glu	Gln	Phe	Pro
145					150					155					160
Arg	Met	Leu	Gln	Ser	Ala	Leu	Gln	Thr	Ala	Thr	Thr	Arg	Lys	Gly	Val
			165						170					175	
Ala	Val	Val	Gly	Leu	Pro	Gly	Asp	Leu	Ala	Lys	Lys	Pro	Ala	Val	Lys
			180					185					190		
Val	Glu	Ser	Ser	Glu	Gln	Ile	Tyr	Pro	Leu	Ala	Ser	Ser	Val	Cys	Pro
			195				200						205		

Ala Glu Glu Asp Leu Ile Arg Leu Ala Gly Met Leu Asn His Tyr Glu
 210 215 220
 Arg Ile Thr Leu Phe Cys Gly Ile Gly Cys Lys Gly Ala His Glu Glu
 225 230 235 240
 Ile Ile Arg Met Ser Glu Thr Leu Asn Ala Pro Val Ala Tyr Thr Phe
 245 250 255
 Lys Gly Lys Met Glu Val Gln Tyr Asp Asn Pro Tyr Glu Val Gly Met
 260 265 270
 Thr Gly Leu Leu Gly Met Pro Ser Gly Tyr Tyr Ser Met His Glu Ala
 275 280 285
 Glu Val Leu Val Met Leu Gly Thr Asp Phe Pro Tyr Ser Ala Phe Leu
 290 295 300
 Pro Asp Asp Ile Lys Ile Val Gln Val Asp Ile Lys Pro Glu Arg Leu
 305 310 315 320
 Gly Arg Arg Ala Lys Val Asp Leu Gly Leu Cys Gly Asp Val Arg Ser
 325 330 335
 Thr Leu Arg Ala Leu Leu Pro Met Leu Gln Gln Lys Lys Asn Asp Ser
 340 345 350
 Phe Leu Arg Lys Gln Leu Lys Arg Tyr Glu Gly Val Lys Lys Asp Leu
 355 360 365
 Ala Ala Tyr Thr Glu Asp Lys Gly Lys Met Asp Gln Ile His Pro Glu
 370 375 380
 Tyr Val Met Ser Glu Ile Asn Asn Ile Ser Ser Asp Asp Ala Ile Tyr
 385 390 395 400
 Thr Val Asp Thr Gly Met Thr Cys Val Trp Gly Ala Arg Tyr Leu Gln
 405 410 415
 Ala Thr Gly Lys Arg His Met Leu Gly Ser Phe Asn His Gly Ser Met
 420 425 430
 Ala Asn Ala Leu Pro Gln Ala Ile Gly Ala Ala Leu Ala Cys Pro Asp
 435 440 445
 Arg Gln Val Ile Ala Leu Cys Gly Asp Gly Gly Leu Ser Met Thr Leu
 450 455 460
 Gly Asp Leu Glu Thr Val Val Gln Tyr Lys Leu Pro Ile Lys Ile Ile
 465 470 475 480
 Val Phe Asn Asn Arg Ser Leu Gly Met Val Lys Leu Glu Met Glu Val
 485 490 495
 Asp Gly Leu Pro Asp Trp Gln Thr Asp Met Leu Asn Pro Asn Phe Ala
 500 505 510
 Gln Val Ala Glu Ala Met Gly Met Thr Gly Phe Asn Val Ser Asp Pro
 515 520 525
 Glu Glu Val Leu Asn Thr Leu Cys Asn Ala Phe Glu Leu Glu Gly Pro
 530 535 540
 Val Leu Ile Asn Val Met Thr Asp Pro Asn Ala Leu Ala Met Pro Pro
 545 550 555 560
 Lys Ile Glu Leu Gly Gln Met Val Gly Phe Ala Gln Ser Met Tyr Lys
 565 570 575
 Leu Leu Ile Asn Gly Arg Ser Gln Glu Val Ile Asp Thr Ile Asn Ser
 580 585 590
 Asn Phe Lys His Ile Arg Glu Val Phe
 595 600

<210> 7429
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 7429
 Leu Cys Asp Leu Lys Asp Gly Val Ser Tyr Pro Gly Leu Ala Ser Asp
 1 5 10 15

Gly Ser Tyr Ile Tyr Ile Phe Glu Asn Arg Asn Leu Gln Val Tyr His
 20 25 30
 Ile Glu Thr Asp Thr Met Arg Ile Tyr Glu Leu Ala Ala Leu Asp Val
 35 40 45
 Glu Asn Ala Gly Leu Phe Tyr Trp Arg Asn Thr Leu Tyr Ile Val Gly
 50 55 60
 Gly Cys Asn Cys Gln Gly Ile Tyr Val Ala Pro His Arg Asp Val Ile
 65 70 75 80
 Ala Ile Asp Val Ser Gln Ile Asn Pro
 85

<210> 7430
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 7430
 Thr Gln Ala Val Asp Phe Thr Ser Phe Ile Tyr Asp Asp Cys Leu Tyr
 1 5 10 15
 Ala Met Gly Gly Ala Ile Arg Glu Lys Ala Tyr Ser Asn Lys Lys His
 20 25 30
 Thr Leu Asp Leu Lys Arg Gly Val Trp Tyr Glu Leu Glu Gly Thr Leu
 35 40 45
 Pro Ala Gly Arg Cys Gly Arg Met Asn Gly Ile Leu Val Gly Asp Lys
 50 55 60
 Val Tyr Phe Trp Gly Gly Tyr His Thr Ala Pro Met Trp Thr Ala Ala
 65 70 75 80
 Ser Tyr Asp Leu Arg Thr Gly Glu Trp Arg
 85 90

<210> 7431
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 7431
 Ser Ser Thr Ser Gly Val Thr Cys Cys Glu Ala Ser Leu His Ala Gln
 1 5 10 15
 Ser Gly Leu Gln Trp Leu Ser Thr Ile Asn Pro Ser Lys Phe Arg Ser
 20 25 30
 Ile Ala Cys Trp Gln Arg Gly Ala Thr Ser Ser Arg Phe Pro Pro Met
 35 40 45
 Trp Leu Gly Ser Gln Lys Ile Gly Ser Ser Gly Met Arg Arg Arg Asn
 50 55 60
 Ser Ile Gly Met Cys His
 65 70

<210> 7432
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 7432
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45

Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 7433

<211> 262

<212> PRT

<213> B.fragilis

<400> 7433

Gln Ile Ile His Ile Met Arg Ile Leu Ile Leu Gly Ala Gly Lys Met
 1 5 10 15
 Gly Ser Phe Phe Thr Asp Ile Leu Ser Phe Gln His Glu Thr Ala Val
 20 25 30

Phe Asp Val Asn Pro His Gln Leu Arg Phe Val Tyr Asn Thr Tyr Arg
 35 40 45
 Phe Thr Thr Leu Glu Glu Ile Lys Glu Phe Glu Pro Glu Leu Val Ile
 50 55 60
 Asn Ala Ala Thr Val Lys Tyr Thr Leu Asp Ala Phe Arg Lys Ile Leu
 65 70 75 80
 Pro Val Leu Pro Lys Asp Cys Ile Leu Ser Asp Ile Ala Ser Val Lys
 85 90 95
 Thr Gly Leu Lys Lys Phe Tyr Glu Glu Ser Gly Phe Arg Tyr Val Ser
 100 105 110
 Thr His Pro Met Phe Gly Pro Thr Phe Ala Ser Leu Ser Asn Leu Ser
 115 120 125
 Ser Glu Ser Ala Ile Ile Ile Ser Glu Ser Asp His Leu Gly Lys Val
 130 135 140
 Phe Phe Lys Asp Leu Tyr Asn Ser Leu Asn Leu Asn Ile Phe Glu Tyr
 145 150 155 160
 Thr Phe Asp Glu His Asp Glu Thr Val Ala Tyr Ser Leu Ser Ile Pro
 165 170 175
 Phe Val Ser Thr Phe Val Phe Ala Ala Val Met Lys His Gln Glu Ala
 180 185 190
 Pro Gly Thr Thr Phe Lys Lys His Met Ala Ile Ala Lys Gly Leu Leu
 195 200 205
 Ser Glu Asp Asp Tyr Leu Leu Gln Glu Ile Leu Phe Asn Pro Arg Thr
 210 215 220
 Pro Ser Gln Val Glu Asn Ile Arg Thr Glu Leu Lys Gln Leu Leu Glu
 225 230 235 240
 Ile Ile Thr Asn Lys Asp Ala Glu Gly Met Lys Lys Tyr Leu Thr Lys
 245 250 255
 Ile Arg Glu Lys Ile Lys
 260

<210> 7434

<211> 396

<212> PRT

<213> B.fragilis

<400> 7434

Ala Asn Met Gln Lys Glu Asn Gln Thr Tyr Lys Val Ala Pro Ala Asp
 1 5 10 15
 Arg Leu Ala Gly Val Ser Glu Tyr Tyr Phe Ser Lys Lys Leu Lys Glu
 20 25 30
 Val Ala Arg Met Asn Ala Glu Gly Lys Asp Val Ile Ser Leu Gly Ile
 35 40 45
 Gly Ser Pro Asp Met Pro Pro Ser Glu Gln Thr Ile Glu Thr Leu Cys
 50 55 60
 Asn Asn Ala His Asp Pro Asn Gly His Gly Tyr Gln Pro Tyr Val Gly
 65 70 75 80
 Ile Pro Glu Leu Arg Lys Gly Phe Ala Asp Trp Tyr Lys Arg Trp Tyr
 85 90 95
 Gly Val Glu Leu Asn Pro Ala Thr Glu Ile Gln Pro Leu Ile Gly Ser
 100 105 110
 Lys Glu Gly Ile Leu His Val Thr Leu Ala Phe Val Asn Pro Gly Glu
 115 120 125
 Gln Val Leu Val Pro Asn Pro Gly Tyr Pro Thr Tyr Thr Ser Leu Ser
 130 135 140
 Lys Ile Leu Gly Ala Glu Val Val Asn Tyr Asn Leu Lys Glu Glu Asp
 145 150 155 160
 Gly Trp Met Pro Asp Phe Asp Glu Leu Glu Lys Met Asp Leu Ser Arg
 165 170 175

Val Lys Leu Met Trp Thr Asn Tyr Pro Asn Met Pro Thr Gly Ala Asn
 180 185 190
 Ala Thr Pro Glu Leu Tyr Lys Arg Leu Val Glu Phe Ala Arg Arg Lys
 195 200 205
 Asn Ile Val Ile Val Asn Asp Asn Pro Tyr Ser Phe Ile Leu Asn Asp
 210 215 220
 Lys Pro Ile Ser Ile Leu Ser Val Pro Gly Ala Lys Glu Cys Cys Ile
 225 230 235 240
 Glu Phe Asn Ser Met Ser Lys Ser His Asn Met Pro Gly Trp Arg Ile
 245 250 255
 Gly Met Leu Ala Ser Asn Ala Glu Phe Val Gln Trp Ile Leu Lys Val
 260 265 270
 Lys Ser Asn Ile Asp Ser Gly Met Phe Arg Ala Met Gln Leu Ala Ala
 275 280 285
 Ala Lys Ala Leu Glu Ala Asp Ser Thr Trp Tyr Glu Gly Asn Asn Val
 290 295 300
 Asn Tyr Arg Asn Arg Arg His Leu Ala Gly Glu Ile Met Lys Thr Leu
 305 310 315 320
 Gly Cys Thr Tyr Asp Glu Lys Gln Val Gly Met Phe Leu Trp Gly Lys
 325 330 335
 Ile Pro Ala Ser Cys Ala Asp Val Glu Glu Leu Thr Glu Lys Val Leu
 340 345 350
 Gln Glu Ala Arg Val Phe Ile Thr Pro Gly Phe Ile Phe Gly Ser Asn
 355 360 365
 Gly Ala Arg Tyr Ile Arg Ile Ser Leu Cys Cys Lys Asp Ala Lys Leu
 370 375 380
 Ala Glu Ala Leu Glu Arg Ile Lys Leu Ile Met Lys
 385 390 395

<210> 7435

<211> 83

<212> PRT

<213> B.fragilis

<400> 7435

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 7436

<211> 306

<212> PRT

<213> B.fragilis

<400> 7436

Leu Asn Asn Lys Met Lys His Tyr Gln Arg Leu Glu Gly Met Val Ala
 1 5 10 15
 Ala Thr Phe Thr Pro Met Asp Ala Arg Gly Asp Ile Asn Leu Ser Val
 20 25 30
 Ile Asp Lys Tyr Ala Asp Leu Met Ala Glu Ser Gly Met Ala Gly Val

35 40 45
 Phe Val Cys Gly Thr Thr Gly Glu Ser His Ser Leu Thr Thr Gly Glu
 50 55 60
 Arg Lys Ala Ile Leu Ala Gln Trp Ile Lys Ser Ala Arg Lys Arg Phe
 65 70 75 80
 Lys Val Ile Ala His Val Gly Ser Asn Cys Gln Leu Glu Ala Met Glu
 85 90 95
 Leu Ala Arg His Ala Gln Glu Val Glu Ala Asp Ala Phe Ala Ala Met
 100 105 110
 Ala Pro Cys Phe Phe Lys Pro Ser Ser Val Lys Asp Leu Val Asp Phe
 115 120 125
 Phe Thr Pro Ile Ala Gln Ser Ala Pro Asp Leu Pro Phe Tyr Tyr Tyr
 130 135 140
 Asn Met Pro Ser Met Thr Gly Val Ser Leu Ser Val Pro Ser Phe Leu
 145 150 155 160
 Ile Glu Gly Lys Lys Thr Met Pro Asn Leu Val Gly Thr Lys Phe Thr
 165 170 175
 His Asn Asn Leu Met Glu Met Gly Glu Cys Leu Glu Leu Asn Asn Gly
 180 185 190
 Glu Phe Glu Val Leu His Gly Tyr Asp Glu Ile Leu Ile Ala Gly Leu
 195 200 205
 Ala Leu Gly Ala Val Ala Gly Val Gly Ser Thr Tyr Asn Tyr Leu Pro
 210 215 220
 Ala Val Tyr Gln Asn Leu Phe Asp Ala Phe Lys Lys Gly Asp Ile Cys
 225 230 235 240
 Thr Ala Arg Arg Met Gln Gln Lys Ser Ile Glu Ile Val Lys Ile Ile
 245 250 255
 Ile Lys Tyr Gly Gly Gly Val Arg Gly Gly Lys Ala Ile Met Asn Leu
 260 265 270
 Ile Gly Val Asp Cys Gly Arg Cys Arg Leu Pro Val Thr Pro Phe Gly
 275 280 285
 Asp Asp Glu Tyr Ser Ser Leu Lys Arg Asp Leu Glu Lys Ile Gly Phe
 290 295 300
 Leu Asn
 305

<210> 7437
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7437
 Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Lys Glu Ser Tyr Lys Phe
 1 5 10 15
 Met Lys Lys Leu Gly Leu Leu Leu Phe Leu Phe Val Cys Ala Ala Val
 20 25 30
 Val Arg Ala Gln Ser Asn Ile Val Lys Ser Leu Glu Arg Asn Val Pro
 35 40 45
 Gly Gln Gly Lys Val Thr Ile His Gln Asp Ser Arg Ile Glu Ala Leu
 50 55 60
 Leu Gly Thr Ala Arg Thr Gly Thr Gly Glu Gln Thr Val Ile Lys Ser
 65 70 75 80
 Ser Gly Tyr Arg Val Gln Ala Tyr Ala Gly Asn Asn Thr Arg Gln Ala
 85 90 95
 Lys Asn Glu Ala His Gln Val Gly Thr Arg Val Lys Glu Tyr Phe Pro
 100 105 110
 Glu Leu Ser Val Tyr Thr Ser Phe Asn Pro Pro Arg Trp Leu Cys Arg
 115 120 125
 Val Gly Asp Phe Arg Ser Ile Glu Glu Ala Asp Ala Met Met Arg Lys

130 135 140
 Leu Lys Ala Thr Gly Val Phe Lys Glu Val Ser Ile Val Lys Asp Gln
 145 150 155 160
 Ile Asn Ile Pro Leu
 165

<210> 7438
 <211> 1102
 <212> PRT
 <213> B.fragilis

<400> 7438

Lys His Thr Lys Met Arg Lys Ile Thr Arg Ile Lys Cys Leu Ile Val
 1 5 10 15
 Val Leu Leu Thr Phe Ile Gly Thr Leu Ala Pro Val His Ala Gln Gln
 20 25 30
 Ser Gly Asn Phe Glu Ile Ser Gly Val Val Lys Asp Thr Ser Gly Glu
 35 40 45
 Pro Val Ile Gly Ala Thr Val Ile Val Lys Asn Thr Gln Ile Gly Thr
 50 55 60
 Thr Thr Asp Val Asp Gly Lys Phe Lys Leu Lys Val Pro His Lys Ser
 65 70 75 80
 Leu Leu Gln Ile Ser Phe Ile Gly Met Lys Thr Lys Asp Leu Lys Val
 85 90 95
 Thr Asn Asn Thr Phe Tyr Glu Ile Thr Leu Glu Asp Glu Ser Val Leu
 100 105 110
 Leu Asp Glu Val Val Ala Ile Gly Tyr Gly Thr Gln Ser Lys Ala Thr
 115 120 125
 Val Thr Ser Gly Val Val Ser Val Lys Lys Ala Glu Leu Met Ser Ser
 130 135 140
 Val Ser Ala Ser Pro Leu Asn Asn Leu Gln Gly Lys Val Ala Gly Leu
 145 150 155 160
 Asp Ile Arg Gln Thr Thr Gly Gln Pro Gly Ala Gln Pro Val Val Leu
 165 170 175
 Ile Arg Gly Gly Ser Thr Asp Pro Ala Asn Asp Ser Pro Leu Phe Val
 180 185 190
 Ile Asp Gly Val Val Arg Ser Asn Met Asn Gly Leu Asn Gln Glu Asp
 195 200 205
 Ile Glu Ser Met Glu Val Leu Lys Asp Ala Ala Ser Ala Ala Ile Tyr
 210 215 220
 Gly Ala Lys Ala Ala Asn Gly Ile Ile Leu Ile Thr Thr Lys Gln Gly
 225 230 235 240
 Ser Ser Lys Asp Gly Lys Ala Thr Ile Ser Ala Ser Tyr Arg Leu Gly
 245 250 255
 Val Glu Gln Ile Arg Gln His Tyr Pro Phe Ser Gly Ala Arg Asp Tyr
 260 265 270
 Leu Tyr Ala Ser Arg Leu Ala Gly Ser Arg Gly Ile Asn Asp Ala Asn
 275 280 285
 Val Ser Gly Arg Leu Glu Gly Gly Ala Tyr Pro Tyr Ser Thr Gly Asn
 290 295 300
 Ile Asn Tyr Lys Asn Gly Ala Leu Glu Gly Tyr Gly Tyr Ser Arg Phe
 305 310 315 320
 Thr Thr Glu Tyr Leu Asp Asp Leu Ile Ser Asn Met Gly Gln Ser Tyr
 325 330 335
 Val Asp Asp Leu Leu Asn Arg Gln Gly Tyr Glu Thr Met Thr Asp Pro
 340 345 350
 Tyr Ser Gly Lys Gln Leu Ile Phe Lys Asp Asn His Tyr Gln Lys Asp
 355 360 365
 Val Leu Phe Gln Thr Ala Leu Thr His Asn Tyr Asp Leu Ser Ala Ser

370	375	380
Gly Gly Asn Asp Lys Gly Asn Tyr Tyr Val Ser Leu Gly Tyr Ile Asn		
385	390	395
Ser Glu Gly Ile Val Leu Gly Thr Gly Tyr Asp Arg Phe Ser Leu Thr		400
	405	410
Ala Asn Gly Asn Tyr Asn Leu Arg Ser Asn Leu Lys Leu Thr Val Gly		415
	420	425
Leu Lys His Ser Thr Ile Ser Asn Lys Ala Thr Asp Pro Glu Asn Ser		430
	435	440
Gly Thr Ser Thr Met Asp Arg Ser Ser Arg Tyr Pro Thr Thr Phe Arg		445
	450	455
Leu Tyr Tyr Asp Asp Gly Thr Pro Gly Ile Gly Glu Ala Gly Gly Ser		460
465	470	475
Pro Arg Asn Arg Leu His Glu Leu Tyr Tyr Gln Asp Ile Ser Asp Lys		480
	485	490
Val Tyr Arg Asn Thr Ile Gln Leu Gly Leu Asp Trp Glu Ile Leu Lys		495
	500	505
Gly Leu His Phe Lys Pro Ser Ala Ser Tyr Tyr Met Gln Glu Asn Ile		510
	515	520
Tyr Arg Phe Phe Glu Lys Tyr Asn Glu Phe Asn Lys Gly Arg Lys Thr		525
	530	535
Leu Glu Lys His Asp Gln Tyr Lys Gln Ile Met Ala Asp Ala Val Phe		540
545	550	555
Thr Tyr Asp Lys Val Phe Ser Asp Lys His Thr Leu Asn Ala Met Ile		560
	565	570
Gly Met Asn Tyr Thr Gln Asp Asp Thr Tyr Lys Leu Lys Gly Thr Gly		575
	580	585
Ser Glu Ala Pro Thr Asp Tyr Val Pro Thr Leu Ala Pro Thr Lys Pro		590
	595	600
Asp Leu Gln Arg Thr Thr Ser Ser Leu Asp Lys Glu Val Leu Val Gly		605
	610	615
Phe Phe Ala Arg Val Asn Tyr Asp Tyr Lys Arg Arg Tyr Leu Leu Thr		620
625	630	635
Val Ser Ala Arg Tyr Asp Gly Ala Ser Gln Phe Ala Glu Asp His Lys		640
	645	650
Phe Ala Leu Phe Pro Ala Val Ser Gly Gly Trp Asn Met His Tyr Glu		655
	660	665
Asp Trp Phe Pro Lys Thr Val Val Ser Arg Met Lys Leu Arg Ala Ser		670
	675	680
Trp Gly Gln Thr Gly Asn Asn Lys Leu Ser Tyr Ser Asn Thr Gln Gly		685
	690	695
Glu Tyr Ala Ser Tyr Ile Tyr Ala Gly Asn Pro Gly Val Leu Asn Ser		700
705	710	715
Val Leu Ala Asn Asn Ser Leu Val Trp Glu Thr Thr Ser Asn Val Asp		720
	725	730
Tyr Gly Phe Asp Ala Gly Phe Phe Asp Asn Arg Leu Glu Leu Ser Val		735
	740	745
Thr Gly Tyr Asn Lys Leu Thr Ser Asp Arg Leu Tyr Asp Lys Ala Leu		750
	755	760
Pro Ala Gln Thr Gly Phe Ser Ser Ile Lys Ala Asn Leu Gly Thr Val		765
	770	775
Gln Asn Glu Gly Phe Glu Leu Ser Leu Thr Ala His Pro Leu Ser Thr		780
785	790	795
Thr Ser Pro Val Ser Trp Asp Val Thr Gly Thr Phe Ser Met Asn Arg		800
	805	810
Thr Tyr Met Lys Lys Leu Pro Tyr Asn Gly Arg Asp Lys Asn Arg Val		815
	820	825
Gln Gly Gly Leu Val Trp Asp Ala Lys Ser Gly Thr Tyr Val Glu Thr		830
	835	840
		845

Gly Gly Leu Ala Glu Gly Glu Arg Ile Gly Gly Arg Trp Gly Tyr Lys
 850 855 860
 Tyr Leu Gly Val Tyr Asp Thr Asp Glu Glu Ala Ala Lys Ala Pro Val
 865 870 875 880
 Asp Thr Lys Val Ser Gly Ser Lys Met Asn Lys Lys Lys Val Ala Gly
 885 890 895
 Asp Ala Ile Trp Ala Asp Leu Asp Asn Asn Gly Val Ile Asp Asp Lys
 900 905 910
 Asp Ile Thr Phe Ile Gly Trp Ala Asn Pro Asp Lys Lys Gly Ala Leu
 915 920 925
 Ile Asn Asn Leu Ser Tyr Lys Asn Phe Ser Leu Arg Leu Val Val Asp
 930 935 940
 Phe Ala Leu Gly His Ser Ile Ala Asn Ile Trp Arg Cys Arg Ala Asn
 945 950 955 960
 Ala Tyr Ala Arg Asn Ala Ile Ile Pro Thr Thr Asp Val Thr Asn Ala
 965 970 975
 Asn Ile Trp Trp Gln Thr Gly Asp Ala Ala Thr Ala Lys Tyr Pro Arg
 980 985 990
 Tyr Asp Val Ala Ser Asp Trp Asp Asn Gly Tyr Arg Asn His Met Arg
 995 1000 1005
 Thr Ile Ala Tyr Ala Gly Met Asn Ser Asn Gly Asn Ala Asp Asn Thr
 1010 1015 1020
 Ala Tyr Tyr Ser Lys Gly Asp Tyr Leu Cys Phe Arg Glu Val Ser Leu
 1025 1030 1035 1040
 Gly Tyr Glu Leu Pro Arg Ser Ile Cys Ser Lys Met Lys Val Lys Gly
 1045 1050 1055
 Val Ser Leu Asn Ala Gly Val Thr Asn Ile Gly Tyr Ile Thr Ala Phe
 1060 1065 1070
 Asp Gly Leu Asn Pro Glu Gln Tyr Asp Gly Gln Glu Thr Gly Glu Tyr
 1075 1080 1085
 Phe Leu Pro Ile Gln Phe Asn Phe Gly Val Arg Leu Thr Phe
 1090 1095 1100

<210> 7439

<211> 683

<212> PRT

<213> B.fragilis

<400> 7439

Leu Ser Lys Lys Tyr His Val His Leu His Pro Gln Gly Asp Lys Thr
 1 5 10 15
 Met Ile Asp Gln Ala Thr Ile Asp Arg Ile Leu Asp Ala Ala Gln Ile
 20 25 30
 Val Glu Val Val Ser Asp Phe Val Thr Leu Arg Lys Arg Gly Val Asn
 35 40 45
 Tyr Val Gly Leu Cys Pro Phe His Asn Glu Lys Thr Pro Ser Phe Ser
 50 55 60
 Val Ser Pro Ser Lys Gly Leu Cys Lys Cys Phe Ser Cys Gly Lys Gly
 65 70 75 80
 Gly Asn Ala Val His Phe Ile Met Glu His Glu Gln Met Ser Tyr Pro
 85 90 95
 Glu Ala Leu Arg Tyr Leu Ala Lys Lys Tyr Asn Ile Glu Ile Lys Glu
 100 105 110
 Arg Glu Leu Thr Asn Glu Glu Lys Glu Val Gln Ser Asn Arg Glu Ser
 115 120 125
 Met Phe Ile Val Asn Asn Phe Ala Arg Asp Tyr Phe Gln Asn Ile Leu
 130 135 140
 Lys Asn His Val Asp Gly Arg Ser Ile Gly Leu Ala Tyr Phe Arg Gln
 145 150 155 160

Arg Gly Phe Arg Asp Asp Ile Ile Asp Lys Phe Gln Leu Gly Phe Ser
 165 170 175
 Thr Glu Gly Arg Asp Ala Leu Ala Gln Glu Ala Leu Arg Lys Gly Phe
 180 185 190
 Lys Gln Glu Phe Leu Val Lys Thr Gly Leu Cys Tyr Glu Thr Asp Asp
 195 200 205
 His Lys Leu Arg Asp Arg Phe Trp Gly Arg Val Met Phe Pro Val His
 210 215 220
 Thr Leu Ser Gly Lys Val Val Ala Phe Gly Gly Arg Val Leu Ser Thr
 225 230 235 240
 Glu Asn Lys Lys Leu Ala Lys Tyr Val Asn Ser Pro Glu Ser Glu Ile
 245 250 255
 Tyr His Lys Ser Asn Glu Leu Tyr Gly Ile Tyr Phe Ala Lys Gln Ala
 260 265 270
 Ile Val Lys Gln Asp Arg Cys Phe Leu Val Glu Gly Tyr Thr Asp Val
 275 280 285
 Ile Ser Met His Gln Ser Gly Val Glu Asn Val Val Ala Ser Ser Gly
 290 295 300
 Thr Ser Leu Thr Pro Gly Gln Ile Arg Leu Ile His Arg Phe Thr Asn
 305 310 315 320
 Asn Ile Thr Val Leu Tyr Asp Gly Asp Met Ala Gly Ile Lys Ala Ser
 325 330 335
 Ile Arg Gly Ile Asp Met Leu Leu Glu Gly Met Asn Ile Lys Val
 340 345 350
 Cys Leu Leu Pro Asp Gly Asp Asp Pro Asp Ser Phe Ala Arg Lys His
 355 360 365
 Asn Ala Thr Glu Phe Gln Asn Phe Ile Gln Glu His Glu Thr Asp Phe
 370 375 380
 Ile Arg Phe Lys Ala Gln Leu Leu Met Glu Asp Ala Gly Lys Asp Pro
 385 390 395 400
 Met Lys Arg Ala Glu Leu Ile Asn Asp Ile Val Arg Ser Ile Ala Val
 405 410 415
 Ile Pro Glu Ala Ile Val Arg Asp Val Tyr Ile Lys Glu Cys Gly Gln
 420 425 430
 Leu Leu Arg Ile Glu Asp Lys Leu Leu Val Ser Glu Val Ala Lys Arg
 435 440 445
 Arg Glu Leu Gln Ala Glu Lys Gly Asn Lys Pro Ile Ala Ser Asn Asn
 450 455 460
 Ala Pro Thr Pro Gln Pro Gly Glu Met Pro Pro Phe Pro Pro Glu
 465 470 475 480
 Glu Met Glu Ala Asp Thr Tyr Gln Ser Phe Ile Pro Gln Glu Gly Lys
 485 490 495
 Glu Gly Gln Glu Phe Tyr Lys Tyr Glu Arg Leu Ile Ile Gln Met Ile
 500 505 510
 Val Arg Tyr Gly Glu Lys Val Met Cys Asn Leu Thr Asp Glu Glu Gly
 515 520 525
 Asn Glu Val Pro Val Thr Val Val Glu Tyr Val Ile Asn Asp Leu Lys
 530 535 540
 Glu Asp Glu Leu Ala Phe His Asn Pro Leu His Arg Gly Ile Leu Ser
 545 550 555 560
 Glu Ala Ser Glu His Ile His Asp Gln Glu Phe Ala Ser Glu Arg Phe
 565 570 575
 Phe Val Ala His Pro Asp Pro Lys Ile Ser Thr Ile Ala Thr Glu Leu
 580 585 590
 Ala Ser Asp Arg Tyr Gln Leu Ser Lys Tyr His Ser Lys Thr Gln Lys
 595 600 605
 Leu Val Thr Asp Glu Glu Arg Leu Tyr Glu Met Val Pro Met Leu Met
 610 615 620
 Ile Asn Phe Lys Asn Ala Ile Val Ala Glu Glu Leu Lys His Ile Met

625 630 635 640
 Tyr Ala Leu Gln Asp Pro Ser Ile Ala Asn Asp Asn Ala Gln Cys Asp
 645 650 655
 Ala Val Met Gln Arg Tyr Lys Glu Met Lys Glu Ile Gln Asn Leu Met
 660 665 670
 Ala Lys Arg Leu Gly Asp Arg Val Val Leu Arg
 675 680

<210> 7440
 <211> 534
 <212> PRT
 <213> B.fragilis

<400> 7440
 Asn Ile Thr Asp Met Lys Phe Val Thr Leu Ser Leu Leu Ala Thr Ala
 1 5 10 15
 Leu Thr Val Gly Gly Asn Ala Ala Glu Gln Ala Arg Ser Ser Lys Gln
 20 25 30
 Pro Asn Ile Leu Phe Ile Leu Ala Asp Asp Phe Gly Trp Arg Asp Leu
 35 40 45
 Ala Cys Thr Gly Ser Arg Tyr Tyr Glu Ser Pro Asn Ile Asp Gly Ile
 50 55 60
 Ala Arg Asn Gly Val Arg Phe Thr Gln Gly Tyr Ala Ala Cys Gln Val
 65 70 75 80
 Ser Ser Pro Ser Arg Ala Ser Ile Met Thr Gly Lys Phe Thr Ala Arg
 85 90 95
 His Gly Ile Thr Asn Trp Ile Gly Glu Gly Ser Gly Glu Glu Trp Arg
 100 105 110
 Lys Met Gly Arg His Ser Lys Leu Leu Pro Ala Gln Tyr Val Trp Gln
 115 120 125
 Leu Pro Lys Glu Asp Ile Thr Leu Pro Glu Ala Leu Lys Ala His Gly
 130 135 140
 Tyr Lys Thr Phe Met Ala Gly Lys Trp His Leu Gly Gly Glu Gly Ser
 145 150 155 160
 Tyr Pro Glu Asp His Gly Phe Asp Ile Asn Ile Gly Gly His Glu Ala
 165 170 175
 Gly Gly Pro Tyr Pro Gly Gly Tyr Phe Ala Pro Tyr Gly Asn Pro Lys
 180 185 190
 Met Lys Glu Gly Pro Asp Gly Glu Asn Leu Ser Met Arg Leu Ala His
 195 200 205
 Glu Thr Ala Ser Phe Ile Glu Thr His Thr Arg Arg Asn Lys Lys Gln
 210 215 220
 Pro Phe Phe Ala Phe Leu Ser Phe Tyr Ala Val His Ala Pro Ile Glu
 225 230 235 240
 Thr Thr Glu Ala Lys Trp Arg His Phe Arg Asn Lys Ala Asp Ser Met
 245 250 255
 Gly Ile Ala Pro Met Gly Phe Glu Val Asp Arg Thr Leu Pro Val Arg
 260 265 270
 Leu Gln Gln Asp Asn Pro Ile Tyr Ala Gly Leu Ile Gln Gln Met Asp
 275 280 285
 Asp Ala Val Gly Val Val Leu Ala Lys Leu His Glu Leu Gly Leu Asp
 290 295 300
 Glu Asn Thr Ile Ile Val Phe Thr Ser Asp Asn Gly Gly Val Ser Ser
 305 310 315 320
 Gly Asp Ala Tyr Ala Thr Ser Asn Tyr Pro Leu Arg Gly Gly Lys Gly
 325 330 335
 Arg Gln Trp Glu Gly Gly Ile Arg Val Pro Leu Phe Ile Asp Phe Pro
 340 345 350
 Gly Asn Thr Leu Lys Gly Asp Ser Cys Val Val Pro Val Thr Gly Ala

355 360 365
 Asp Leu Tyr Pro Thr Phe Leu Asp Met Ala Gly Ile Pro Leu Met Pro
 370 375 380
 Gly Gln His Gln Asp Gly Val Ser Leu Leu Pro Leu Leu Gln Gly Lys
 385 390 395 400
 Ser Ile Pro Glu Arg Ala Leu Tyr Trp His Tyr Pro His Tyr Gly Asn
 405 410 415
 Gln Gly Gly Glu Pro Ser Ser Ile Ile Arg Gln Gly Asp Trp Lys Leu
 420 425 430
 Ile His Tyr Tyr Glu Asp Gly Arg Asp Glu Leu Tyr Asn Leu Arg Ile
 435 440 445
 Asp Glu Thr Glu Ser Glu Pro Leu Asn Val Gln Tyr Pro Glu Lys Val
 450 455 460
 Glu Phe Leu Ser Lys Lys Leu Ser Val Trp Leu Thr Glu Val Gly Ala
 465 470 475 480
 Arg Tyr Pro Glu Pro Asp Pro Gln Tyr Asn Pro Ala Ala Glu Ala Leu
 485 490 495
 Tyr Lys Lys Lys Thr Arg Glu Arg Met Met Arg Thr Leu Glu Ala Thr
 500 505 510
 Arg Lys Lys Gln Leu Gly Lys Asp Phe Lys Pro Asn Ala Asp Trp Trp
 515 520 525
 Gly Ser Glu Thr Lys Asp
 530

<210> 7441
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 7441
 Ile Asp Met Glu Leu Glu Ser Ile Leu Leu Pro Gly Val Glu Asp Lys
 1 5 10 15
 Arg Pro Met Val Ile Ala Gly Pro Cys Ser Ala Glu Thr Glu Glu Gln
 20 25 30
 Val Met Ser Thr Ala Thr Gln Leu Ala Ala Lys Gly Val Lys Ile Phe
 35 40 45
 Arg Ala Gly Ile Trp Lys Pro Arg Thr Lys Pro Gly Gly Phe Glu Gly
 50 55 60
 Ile Gly Val Asp Gly Leu Ala Trp Leu Lys Glu Val Lys Lys Glu Thr
 65 70 75 80
 Gly Met Tyr Val Ser Thr Glu Val Ala Thr Ala Lys His Val Tyr Glu
 85 90 95
 Cys Leu Lys Ala Gly Ile Asp Val Leu Trp Val Gly Ala Arg Thr Thr
 100 105 110
 Ala Asn Pro Phe Ala Val Gln Glu Ile Ala Asp Ala Leu Lys Gly Val
 115 120 125
 Asp Ile Pro Val Leu Val Lys Asn Pro Val Asn Pro Asp Leu Glu Leu
 130 135 140
 Trp Ile Gly Ala Leu Glu Arg Ile Asn Asn Ala Gly Leu Lys Arg Leu
 145 150 155 160
 Gly Ala Ile His Arg Gly Phe Ser Ser Tyr Asp Lys Lys Leu Tyr Arg
 165 170 175
 Asn Leu Pro Gln Trp His Ile Pro Ile Glu Leu Arg Arg Arg Ile Pro
 180 185 190
 Glu Leu Pro Ile Phe Cys Asp Pro Ser His Ile Gly Gly Lys Arg Glu
 195 200 205
 Leu Val Ala Pro Leu Cys Gln Gln Ala Met Asp Leu Asn Phe Asp Gly
 210 215 220
 Leu Ile Val Glu Ser His Cys Asn Pro Asp Cys Ala Trp Ser Asp Ala

225 230 235 240
 Ser Gln Gln Val Thr Pro Asp Val Leu Asp Tyr Ile Leu Asn Leu Leu
 245 250 255
 Val Ile Arg Lys Glu Thr Gln Thr Thr Glu Asn Leu Asn Val Leu Arg
 260 265 270
 Lys Gln Ile Asp Glu Cys Asp Asp Asn Ile Ile Gln Glu Leu Ala Lys
 275 280 285
 Arg Met Arg Val Ala Arg Glu Ile Gly Thr Tyr Lys Lys Glu His Asp
 290 295 300
 Ile Thr Val Leu Gln Thr Gly Arg Tyr Asn Glu Ile Leu Glu Lys Arg
 305 310 315 320
 Gly Ala Gln Gly Glu Gln Cys Gly Met Ser Ala Glu Phe Val Lys Val
 325 330 335
 Ile Phe Glu Ala Ile His Glu Glu Ser Val Arg Gln Gln Met Glu Ile
 340 345 350
 Ile Asn Lys
 355

<210> 7442
 <211> 300
 <212> PRT
 <213> B.fragilis

<400> 7442
 Tyr Glu Ser Arg Ser Asp Met Asp Ala Gly Phe Phe Tyr Thr Ile Tyr
 1 5 10 15
 Ser Ile Gly Met Lys Arg Ile Ala Ile Gln Gly Thr Leu Gly Ser Tyr
 20 25 30
 His Asp Ile Ala Ala His Lys Tyr Phe Glu Gly Glu Glu Ile Glu Leu
 35 40 45
 Ile Cys Cys Ala Asn Phe Glu Asp Val Phe Ala Ala Ile Arg Lys Asp
 50 55 60
 Ser Gln Thr Ile Gly Met Leu Ala Ile Glu Asn Thr Ile Ala Gly Ser
 65 70 75 80
 Leu Leu His Asn Asn Glu Leu Leu Arg Gln Ser Gly Thr Gln Ile Ile
 85 90 95
 Gly Glu Tyr Lys Leu Arg Ile Ser His Ser Phe Val Cys Leu Pro Glu
 100 105 110
 Glu Asp Trp Asn Asp Ile Thr Glu Val Asn Ser His Pro Ile Ala Leu
 115 120 125
 Met Gln Cys Arg Glu Phe Leu Asn Gln His Pro Arg Ile Lys Val Val
 130 135 140
 Glu Ala Glu Asp Thr Ala Leu Ser Ala Glu Ile Ile Lys Arg Glu Asn
 145 150 155 160
 Leu Lys Gly His Ala Ala Ile Cys Ser Arg Ala Ala Ala Glu Arg Tyr
 165 170 175
 Gly Met Lys Val Leu Gln Glu Gly Ile Glu Thr Asn Lys His Asn Phe
 180 185 190
 Thr Arg Phe Leu Val Val Ala Asp Pro Trp Gln Val Asp Glu Ile Arg
 195 200 205
 Lys Gln Asn Thr Val Leu Asn Lys Ala Asn Ile Val Phe Thr Leu Pro
 210 215 220
 His Ser Glu Gly Ser Leu Ser Gln Val Leu Ser Ile Leu Ser Phe Tyr
 225 230 235 240
 Asn Ile Asn Leu Thr Lys Ile Gln Ser Leu Pro Ile Ile Gly Arg Glu
 245 250 255
 Trp Glu Tyr Gln Phe Tyr Val Asp Val Ala Phe Asn Asp Tyr Leu Arg
 260 265 270
 Tyr Lys Gln Ser Ile Thr Ala Ile Thr Pro Leu Thr Lys Glu Leu Lys

275 280 285
 Ile Leu Gly Glu Tyr Ala Glu Gly Lys Ser Asn Val
 290 295 300

<210> 7443
 <211> 521
 <212> PRT
 <213> B.fragilis

<400> 7443

Leu Val Ser Gly Lys Val Ile Val Trp Arg Gly Ala Phe Val Lys Arg
 1 5 10 15
 Ser Ser Phe Glu Trp Ser Tyr Lys Lys Asn Gly Asn Met Lys Arg Leu
 20 25 30
 Ile Leu Pro Ile Ala Cys Gly Ile Cys Thr Val Thr Ser Asp Ala Gln
 35 40 45
 Thr Asp Lys Gln Pro His Pro Asn Val Ile Phe Ile Tyr Ala Asp Asp
 50 55 60
 Leu Gly Tyr Lys Asp Leu Ser Cys Thr Gly Ser Arg Phe Tyr Glu Thr
 65 70 75 80
 Pro His Ile Asp Lys Leu Ala Arg Glu Gly Val Trp Phe Thr Gln Ser
 85 90 95
 Tyr Ala Ala Cys Pro Val Ser Ser Pro Ser Arg Ala Ala Leu Leu Thr
 100 105 110
 Gly Lys Tyr Pro Ala Arg Ile Asn Leu Thr Asp Tyr Ile Pro Gly Asp
 115 120 125
 Arg Ala Tyr Gly Pro His Lys Asn Gln Arg Leu Ala Ser Leu Pro Phe
 130 135 140
 Asn Leu His Leu Ser Lys Asp Glu Ile Thr Met Ala Glu Ala Phe Arg
 145 150 155 160
 Gln Asn Gly Tyr Ser Thr Phe Met Ala Gly Lys Trp His Leu Ala Glu
 165 170 175
 Ser Ala Glu Tyr Tyr Pro Glu Gln Asn Gly Phe Asp Ile Asn Ile Gly
 180 185 190
 Gly Asn Asn Thr Gly His Pro Ser Lys Gly Tyr Phe Ser Pro Tyr Gly
 195 200 205
 Asn Pro Gln Leu Lys Asp Gly Pro Glu Gly Glu Tyr Leu Thr Asp Arg
 210 215 220
 Leu Thr Asp Glu Val Ile Arg Tyr Ile Ser Glu Pro Lys Glu Lys Pro
 225 230 235 240
 Phe Phe Val Tyr Leu Ser Tyr Tyr Thr Val His Leu Pro Leu Gln Ala
 245 250 255
 Lys Ala Glu Lys Ile Ala Lys Tyr Arg Arg Arg Leu Ser Arg Ala Val
 260 265 270
 Pro Ala Asp Ser Ser Phe Val Lys Lys Gly Glu Thr Tyr His Lys Leu
 275 280 285
 Val Gln Asp Ile Pro Ala Tyr Ala Ala Met Val Glu Ser Leu Asp Glu
 290 295 300
 Asn Ile Gly Arg Leu Leu Asp Thr Leu His Arg Ser Gly Leu Asp Glu
 305 310 315 320
 Arg Thr Ile Val Val Phe Thr Ser Asp Asn Gly Gly Met Ala Thr Ser
 325 330 335
 Asn Thr Thr Arg Asn Ile Pro Thr Ser Asn Leu Pro Leu Arg Ala Gly
 340 345 350
 Lys Gly Tyr Leu Tyr Glu Gly Gly Ile Lys Val Pro Ala Ile Ile Arg
 355 360 365
 Trp Ser Gly His Leu Lys Gly Arg Gln Val Ser Asp Thr Pro Ile Ile
 370 375 380
 Gly Thr Asp Tyr Tyr Pro Thr Leu Leu Asp Leu Cys Gly Leu Arg Leu

385 390 395 400
 Leu Pro Gly Gln His Val Asp Gly Val Ser Met Lys Pro Val Leu Gln
 405 410 415
 Gly Gly Arg Leu Ser Arg Pro Ser Leu Phe Trp His Tyr Pro His Tyr
 420 425 430
 Ser Gly Gly Leu Gly Gly Arg Pro Ser Ala Ala Ile Arg Glu Gly Asp
 435 440 445
 Tyr Lys Leu Ile Glu Phe Phe Glu Asp His His Val Glu Leu Tyr Asn
 450 455 460
 Val Ile Gln Asp Glu Ser Glu Glu Lys Asp Leu Ser Gln Ile Tyr Pro
 465 470 475 480
 Glu Ile Ala Asp Gly Leu Arg Lys Lys Leu Tyr Leu Trp Tyr Lys Glu
 485 490 495
 Val Gly Ala Arg Met Pro Val Asp Asn Pro His Tyr Val Ser Pro Val
 500 505 510
 Lys Asp Ser Asp Ser Phe Glu Asn Lys
 515 520

<210> 7444

<211> 63

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (57)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7444

Phe Asn Phe Ile Tyr Lys Phe Leu Asp Gln Gln Lys Val Ala Gln Asp
 1 5 10 15
 Leu Pro Cys Gln Lys Phe His Leu Ile Leu Val Leu Gln Lys Glu Asn
 20 25 30
 Lys Gln Asn Ser Asn Met Thr Trp Pro Lys Ile Gln Ile Lys Ser Glu
 35 40 45
 Lys Leu Thr Thr Phe Trp Arg Ile Xaa Phe Ile His Gly Arg Asn
 50 55 60

<210> 7445

<211> 313

<212> PRT

<213> B.fragilis

<400> 7445

Asp Arg Leu Met Lys Ile Glu Lys Glu Ile Leu Tyr Arg Tyr Phe Asn
 1 5 10 15
 Gly Asp Ala Thr Pro Glu Glu Glu His Lys Ile Arg Gln Tyr Leu Glu
 20 25 30
 Ala Ser Asp Glu Asn Trp Lys Glu Tyr Leu Arg Glu Arg Lys Phe Phe
 35 40 45
 Asp Thr Ile Ile Leu Lys Glu Gln Val Val Ser Glu Glu Lys Gln Met
 50 55 60
 Lys Arg Arg Gln Leu Ile Arg Lys Ile Ser Leu Glu Cys Leu Lys Val
 65 70 75 80
 Ala Ala Val Leu Leu Ile Ala Phe Gly Thr Ala Phe Phe Trp Asn Asn
 85 90 95
 Gln Ser Glu Lys Pro Ala Thr Lys Ser Val Val Asn Thr Leu Lys Gly
 100 105 110
 Gln Met Ala Asn Ile Thr Leu Pro Asp Gly Ser Arg Val Trp Leu Asn

115	120	125
Ser Asn Thr Arg Ile Glu Tyr Ser Gln His Phe Asp Asp Lys Arg Glu		
130	135	140
Val Gln Ile Asp Gly Glu Ala Tyr Phe Glu Val Val Arg Asn Thr Gly		
145	150	155
Arg Pro Phe Ile Val Tyr Thr Pro Asp Asp Glu Gln Val Glu Val Leu		
165	170	175
Gly Thr Lys Phe Tyr Val Glu Ala Tyr Ser Gly Thr Lys Lys Phe Glu		
180	185	190
Thr Ala Leu Ile Glu Gly Ser Val Arg Val Arg Ala Ala Asn Ser Gln		
195	200	205
Phe Ile Leu Gln Pro Ser Tyr Lys Ala Val Leu Lys Gly Gly Lys Met		
210	215	220
Ser Val Glu Lys Ile Thr Asp Phe Asp Ile Tyr Arg Trp Arg Glu Gly		
225	230	235
Leu Ile Cys Phe Lys Asn Arg His Phe Ser Glu Ile Leu Glu Glu Leu		
245	250	255
Lys Lys Tyr Tyr Gly Val His Ile Arg Phe Asp Ala Ala Lys Ile Asn		
260	265	270
Asn Pro Val Leu Thr Val Lys Phe Arg Leu Ser Asp Gly Ile Glu Tyr		
275	280	285
Ala Leu Arg Val Leu Gln Lys Asp Val Lys Phe Lys Tyr Val Arg Asn		
290	295	300
Asp Glu Glu Asn Thr Phe Val Ile Lys		
305	310	

<210> 7446
 <211> 99
 <212> PRT
 <213> B.fragilis

<400> 7446
Ile Val Ile Ile Leu Tyr Asn Ile Lys Thr Pro Ser Leu Ser Ser Leu
1 5 10 15
Ala Asp Gln Val His Lys Leu Phe Thr Gly Leu Ser Leu Ile Lys Ser
20 25 30
Ser Cys Lys Val Gly Ser Ser Ser Tyr Gly Ile Leu Phe Phe His Ser
35 40 45
Ala His Leu His Thr His Met Leu Gly Phe His His Asp His Tyr Ala
50 55 60
Gln Arg Ile Gln Arg Phe Leu Asn Thr Leu Phe Asn Leu Gln Arg His
65 70 75 80
Pro Phe Leu His Leu Gln Pro Met Arg Glu Asn Ile Asp His Thr Gly
85 90 95
Tyr Phe Thr

<210> 7447
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 7447
Gln Asn Ser Met Ser Ala Thr Ile Asn Asp Leu Ala Ser Phe Asn Lys
1 5 10 15
Phe Phe Thr Glu Asn Gln His Arg Phe Ile Arg Phe Ala Trp Thr Tyr
20 25 30
Thr Arg Asp Glu Val Val Ala Glu Asp Ile Val Met Glu Ser Leu Met
35 40 45

Ala Tyr Trp Glu Asn Arg Asp His Met Thr Pro Glu Ile Asn Pro Ala
 50 55 60
 Ala Tyr Val Leu Thr Val Val Lys Asn Lys Cys Leu Asn Tyr Leu Arg
 65 70 75 80
 His Leu Gln Leu Val Asn Asp Val Ser Asp Arg Val Ala Ser His Ser
 85 90 95
 Glu Trp Glu Leu Ser Asn Arg Ile Ala Thr Leu Asp Ala Cys Glu Pro
 100 105 110
 Asn Ala Leu Phe Ala Ser Glu Val Gln Asp Ile Ile Asp Arg Val Ile
 115 120 125
 Ser Arg Leu Ser Ala Thr Thr Ala Arg Ile Phe Leu Leu Ser Arg Tyr
 130 135 140
 Asp Asn Lys Ser His Lys Glu Ile Ala Glu Ile Met Gly Met Thr Val
 145 150 155 160
 Lys Gly Val Glu Phe His Ile Ser Lys Ala Thr Lys Glu Leu Arg Val
 165 170 175
 Ala Leu Lys Asp Tyr Leu Val Leu Phe Pro Phe Leu Cys Asp Phe Leu
 180 185 190
 Ser Arg Asn
 195

<210> 7448
 <211> 1128
 <212> PRT
 <213> B.fragilis

<400> 7448
 Ser Lys Asp Met Lys Asn Thr Arg Cys Thr Asp Phe Cys Val Pro Lys
 1 5 10 15
 Asn Ser Ser Ile Lys Gln Leu Leu Lys Thr Met Arg Val Thr Ile Phe
 20 25 30
 Leu Leu Phe Phe Cys Val Phe Ser Thr Ile Ala Gly Thr Val Asn Ser
 35 40 45
 Gln Asn Ala Arg Val Ser Ile His Lys Thr Asn Val Pro Leu Glu Glu
 50 55 60
 Ile Leu Asn Glu Ile Glu His Gln Thr Asp Tyr Leu Phe Met Tyr Ser
 65 70 75 80
 Asn Asn Ile Asp Val Lys Glu Arg Thr Ser Ile Arg Val Ser Glu Lys
 85 90 95
 Pro Val Ser Glu Val Leu Lys Lys Leu Leu Gly Asn Lys Ile Ala Tyr
 100 105 110
 Glu Met Glu Gly Met His Ile Ile Leu Ser Asp Lys Arg Glu Asn Gln
 115 120 125
 Thr Ala Ile Ala Gln Gln Ala Asn Lys Ile Gln Val Lys Gly Asn Val
 130 135 140
 Thr Asp Met Ala Gly Glu Pro Val Ile Gly Ala Ser Ile Leu Glu Lys
 145 150 155 160
 Gly Thr Thr Asn Gly Ile Val Thr Asp Phe Asn Gly Asp Phe Ser Leu
 165 170 175
 Asn Val Asn Pro Gly Ala Val Leu Val Val Ser Tyr Ile Gly Tyr Ser
 180 185 190
 Ala Gln Glu Val Lys Val Ile Pro Gly Lys Val Leu Lys Ile Lys Ile
 195 200 205
 Lys Glu Asp Ala Glu Leu Leu Asp Glu Val Val Val Gly Tyr Gly
 210 215 220
 Thr Gln Lys Lys Val Asn Leu Thr Gly Ala Val Glu Thr Val Asp Ala
 225 230 235 240
 Asp Val Ile Glu Asn Arg Pro Ile Arg Ser Ala Thr Asp Ala Leu Gln
 245 250 255

Gly Thr Val Ser Gly Leu Thr Val Thr Ser Gly Thr Gly Lys Pro Gly
 260 265 270
 Glu Phe Ala Ser Phe Lys Ile Arg Gly Asn Thr Ser Val Asn Ser Ala
 275 280 285
 Gly Ala Leu Val Ile Ile Asp Gly Met Pro Gly Asp Ile Asn Thr Val
 290 295 300
 Asn Pro Gln Asp Ile Glu Thr Ile Ser Val Leu Lys Asp Ala Ala Ser
 305 310 315 320
 Ala Ala Ile Tyr Gly Ala Arg Ala Ala Glu Gly Val Val Leu Val Thr
 325 330 335
 Thr Lys Lys Gly Thr Ser Glu Lys Val Lys Val Glu Tyr Thr Gly Asn
 340 345 350
 Phe Ser Phe Asn Thr Pro Thr Arg Leu Pro Glu Ser Asn Thr Gly Leu
 355 360 365
 Asp His Ala Leu Leu Ser Asn Val Ala Phe Thr Asn Ala Gly Leu Ala
 370 375 380
 Ile Pro Phe Ser Gln Lys Ala Ile Asp Ala Ile Lys Asp Pro Asn Thr
 385 390 395 400
 Ile Ala Ile Pro Asn Gly Lys Glu Trp Thr Tyr Thr Ser Asp Met Asp
 405 410 415
 Trp Ile Asp Leu Met Met Asp His Ser Phe Gln Gln Thr His Asn Leu
 420 425 430
 Thr Ile Ser Lys Ala Ser Asp Arg Leu Lys Tyr Leu Phe Ser Ile Gly
 435 440 445
 Trp Leu Asp Gln Asn Gly Met Phe Ser Glu Tyr Gly Pro Asp Asn Tyr
 450 455 460
 Asp Arg Ile Asn Leu Arg Ser Asn Ile Ser Val Glu Leu Ile Lys Asp
 465 470 475 480
 Lys Leu Ser Leu Asp Ser Arg Ile Ser Tyr Ser Arg Gly Val Asn Leu
 485 490 495
 Tyr His Ala Ala Glu Gly Ser Trp Ser Ile Pro Tyr Ile Thr Phe Ile
 500 505 510
 Gln Ala Gly Pro Asn Met Pro Val Tyr Asp Pro Asn Gly Asn Tyr Ser
 515 520 525
 Arg His Arg Met Gln Leu Asn Pro Ile Gln Ala Leu Lys Glu Gly Gly
 530 535 540
 Glu Gly Arg Thr Arg Asn Gln Arg Ile Glu Gly Val Phe Thr Leu Glu
 545 550 555 560
 Tyr Lys Pro Val Lys Gly Leu Ser Leu Arg Ala Val Gly Gly Ala Asn
 565 570 575
 Ile Leu Asp Gly Gln Lys Lys Glu Trp Arg Arg Ala Tyr Gly Lys Tyr
 580 585 590
 Gly Val Asp Gly Leu Ile Ser Thr Ala Phe Gly Gln Lys Ser Pro Asn
 595 600 605
 Ser Val Thr Gln Asn Asn Ser His Arg Gln Tyr Leu Thr Gly Gln Leu
 610 615 620
 Ile Ala Glu Tyr Lys Gly Val Phe Gly Lys His Asp Ile Asn Val Leu
 625 630 635 640
 Gly Gly Trp Ser Ala Glu Glu Asn Leu Tyr Glu Asp Leu Gln Gly Lys
 645 650 655
 Arg Thr Asn Ile Val Gly Asn Glu Leu Pro Ala Leu Asn Leu Gly Asp
 660 665 670
 Thr Asp Gly Trp Ser Asn Ala Ala Asp Glu Asn Glu Trp Ala Leu Leu
 675 680 685
 Ser Gly Phe Met Arg Ala Ser Tyr Ala Phe Ala Ala Lys Tyr Leu Val
 690 695 700
 Glu Val Asn Phe Arg Ala Asp Ala Ser Ser Arg Phe Ser Tyr Lys Asn
 705 710 715 720
 Arg Trp Gly Val Phe Pro Ser Ala Ser Val Gly Trp Arg Ile Thr Glu


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<210> 7449
<211> 493
<212> PRT
<213> B.fragilis
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1	5	10	15
Ile Leu Cys Cys Thr Trp Ile Cys Ser Cys Ser Leu Leu Glu Val Asp			
20	25	30	
Pro Val Ser Thr Ile Thr Ser Gln Ser Phe Trp Lys Thr Pro Gly Asp			
35	40	45	
Ala Lys Ala Tyr Leu Thr Gly Ile Tyr Asn Lys Val Arg Asp Leu Asn			
50	55	60	
Asn Thr Ser Tyr Tyr Gly Glu Asp Arg Gly Asp Ala Phe Lys Ala Gly			
65	70	75	80
Glu Ile Gly Pro Thr Ser Val Ala Trp Ala His Thr Leu Leu Glu Ser			
85	90	95	
Asn Ala Pro Ser Tyr Arg Ser Ala Tyr Asn Ile Ile His His Ala Asn			
100	105	110	
Leu Leu Phe Asn Lys Ile Glu Ser Leu Lys Phe Thr Asn Glu Thr Glu			
115	120	125	
Lys Asn Arg Ile Lys Ala Glu Cys His Phe Leu Arg Ala Tyr Thr Tyr			
130	135	140	
Phe Leu Ile Val Arg Ile Trp Gly Asp Ala Pro Ile Ile Thr Asp Pro			
145	150	155	160
Val Leu Ser Asp Asn Val Glu Leu Lys Pro Arg Ser Pro Lys Glu Asp			
165	170	175	
Val Met Lys Leu Ile Leu Glu Asp Ile Glu Gln Ala Val Leu Leu Phe			
180	185	190	
Pro Glu Asp Gly Tyr Ile Asn Lys Asn Leu Ala Ser Lys Pro Ala Ala			
195	200	205	
Tyr Ala Leu Lys Ala Asp Val Leu Met Trp Lys Ala Lys Val Leu Asn			
210	215	220	
Gly Gly Asn Ala Asp Leu Glu Glu Ala Ile Lys Ala Ile Asp Gln Val			
225	230	235	240
Gly Gly Ser Gly Val Ser Leu Leu Pro Asp Tyr Ala Lys Val Phe Ala			
245	250	255	
Asn Asp Asn Lys Lys Asn Asn Glu Ile Ile Phe Ser Phe Tyr Phe Glu			
260	265	270	
Arg Tyr Glu Thr Gly Asn Leu Ser Ile Ala Thr Asn Thr Thr Ser Arg			
275	280	285	
Thr Asp Asn Leu Ser Met Ala Val Asn Leu Ala Asp Ala Ala Thr Ser			
290	295	300	
Pro Asn Gln Ser Arg His Val Tyr Ala Pro Ser Asp Lys Ala Arg Glu			
305	310	315	320
Leu Tyr Leu Lys Tyr Pro Gly Asp Arg Arg Tyr Lys Val Ala Met Ile			
325	330	335	
Asp Leu Val Asp Lys Asp Gly Asn Leu Ile Leu Thr Gln Thr Asn Lys			
340	345	350	
Phe Arg Gly Lys Ala Tyr Ser Asp Asp Arg Tyr Phe Asp Asp Asp Leu			
355	360	365	
Ile Ala His Arg Trp Gly Asp Leu Leu Leu Leu Arg Ala Glu Ala Asn			
370	375	380	
Ala Ala Leu Asn Lys Ile Ser Glu Ser Leu Val Asp Leu Asn Glu Val			
385	390	395	400
Arg Asp Arg Ala Gly Leu Glu Pro Tyr Asp Gly Pro Lys Asp Lys Ile			
405	410	415	
Ala Val Glu Lys Glu Ile Cys Asp Glu Arg Leu Arg Glu Leu Phe Ile			
420	425	430	
Glu Gln Lys Arg Trp Phe Asp Leu Val Arg Phe His Cys Gly Gly Thr			
435	440	445	
Ile Asp Ile Tyr Lys Glu Val Pro Asn Leu Asn Asp Lys Pro Gly Tyr			
450	455	460	
Pro Leu Tyr Phe Pro Ile Asn Tyr Asn Asp Met Val Leu Asn Asp Lys			
465	470	475	480

Leu Val Gln Thr Asp Gly Tyr Glu Ser Asn Val Glu Arg
 485 490

<210> 7450
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 7450
 Tyr Ser Ser Val Ile Met Leu Glu Lys Glu Glu Ile Ile Ser Pro Ala
 1 5 10 15
 Leu Glu Asp Leu Lys Asn His Tyr Arg Ser Ile Ile Thr Leu Leu Gly
 20 25 30
 Glu Asp Ala Glu Arg Glu Gly Leu Leu Lys Thr Pro Glu Arg Val Ala
 35 40 45
 Lys Ala Met Leu Thr Leu Thr Lys Gly Tyr His Met Asp Pro His Glu
 50 55 60
 Val Leu Arg Ser Ala Lys Phe Gln Glu Glu Tyr Ser Gln Met Val Ile
 65 70 75 80
 Val Lys Asp Ile Asp Phe Phe Ser Leu Cys Glu His His Met Leu Pro
 85 90 95
 Phe Tyr Gly Lys Ala His Val Ala Tyr Ile Pro Asn Gly Tyr Ile Thr
 100 105 110
 Gly Leu Ser Lys Ile Ala Arg Val Val Asp Ile Phe Ser His Arg Leu
 115 120 125
 Gln Val Gln Glu Arg Met Thr Leu Gln Ile Lys Glu Cys Ile Gln Glu
 130 135 140
 Thr Leu Asn Pro Leu Gly Val Met Val Val Val Glu Ala Lys His Met
 145 150 155 160
 Cys Met Gln Met Arg Gly Val Glu Lys Gln Asn Ser Val Thr Thr Thr
 165 170 175
 Ser Asp Phe Thr Gly Ala Phe Asn Gln Ala Lys Thr Arg Glu Glu Phe
 180 185 190
 Met Asn Leu Ile Arg Gln Arg
 195

<210> 7451
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 7451
 Tyr Ile Gly Leu Ser Leu Leu Met Phe Ala Lys Trp Asp Val Ser Val
 1 5 10 15
 Leu Lys Met Leu Val Phe Leu Leu Lys Thr Ser Phe Ile Cys Gln Thr
 20 25 30
 Asn Lys Ile Asn Leu Ile Leu Thr Lys Leu Asn Cys Tyr Thr Met Asp
 35 40 45
 Thr Leu Lys Leu His Gly Gln Ala Ile Thr Leu Val Asp Gln Val Glu
 50 55 60
 Asp Asn Leu Leu Thr Tyr Phe Arg Thr Lys Asp Leu Arg Ala Gly Asp
 65 70 75 80
 Ala Ile Pro Asn Glu Met Glu Leu Ala Ala Ala Leu Gly Val Ala Arg
 85 90 95
 Ser Val Leu Arg Glu Ala Leu Ser Arg Leu Lys Met Val Gly Met Ile
 100 105 110
 Glu Thr Arg Thr Arg Arg Gly Met Ile Leu Thr Glu Pro Ser Ile Leu
 115 120 125
 Gly Gly Met Lys Arg Val Val Asp Pro Arg Ile Leu Ser Glu His Ser

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<210> 7452
<211> 542
<212> PRT
<213> B.fragilis
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<400>	7452														
His	Phe	Asn	Ser	Trp	Ser	Lys	Met	Lys	Asn	Ile	Tyr	Leu	Phe	Leu	Leu
1				5					10					15	
Ser	Val	Val	Ile	Leu	Cys	Ser	Cys	Asn	Asp	Phe	Leu	Asp	Arg	Glu	Pro
			20					25					30		
Lys	Thr	Asn	Leu	Ser	Pro	Gly	Ser	Phe	Trp	Lys	Ser	Glu	Glu	Asp	Leu
		35				40						45			
Arg	Leu	Ala	Ala	Asn	Val	Phe	Tyr	Gln	Asn	Met	Asn	Arg	Ser	Tyr	Thr
	50					55					60				
Leu	Asp	Asn	Gln	Ser	Ala	Asp	Gly	Phe	Ala	Asn	Val	Gly	Asn	Leu	Val
65				70						75				80	
Ser	Ser	Gly	Thr	His	Ala	Pro	Gly	Asn	Thr	Asp	Gly	Ile	Trp	Thr	Thr
			85						90					95	
Ala	Tyr	Lys	Gln	Ile	Arg	His	Ala	Asn	Asn	Phe	Leu	Glu	Asn	Tyr	Glu
			100					105					110		
Lys	Ala	Glu	Val	Ser	Glu	Ala	Thr	Lys	Asn	Arg	Tyr	Ala	Gly	Glu	Ala
		115					120					125			
Arg	Phe	Phe	Arg	Ala	Tyr	Phe	Tyr	Phe	Asn	Leu	Val	Lys	Arg	Phe	Gly
	130					135					140				
Asp	Val	Pro	Tyr	Val	Leu	Arg	Thr	Leu	Asp	Met	Asp	Ser	Glu	Glu	Leu
145				150						155					160
Met	Gly	Pro	Arg	Val	Pro	Lys	Glu	Gln	Val	Ile	Ala	Gly	Ile	Ile	Glu
			165						170					175	
Asp	Leu	Glu	Phe	Ala	Glu	Thr	His	Ile	Pro	Leu	Lys	Ser	Lys	Leu	Pro
			180					185					190		
Thr	Asp	Val	Gly	Arg	Leu	Thr	Lys	Gly	Ala	Ala	Gln	Ala	Met	Leu	Ala
		195					200					205			
Arg	Val	Ala	Leu	Tyr	Ile	Gly	Thr	Trp	Asn	Lys	Phe	His	Gly	Ser	Gly
	210					215					220				
Glu	Tyr	Lys	Ser	Tyr	Leu	Gln	Ile	Ala	Lys	Glu	Ala	Ser	Lys	Arg	Leu
225				230						235					240
Ile	Asp	Ser	Lys	Glu	Tyr	Ser	Leu	Tyr	Ala	Asp	Tyr	Arg	Asn	Leu	Phe
			245						250					255	
Leu	Leu	Pro	Gly	Glu	Asp	Ser	Asn	Glu	His	Ile	Leu	Ser	Phe	Arg	Tyr

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<210> 7453
<211> 133
<212> PRT
<213> B.fragilis
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[illegible]

130

<210> 7454

<211> 201

<212> PRT

<213> B.fragilis

<400> 7454

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Asn Thr Val Thr Thr Met Ala Lys Gly Asn Arg Thr Val Pro Glu Ile
1      5      10      15
Asn Ser Ser Ser Thr Ala Asp Ile Ala Phe Leu Leu Leu Ile Phe Phe
20      25      30
Leu Ile Thr Thr Ser Met Asp Thr Asp Arg Gly Leu Ala Arg Gln Leu
35      40      45
Pro Pro Pro Pro Glu Lys Asp Gln Val Asp Asn Asp Val Val Val Lys
50      55      60
Asp Arg Asn Val Leu Gln Ile Phe Leu Asn Phe Gln Asn Gln Leu Met
65      70      75      80
Cys Gly Gly Glu Ile Val Asp Val Lys Gln Leu Arg Glu Lys Ala Lys
85      90      95
Glu Phe Ile Ala Asn Pro Tyr Asn Asp Glu Lys Leu Pro Glu Lys His
100     105     110
Ala Lys Asp Val Pro Phe Phe Gly Asn Val Met Val Thr Glu Asn His
115     120     125
Val Ile Ser Leu Gln Ser Asp Arg Gly Ser Ser Tyr Gln Ala Tyr Phe
130     135     140
Asp Val Gln Asn Glu Leu Val Ala Ala Tyr Asn Glu Leu Arg Asp Glu
145     150     155     160
Leu Ala Gln Glu Lys Trp Gln Lys Asn Tyr Ala Asp Leu Asn Glu Asp
165     170     175
Gln Gln Lys Ala Ile Arg Asp Ile Phe Pro Gln Lys Ile Ser Glu Ala
180     185     190
Glu Pro Lys Gly Val Lys Lys Asn Asn
195     200

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<210> 7455

<211> 183

<212> PRT

<213> B.fragilis

<400> 7455

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Ser Ala Pro Ala His Arg Trp Lys Ser Cys Gly Ile Ile Pro His Arg
1      5      10      15
Thr Met Ser Arg Ile Ser Ile Ile Ala Ala Val Asp Ser Arg Met Ala
20      25      30
Ile Gly Phe Gln Asn Lys Leu Leu Phe Trp Leu Pro Asn Asp Leu Lys
35      40      45
Arg Phe Lys Ala Leu Thr Thr Gly Asn Thr Ile Ile Met Gly Arg Lys
50      55      60
Thr Phe Glu Ser Leu Pro Lys Gly Ala Leu Pro Asn Arg Arg Asn Val
65      70      75      80
Val Leu Ser Ser Asn Pro Ala Ala Glu Cys Pro Gly Ala Glu Val Phe
85      90      95
Thr Ser Leu Glu Ala Ala Leu Glu Ser Cys Gln Ala Glu Glu Lys Val
100     105     110
Tyr Ile Ile Gly Gly Ala Ser Val Tyr Arg Gln Ala Ile Ser Leu Ala
115     120     125
Asp Glu Leu Cys Leu Thr Glu Val Asn Asp Thr Ala Pro Glu Ala Asp
130     135     140

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Ala Phe Phe Pro Ala Val Asp Thr Thr Ile Trp His Glu Lys Ser Arg
 145 150 155 160
 Glu Val His Pro Ala Asp Glu Lys His Leu Cys Ser Tyr Ala Phe Val
 165 170 175
 Asp Tyr Val Arg Glu Ile Asp
 180

<210> 7456

<211> 405

<212> PRT

<213> B.fragilis

<400> 7456

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365

Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Ser Gly Ser
 405

<210> 7457
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 7457

Asn Lys Ser Ala Ile Val Ser Thr Phe Val Lys Thr Ile Asn Ser His
 1 5 10 15
 Asp Met Lys Leu Ile Leu Thr Leu Phe Thr Cys Leu Phe Val Thr Gly
 20 25 30
 Cys Ala Tyr Ala Gln Asn Phe Ser Asp Tyr Phe Thr Asn Lys Thr Leu
 35 40 45
 Arg Ile Asp Tyr Leu Phe Thr Gly Asn Ala Asp Lys Gln Ser Ile Cys
 50 55 60
 Leu Asp Glu Leu Ser Glu Leu Pro Val Trp Ala Gly Arg Arg His His
 65 70 75 80
 Leu Pro Glu Leu Pro Leu Glu Gly Asn Gly Gln Ile Val Met Arg Asp
 85 90 95
 Val Ala Ser Gly Lys Val Ile Tyr Thr Thr Ser Phe Ser Ser Leu Phe
 100 105 110
 Gln Glu Trp Leu Glu Thr Asp Glu Ala Lys Glu Val Thr Lys Gly Phe
 115 120 125
 Glu Asn Thr Tyr Leu Leu Pro Tyr Pro Ile Lys Pro Ala Glu Val Glu
 130 135 140
 Ile Thr Leu Arg Asn Asn Lys Arg Glu Val Ser Ala Asn Leu Lys His
 145 150 155 160
 Val Val Lys Pro Asp Asp Ile Leu Ile His Lys Lys Gly Leu Thr His
 165 170 175
 Ile Thr Pro His Lys Tyr Leu Leu Lys Ser Gly Asn Glu Glu Gln Cys
 180 185 190
 Ile Asp Val Ala Ile Leu Ala Glu Gly Tyr Thr Thr Ser Glu Met Glu
 195 200 205
 Thr Phe Tyr Lys Asp Ala Ala Ile Ala Cys Glu Ala Leu Phe Ser His
 210 215 220
 Glu Pro Phe Gln Ser Met Lys Asn Arg Phe Asn Met Val Val Val Ala
 225 230 235 240
 Ser Leu Ser Ala Asp Ser Gly Val Ser Ala Pro Lys Gln Gly Ala Trp
 245 250 255
 Lys His Ser Ala Phe Arg Phe Pro Leu Arg Tyr Phe Leu Phe Arg Pro
 260 265 270
 Leu Ser Asp Tyr Gln Pro Gly Lys Ser Asn Lys Arg Arg Ile Gly Arg
 275 280 285
 His Pro Leu
 290

<210> 7458
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 7458

Ser Met Ser Ala Gly Leu Val Ser Arg Glu Lys Ile Asp Glu Val Leu


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1           5           10           15
Asn Glu Gly Phe Glu Ala Val Gln Met Ala Arg Ala Leu Leu Asn Glu
                20           25           30
Pro Gly Phe Val Asn Arg Met Arg Arg Glu Glu Lys Ala Arg Cys Asn
                35           40           45
Cys Gly His Ser Asn Tyr Cys Ile Gly Arg Met Tyr Thr Ile Glu Met
                50           55           60
Ala Cys His Arg His Leu Thr Glu Glu Leu Pro Leu Cys Leu Lys Lys
65           70           75           80
Glu Ile Glu Gln Leu Glu Asn Lys
                85

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<210> 7459
 <211> 132
 <212> PRT
 <213> B.fragilis

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<400> 7459
Ser Arg Ser Ala Arg Ser Ser Ala Leu Ile Ser Ile Tyr Val Phe Leu
1           5           10           15
Leu His Arg Met Ser Pro Pro Met Phe Leu Pro Asn Thr Ala Gly Ser
                20           25           30
Pro Tyr Thr Ser Ser Lys Ser Ser Cys Asn Trp Lys Ala Thr Pro Ile
                35           40           45
Cys Met Pro Lys Ser Tyr Arg Phe Ser Ala Ser Ser Gly Glu Ala Pro
                50           55           60
Pro Lys Ile Ala Pro Ile Phe Lys Leu Ala Ala Asn Lys Thr Ala Val
65           70           75           80
Phe Lys Arg Ile Ile Ser Arg Tyr Ser Ser Ser Phe Thr Ser Ser Arg
                85           90           95
Asp Ser Lys Phe Ile Ser Ile Cys Cys Pro Ser Gln Ile Ser Ser Ala
                100           105           110
Val Arg Leu Asn Lys Ser Ile Thr Ser Leu Arg Cys Ser Asp Glu Leu
                115           120           125
Ala Ala Ile Tyr
                130

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<210> 7460
 <211> 271
 <212> PRT
 <213> B.fragilis

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<400> 7460
Pro Lys Lys Tyr Thr Ile Arg Met Lys Gln Tyr Leu Asp Leu Leu Asp
1           5           10           15
Arg Val Leu Thr Glu Gly Ile Glu Lys Gly Asp Arg Thr Gly Thr Gly
                20           25           30
Thr Ile Ser Val Phe Gly His Gln Met Arg Phe Asn Leu Asp Glu Gly
                35           40           45
Phe Pro Cys Leu Thr Thr Lys Lys Leu His Leu Lys Ser Ile Ile Tyr
                50           55           60
Glu Leu Leu Trp Phe Leu Lys Gly Asp Thr Asn Val Lys Tyr Leu Gln
65           70           75           80
Asp His Gly Val Arg Ile Trp Asn Glu Trp Ala Asp Gly Thr Gly Asp
                85           90           95
Leu Gly His Val Tyr Gly Tyr Gln Trp Arg Ser Trp Pro Thr Tyr Asp
                100           105           110
Gly Gly Phe Ile Asp Gln Ile Ser Glu Ala Val Asp Ala Ile Lys His
                115           120           125

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Asn Pro Asp Ser Arg Arg Ile Ile Val Ser Ala Trp Asn Val Gly Asp
 130                      135                      140
Leu Asp His Met Asn Leu Pro Pro Cys His Ala Phe Phe Gln Phe Tyr
 145                      150                      155                      160
Val Ala Asn Gly Arg Leu Ser Leu Gln Leu Tyr Gln Arg Ser Ala Asp
                      165                      170                      175
Ile Phe Leu Gly Val Pro Phe Asn Ile Ala Ser Tyr Ala Leu Leu Leu
                      180                      185                      190
Gln Met Met Ala Gln Val Thr Gly Leu Gln Ala Gly Asp Phe Ile His
                      195                      200                      205
Thr Leu Gly Asp Ala His Ile Tyr Leu Asn His Leu Glu Gln Val Lys
                      210                      215                      220
Leu Gln Leu Ser Arg Glu Pro Arg Pro Leu Pro Gln Met Lys Ile Asn
 225                      230                      235                      240
Pro Asp Val Lys Asn Ile Phe Asp Phe Gln Phe Glu Asp Phe Glu Leu
                      245                      250                      255
Val Asn Tyr Asp Pro His Pro His Ile Ala Gly Lys Val Ala Val
                      260                      265                      270

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<210> 7461
 <211> 190
 <212> PRT
 <213> B.fragilis

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<400> 7461
Ala Met Gly Gln Glu Asn Met Leu Ile Tyr Leu Gln Val Val Tyr His
 1                      5                      10                      15
Ser Lys Asp Ser Thr Ile Arg Ile Phe Asp Asn Gly Ser Tyr Lys His
                      20                      25                      30
Ile Ile Tyr Asn Lys Gln Gly Lys Phe Leu Arg Glu Ile Ser Leu Ala
                      35                      40                      45
Asp Ser Glu Phe Asn Tyr Leu Leu His Met Gln Ser Asp Thr Tyr Phe
                      50                      55                      60
Phe Arg Gly Ser Phe Ser Lys Gly Lys Ser Glu Ile Ile Val Thr Asp
 65                      70                      75                      80
Thr Thr Leu Arg Val Lys Phe Pro Ile Leu Pro Phe Asp Ser Thr Ala
                      85                      90                      95
Asp Tyr Ile Thr Arg Gly Ala Ile Met Leu Asn Thr Thr Gly Glu Glu
                      100                      105                      110
Cys Ala Pro Asp Ile Cys Leu Phe Asn His Ile Tyr Ser Asp Ser Val
                      115                      120                      125
Phe Leu Leu Thr Pro Asp Gly Leu Lys Leu Asp Phe Ile Leu Arg Lys
                      130                      135                      140
Gly Lys Tyr Ala Pro Ser Leu Glu Asp Val Lys Gln Phe Met Lys Trp
 145                      150                      155                      160
Asn Gln Tyr Asp Pro Phe Ile Lys Gly Leu Phe Ile Leu Lys Ser Ala
                      165                      170                      175
Thr Ile Ile Gln Tyr Thr Ile Lys Gly Arg Phe Met Ser Arg
                      180                      185                      190

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<210> 7462
 <211> 83
 <212> PRT
 <213> B.fragilis

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<400> 7462
Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1                      5                      10                      15
Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met

```

		20					25				30						
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu		
		35					40					45					
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu		
	50					55					60						
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser		
65					70					75					80		
Ser	Ala	Arg															

<210> 7463

<211> 526

<212> PRT

<213> B.fragilis

<400> 7463

Trp	Lys	Leu	Leu	Phe	Phe	Trp	Leu	Trp	Asp	Gly	Val	Val	Gly	Ile	Pro		
1				5					10					15			
Thr	Asp	Val	Phe	Tyr	Leu	Ser	Asn	Ser	Leu	Ser	Phe	Phe	Phe	Ser	Asn		
		20					25					30					
Tyr	Ile	Thr	Ser	Gln	Arg	Ala	Phe	Val	Phe	Pro	Phe	Leu	Met	Lys	Gly		
	35					40					45						
Lys	Ser	Lys	Met	Pro	Val	Leu	Ile	Leu	Leu	Met	Gly	Val	Ile	Phe	Asn		
	50					55				60							
Ile	Leu	Asn	Gly	Leu	Met	Gln	Gly	Glu	Trp	Ile	Phe	Tyr	Leu	Ala	Pro		
65				70					75						80		
Ser	Asp	Tyr	Tyr	Thr	Pro	Gly	Trp	Leu	Leu	Thr	Pro	Cys	Phe	Trp	Ile		
			85					90					95				
Gly	Thr	Leu	Leu	Phe	Phe	Ala	Gly	Met	Gly	Ile	Asn	Trp	His	Ser	Asp		
		100					105						110				
Ser	Val	Ile	Arg	His	Leu	Arg	Ala	Pro	Gly	Asp	Thr	Arg	His	Tyr	Leu		
	115					120						125					
Pro	Gln	Arg	Gly	Met	Tyr	Arg	Tyr	Val	Thr	Ser	Ala	Asn	Tyr	Leu	Gly		
	130				135						140						
Glu	Ile	Val	Glu	Trp	Val	Gly	Trp	Ala	Ile	Leu	Thr	Trp	Ser	Leu	Ser		
145				150					155					160			
Gly	Cys	Ile	Phe	Ala	Trp	Trp	Thr	Val	Ala	Asn	Leu	Val	Pro	Arg	Ala		
		165						170					175				
Asp	Ala	Ile	Trp	His	Arg	Tyr	Arg	Glu	Glu	Phe	Gly	Thr	Gln	Arg	Arg		
		180					185						190				
Ile	Glu	Glu	Thr	Asn	Phe	Ser	Phe	Leu	Ile	Leu	Lys	Tyr	Thr	Val	Leu		
	195					200					205						
Met	Asn	Thr	His	Ser	Ala	Ser	Lys	Leu	Phe	Thr	Pro	Val	Thr	Ile	Gly		
	210				215						220						
Pro	Leu	Thr	Leu	Arg	Asn	Arg	Thr	Ile	Arg	Ser	Ala	Ala	Phe	Glu	Gly		
225				230					235					240			
Met	Cys	Pro	Gly	Asn	Ala	Pro	Ser	Pro	Met	Leu	Leu	Asp	Tyr	His	Arg		
		245						250					255				
Ser	Val	Ala	Ala	Gly	Gly	Val	Gly	Met	Thr	Thr	Ile	Ala	Tyr	Ala	Ser		
	260					265						270					
Val	Thr	Arg	Ser	Gly	Leu	Ser	Phe	Pro	Arg	Gln	Leu	Trp	Leu	Arg	Pro		
	275					280						285					
Glu	Ile	Ile	Pro	Gly	Leu	Arg	Glu	Val	Thr	Ala	Ala	Ile	His	Ala	Glu		
	290				295						300						
Gly	Ala	Ala	Ala	Ser	Ile	Gln	Ile	Gly	His	Cys	Gly	Asn	Met	Ser	His		
305				310					315					320			
Lys	Ser	Ile	Cys	Gly	Val	Thr	Pro	Ile	Ser	Ala	Ser	Ser	Gly	Phe	Asn		
		325					330						335				
Ile	Asn	Ser	Pro	Thr	Trp	Val	Arg	Gly	Met	Lys	Arg	Glu	Glu	Leu	Pro		

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<210> 7464
<211> 281
<212> PRT
<213> B.fragilis
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Leu	Ile	Leu	Lys	Ile	Arg	His	Thr	Met	Lys	Lys	Leu	Phe	Ala	Ile	Val
1				5					10					15	
Ala	Val	Met	Gly	Val	Leu	Thr	Phe	Gly	Ser	Thr	Gln	Leu	Val	Gln	Ala
			20					25					30		
Gln	Asp	Ala	Ala	Ala	Thr	Glu	Gln	Ala	Ala	Pro	Ala	Ala	Asp	Lys	Pro
		35					40					45			
Val	Ala	Asp	Ala	Val	Ala	Glu	Ala	Ala	Glu	Ala	Ser	Ala	Pro	Leu	Ala
	50					55					60				
Gly	Ala	Glu	Glu	Gly	Gly	Ile	His	Lys	Glu	Ile	Lys	Val	Lys	Phe	Ile
65					70					75					80
Glu	Gly	Thr	Ala	Ser	Phe	Met	Ser	Leu	Val	Ala	Ile	Ala	Leu	Val	Ile
				85					90					95	
Gly	Leu	Ala	Phe	Cys	Ile	Glu	Arg	Ile	Ile	Tyr	Leu	Ser	Leu	Ala	Glu
			100					105					110		
Ile	Asn	Thr	Lys	Lys	Phe	Met	Ser	Ser	Ile	Glu	Ala	Ala	Leu	Glu	Lys
		115					120					125			
Gly	Asp	Val	Glu	Ala	Ala	Lys	Asp	Ile	Ala	Arg	Asn	Thr	Arg	Gly	Pro
	130					135					140				
Val	Ala	Ser	Ile	Tyr	Tyr	Gln	Gly	Leu	Met	Arg	Ile	Asp	Gln	Gly	Ile
145					150					155					160
Asp	Val	Val	Glu	Lys	Ser	Val	Val	Ser	Tyr	Gly	Gly	Val	Gln	Ala	Gly
				165					170					175	
Tyr	Leu	Glu	Lys	Gly	Cys	Ser	Trp	Ile	Thr	Leu	Phe	Ile	Ala	Met	Ala
			180					185					190		
Pro	Ser	Leu	Gly	Phe	Leu	Gly	Thr	Val	Val	Gly	Met	Val	Met	Ala	Phe
		195					200					205			
Asp	Lys	Ile	Gln	Gln	Gln	Gly	Asp	Ile	Ser	Pro	Thr	Val	Val	Ala	Gly
	210					215					220				
Gly	Met	Lys	Val	Ala	Leu	Ile	Thr	Thr	Ile	Phe	Gly	Leu	Val	Val	Ala

225 230 235 240
 Leu Ile Leu Gln Val Phe Tyr Asn Tyr Ile Leu Ala Lys Ile Glu Ala
 245 250 255
 Leu Thr Ser Glu Met Glu Asp Ser Ser Ile Ser Leu Leu Asp Met Val
 260 265 270
 Ile Lys Tyr Asn Leu Lys Tyr Lys Lys
 275 280

<210> 7465
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 7465
 Leu Met Gly Lys Phe Asn Lys Thr Gly Lys Arg Gly Met Pro Thr Leu
 1 5 10 15
 Asn Thr Ser Ser Leu Pro Asp Leu Ile Phe Thr Leu Leu Phe Phe Phe
 20 25 30
 Met Ile Val Thr Thr Met Arg Glu Val Ser Leu Lys Val Glu Phe Lys
 35 40 45
 Ile Pro Gln Gly Thr Glu Leu Glu Lys Leu Glu Lys Lys Ser Leu Val
 50 55 60
 Thr Phe Ile Tyr Val Gly Lys Pro Thr Ala Glu Phe Arg Lys Lys Leu
 65 70 75 80
 Gly Ser Glu Ser Arg Ile Gln Leu Asn Asp Ala Tyr Ala Glu Val Asp
 85 90 95
 Glu Ile Gln Ala Tyr Val Thr Asn Glu Arg Ser Ser Met Lys Glu Glu
 100 105 110
 Asp Gln Pro Phe Met Thr Val Ser Leu Lys Ile Asp Gln Asp Thr Lys
 115 120 125
 Met Gly Ile Val Thr Asp Ile Lys Gln Ala Leu Arg Gln Ala Tyr Ala
 130 135 140
 Leu Lys Ile Asn Tyr Ser Ala Arg Ala Arg Glu
 145 150 155

<210> 7466
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 7466
 Lys Pro Glu Glu His Gln Phe Leu Tyr Thr Asn Phe Met Glu Val Lys
 1 5 10 15
 Lys Ser Pro Lys Ala Asp Leu Glu Gly Lys Lys Thr Gln Trp Leu Leu
 20 25 30
 Ile Gly Tyr Val Val Val Leu Ala Phe Ile Phe Val Ala Phe Glu Trp
 35 40 45
 Thr Glu Arg Asp Ile Lys Ile Asp Thr Ser Gln Ala Val Ala Gln Ile
 50 55 60
 Glu Phe Glu Glu Glu Met Ile Pro Ile Thr Gln Gln Glu Glu Lys Pro
 65 70 75 80
 Ala Pro Pro Pro Val Glu Val Pro Lys Gln Ala Glu Ile Leu Lys Ile
 85 90 95
 Val Asp Asp Glu Ala Asp Val Gln Glu Thr Ala Ile Ala Ser Thr Glu
 100 105 110
 Asp Thr Gly Gln Lys Val Glu Val Lys Tyr Val Pro Val Glu Val Lys
 115 120 125
 Glu Glu Glu Pro Ser Glu Gln Glu Ile Phe Glu Val Val Glu Asn Ala
 130 135 140

Pro Glu Phe Pro Gly Gly Met Pro Ala Cys Leu Gln Phe Leu Tyr Lys
 145 150 155 160
 Asn Ile Lys Tyr Pro Pro Ile Ala Gln Glu Asn Gly Thr Gln Gly Gln
 165 170 175
 Val Val Leu Gln Phe Val Val Glu Arg Asp Gly Ser Ile Gly Asp Ile
 180 185 190
 Lys Val Val Lys Ser Val Asp Pro Tyr Leu Asp Lys Glu Ala Leu Arg
 195 200 205
 Val Val Lys Thr Met Pro Lys Trp Lys Pro Gly Met Gln Arg Gly Lys
 210 215 220
 Pro Val Arg Cys Arg Phe Thr Leu Pro Val Arg Phe Arg Leu Gln
 225 230 235

<210> 7467

<211> 290

<212> PRT

<213> B.fragilis

<400> 7467

Met Met Glu Arg Lys Leu Ala Val Ile Thr Gly Ala Asp Gly Gly Met
 1 5 10 15
 Gly Thr Glu Ile Thr Arg Ala Val Ala Cys Ala Gly Tyr Asp Val Ile
 20 25 30
 Met Ala Cys Tyr Ser Ser Ser Lys Ala Glu Thr Lys Cys Arg Glu Leu
 35 40 45
 Val Lys Glu Thr Gly Asn Glu Lys Ile Glu Val Trp Gln Ile Asp Leu
 50 55 60
 Ala Ser Leu Ser Ser Val Arg Ala Phe Ala Asp Arg Met Leu Arg Gln
 65 70 75 80
 Lys Thr Pro Val Ala Leu Leu Met Asn Asn Ala Gly Thr Met Glu Thr
 85 90 95
 Gly Leu His Ile Thr Glu Asp Gly Leu Glu Arg Thr Val Ser Val Asn
 100 105 110
 Tyr Val Gly Pro Tyr Leu Leu Thr Arg Leu Leu Leu Pro Leu Met Gly
 115 120 125
 Glu Gly Thr Arg Ile Val Asn Met Val Ser Cys Thr Tyr Ala Ile Gly
 130 135 140
 Lys Leu Asp Phe Pro Asp Phe Phe Leu Arg Gly Arg Lys Gly Ser Phe
 145 150 155 160
 Trp Arg Ile Pro Ile Tyr Ser Asn Thr Lys Leu Ala Leu Leu Leu Phe
 165 170 175
 Thr Ile Glu Leu Ala Glu Arg Leu Arg Ala Arg Gly Ile Thr Val Asn
 180 185 190
 Ala Ala Asp Pro Gly Ile Val Ser Thr Asn Ile Ile Arg Met Asp Gln
 195 200 205
 Trp Phe Asp Pro Leu Thr Asp Ile Phe Phe Arg Pro Phe Ile Arg Thr
 210 215 220
 Pro Leu Gln Gly Ala Ala Thr Ala Ile Gly Leu Leu Leu Asp Ala Glu
 225 230 235 240
 Val Glu Gly Arg Thr Ala Thr Phe Asn Leu Asn Asn His Cys Arg Leu
 245 250 255
 Leu Pro Glu Lys Tyr Thr Arg Pro Asp Arg Arg Ala Gln Leu Trp Glu
 260 265 270
 Glu Thr Glu Arg Ile Leu Ser Glu Lys Gly Phe Leu Pro Ile Asn Asp
 275 280 285
 Lys Arg
 290

<210> 7468

<211> 69
 <212> PRT
 <213> B.fragilis

<400> 7468

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Leu Lys Thr Leu Val Val Arg Ile Phe Phe Val Ile Cys Thr Arg Phe
1          5          10          15
Glu Glu Ser Ala Asn Trp Arg Asp Ala Arg Val Val Glu Glu Ala Arg
          20          25          30
Leu Glu Ser Val Tyr Thr Pro Lys Val Tyr Arg Gly Phe Glu Ser Arg
          35          40          45
Ser Leu Arg Arg Lys Tyr Lys Gln Glu Thr Ile Ser Lys Tyr Asn Asn
          50          55          60
Asn Asn Leu Ile Asn
65

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<210> 7469

<211> 158
 <212> PRT
 <213> B.fragilis

<400> 7469

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Ser Glu Met Ser Lys Leu Thr Tyr Lys Val Ser Tyr Tyr Val Leu Tyr
1          5          10          15
Ala Met Phe Ala Leu Ile Val Ile Val Leu Gly Leu Phe Tyr Phe Gly
          20          25          30
Gly Gln Met Glu Thr Pro Ile Val Tyr Asp Met Asp Asn Pro Ala Asn
          35          40          45
Thr Asp Ala Leu Leu Tyr Leu Met Tyr Gly Leu Phe Gly Ile Ala Val
          50          55          60
Val Ala Thr Val Val Ala Ala Ile Phe Gln Phe Gly Ser Ala Leu Lys
          65          70          75          80
Asp Asn Pro Lys Gly Ala Ile Arg Ser Leu Leu Gly Leu Ile Leu Leu
          85          90          95
Val Leu Val Leu Val Val Ala Trp Ser Met Gly Ser Gly Glu Thr Leu
          100          105          110
Thr Ile Gln Gly Tyr Glu Gly Thr Asp Asn Val Pro Phe Trp Leu Lys
          115          120          125
Leu Thr Asp Met Phe Leu Tyr Ser Ile Tyr Phe Leu Met Leu Val Thr
          130          135          140
Val Leu Ala Ile Ile Gly Ser Ser Ile Lys Lys Lys Leu Ser
          145          150          155

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<210> 7470

<211> 244
 <212> PRT
 <213> B.fragilis

<400> 7470

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Cys Thr Ala Arg Cys Asn Ile Glu Met Pro Tyr Arg Arg Leu Pro Asn
1          5          10          15
Thr Asp Gln Ala Arg Ile Arg Ala Leu Lys Thr Ala Val Val Lys Gly
          20          25          30
Asp Met Cys Asp Val Tyr Asp Leu Pro Val Ser Leu Lys Thr Leu Gly
          35          40          45
Glu Ala Arg Ile Phe Leu Ser Lys Phe Glu Thr Ala His Ser Tyr Tyr
          50          55          60
Val His Cys Tyr Gly Glu Gln Ser Arg Asn Ser Lys Lys His Gln Ala
          65          70          75          80

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Asn Val Lys Thr Ala Arg Leu Tyr Ile Ser His Phe Ile Gln Val Leu
      85                      90                      95
Asn Leu Ala Val Ile Arg Met Glu Ile Lys Glu Ser His Lys Ala Leu
      100                    105                    110
Tyr Gly Leu Pro Val Asp Asn Phe Ser Val Pro Asp Leu Ser Ser Glu
      115                    120                    125
Ala Ser Leu Ala Glu Trp Gly Gln Lys Ile Ile Glu Gly Glu Arg Lys
      130                    135                    140
Arg Thr Ser Gln Gly Gly Ile Pro Ile Tyr Asn Pro Thr Ile Ala Lys
      145                    150                    155                    160
Val Lys Val His Tyr Asp Ile Phe Met Glu Gly Tyr Glu Lys Gln Lys
      165                    170                    175
Ser Leu Gln Ser Leu Thr Asn Arg Ser Leu Glu Gln Leu Ala Ser Met
      180                    185                    190
Arg Val Gln Ala Asp Arg Leu Ile Leu Asp Ile Trp Asn Gln Val Glu
      195                    200                    205
Ala Lys Phe Gln Asp Val Ser Pro Asn Glu Lys Arg Leu Glu Lys Cys
      210                    215                    220
Arg Asp Tyr Gly Leu Ile Tyr Tyr Tyr Arg Thr Gly Glu Lys Gln Asn
      225                    230                    235                    240
Lys Glu Ile Leu

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<210> 7471

<211> 347

<212> PRT

<213> B.fragilis

<400> 7471

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Tyr Lys Lys Arg Gly Cys Arg Pro Ser Ser Leu Phe Ser Phe Asn Leu
1      5                      10                      15
Ser Phe Tyr Asn Leu Phe Ile Met Tyr Thr Ala Phe Gln Leu Leu Asp
      20                      25                      30
Lys Ile Asn Ser His Ile Ser Asp Ile Arg Phe Thr Arg Thr Pro Ala
      35                      40                      45
Gly Leu Tyr Asp Pro Ile Lys Tyr Val Leu Ser Met Gly Gly Lys Arg
      50                      55                      60
Ile Arg Pro Val Leu Met Leu Met Ala Tyr Asn Leu Tyr Lys Glu Asp
      65                      70                      75                      80
Val Ser Ser Ile Tyr Asp Pro Ala Thr Ala Ile Glu Val Tyr His Asn
      85                      90                      95
Tyr Thr Leu Leu His Asp Asp Leu Met Asp Arg Ala Asp Met Arg Arg
      100                    105                    110
Gly Lys Thr Thr Val His Lys Val Trp Asn Asp Asn Thr Ala Ile Leu
      115                    120                    125
Ser Gly Asp Ala Met Leu Val Leu Ala Tyr Gln Tyr Met Ala Ala Ser
      130                    135                    140
Ser Ser Glu His Leu Lys Glu Val Met Asp Leu Phe Ser Leu Thr Ala
      145                    150                    155                    160
Leu Glu Ile Cys Glu Gly Gln Gln Met Asp Met Asn Phe Glu Ser Arg
      165                    170                    175
Glu Asp Val Lys Glu Glu Glu Tyr Leu Glu Met Ile Arg Leu Lys Thr
      180                    185                    190
Ala Val Leu Leu Ala Ala Ser Leu Lys Ile Gly Ala Ile Leu Gly Gly
      195                    200                    205
Ala Ser Pro Glu Asp Ala Glu Asn Leu Tyr Asp Phe Gly Met Gln Ile
      210                    215                    220
Gly Val Ala Phe Gln Leu Gln Asp Asp Leu Leu Asp Val Tyr Gly Asp
      225                    230                    235                    240

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Pro Ala Val Phe Gly Lys Asn Ile Gly Gly Asp Ile Leu Cys Asn Lys
 245 250 255
 Lys Thr Tyr Met Leu Ile Lys Ala Leu Glu Arg Ala Asp Arg Asp Gln
 260 265 270
 Leu Glu Gly Leu Asn His Trp Leu Ser Thr Thr Ser Phe Cys Pro Glu
 275 280 285
 Glu Lys Ile Ser Ala Val Thr Glu Leu Tyr Thr Gln Ile Gly Ile Lys
 290 295 300
 Ala Val Cys Glu Asn Lys Met Arg Glu Tyr Tyr Thr Arg Ala Met Thr
 305 310 315 320
 Ser Leu Gly Ala Val Ser Val Ile Glu Asp Lys Lys Ser Glu Leu Lys
 325 330 335
 Lys Leu Met Lys His Leu Met Tyr Arg Glu Met
 340 345

<210> 7472

<211> 457

<212> PRT

<213> B.fragilis

<400> 7472

Lys Ile Asp Gly Arg Ser Asp Pro Arg Glu Thr Asn Lys Glu Tyr Leu
 1 5 10 15
 Ile Tyr Lys Leu Ser Glu Ala Met Lys Asp Cys Thr Arg Ile Asp Asn
 20 25 30
 Glu Leu Phe Pro Lys Phe Asp Val Lys Arg Gly Leu Arg Asn Glu Asp
 35 40 45
 Gly Thr Gly Val Leu Val Gly Leu Thr Lys Ile Gly Asn Val Val Gly
 50 55 60
 Tyr Glu Arg Ile Pro Gly Gly Gly Leu Lys Pro Ile Pro Gly Lys Leu
 65 70 75 80
 Phe Tyr Arg Gly Tyr Asp Leu Glu Asp Leu Ala His Ala Ile Leu Lys
 85 90 95
 Glu Lys Arg Phe Gly Phe Glu Glu Val Ala Tyr Leu Leu Leu Ser Gly
 100 105 110
 Ser Leu Pro Asp Lys Glu Glu Leu Ala Ser Phe Arg Glu Leu Ile Asn
 115 120 125
 Asp Asn Met Pro Leu Glu Gln Lys Thr Lys Met Asn Ile Ile Glu Leu
 130 135 140
 Glu Gly Asn Asn Ile Met Asn Ile Leu Ala Arg Ser Val Leu Glu Met
 145 150 155 160
 Tyr Arg Phe Asp Pro Asn Pro Asp Asp Thr Ser Arg Asp Asn Leu Met
 165 170 175
 Arg Gln Ser Ile Asp Leu Ile Ser Lys Phe Pro Thr Ile Ile Ala Tyr
 180 185 190
 Ala Phe Asn Met Leu Arg His Ala Thr Phe Gly Arg Ser Leu His Ile
 195 200 205
 Arg His Pro Gln Glu Asn Leu Ser Ile Ala Glu Asn Phe Leu Tyr Met
 210 215 220
 Leu Lys Arg Asp Tyr Thr Glu Leu Asp Ala Arg Thr Leu Asp Leu Leu
 225 230 235 240
 Leu Val Leu Gln Ala Glu His Gly Gly Gly Asn Asn Ser Thr Phe Thr
 245 250 255
 Val Arg Val Thr Ser Ser Thr Gly Thr Asp Thr Tyr Ser Ala Ile Ala
 260 265 270
 Ala Gly Ile Gly Ser Leu Lys Gly Pro Leu His Gly Gly Ala Asn Ile
 275 280 285
 Gln Val Ala Asp Met Phe His His Leu Gln Glu Asn Ile Gln Asp Trp
 290 295 300

Thr Asn Val Asp Glu Ile Asp Thr Tyr Phe Thr Arg Met Leu Asn Lys
 305 310 315 320
 Glu Val Tyr Asn Lys Thr Gly Leu Ile Tyr Gly Ile Gly His Ala Val
 325 330 335
 Tyr Thr Ile Ser Asp Pro Arg Ala Val Leu Leu Lys Glu Leu Ala Arg
 340 345 350
 Asp Leu Ala His Glu Lys Gly Arg Glu Arg Glu Phe Ala Phe Leu Glu
 355 360 365
 Leu Leu Glu Glu Arg Ala Ile Ala Thr Phe Gly Lys Ile Lys Asn Asn
 370 375 380
 Gly Lys Thr Val Ser Ser Asn Val Asp Phe Tyr Ser Gly Phe Val Tyr
 385 390 395 400
 Glu Met Ile Gly Leu Pro Gln Glu Ile Tyr Thr Pro Leu Phe Ala Met
 405 410 415
 Ala Arg Ile Val Gly Trp Cys Ala His Arg Asn Glu Glu Leu Asn Phe
 420 425 430
 Glu Gly Lys Arg Ile Ile Arg Pro Ala Tyr Lys Asn Val Leu Glu Glu
 435 440 445
 Glu Gln Tyr Val Pro Leu Lys Lys Arg
 450 455

<210> 7473

<211> 160

<212> PRT

<213> B.fragilis

<400> 7473

Phe Lys Met Gly His His Gln Leu Asp Thr Leu Asp Glu Gln Ile Leu
 1 5 10 15
 Lys Leu Ile Ala Asp Asn Ala Arg Ile Pro Phe Leu Glu Val Ala Arg
 20 25 30
 Ala Cys Asn Val Ser Gly Ala Ala Ile His Gln Arg Ile Gln Lys Leu
 35 40 45
 Thr Asn Leu Gly Ile Leu Lys Gly Ser Glu Tyr Val Ile Asp Pro Glu
 50 55 60
 Lys Ile Gly Tyr Glu Thr Cys Ala Tyr Ile Gly Ile Tyr Leu Lys Asp
 65 70 75 80
 Pro Glu Ser Phe Asp Ser Val Thr Lys Ala Leu Glu Ala Ile Pro Glu
 85 90 95
 Val Val Glu Cys His Phe Thr Thr Gly Lys Tyr Asp Met Phe Ile Lys
 100 105 110
 Ile Tyr Ala Arg Asn Asn His His Leu Leu Ser Val Ile His Asp Lys
 115 120 125
 Leu Gln Pro Leu Gly Leu Ala Arg Thr Glu Thr Leu Ile Ser Phe His
 130 135 140
 Glu Ala Ile Lys Arg Gln Met Pro Ile Met Val Asp Thr Asp Glu Asp
 145 150 155 160

<210> 7474

<211> 317

<212> PRT

<213> B.fragilis

<400> 7474

Gly Val Ala Ile Leu Lys Lys Gly Cys Ser His Pro Val Ser Met Ala
 1 5 10 15
 Thr Pro Phe Leu Asn His Thr Phe Val Ile Ile Met Val Lys Val Glu
 20 25 30
 Ile Asp Glu Gly Ser Gly Phe Cys Phe Gly Val Val Thr Ala Ile His

35 40 45
 Lys Ala Glu Glu Glu Leu Ala Lys Gly Val Thr Leu Tyr Cys Leu Gly
 50 55 60
 Asp Ile Val His Asn Ser Arg Glu Val Glu Arg Leu Lys Glu Met Gly
 65 70 75 80
 Leu Ile Thr Ile Asn His Glu Glu Phe Lys Gln Leu His Asn Ala Lys
 85 90 95
 Val Leu Leu Arg Ala His Gly Glu Pro Pro Glu Thr Tyr Ile Ile Ala
 100 105 110
 Lys Glu Asn Asn Ile Glu Ile Ile Asp Ala Thr Cys Pro Val Val Leu
 115 120 125
 Arg Leu Gln Lys Arg Ile Lys Gln Glu Tyr Met Gln Glu Asp Leu Asp
 130 135 140
 Glu Lys Gln Ile Val Ile Tyr Gly Lys Asn Gly His Ala Glu Val Leu
 145 150 155 160
 Gly Leu Val Gly Gln Thr Thr Gly Lys Ala Ile Val Ile Glu Lys Leu
 165 170 175
 Asp Glu Ala Arg Arg Leu Asp Phe Ser Lys Ser Ile Arg Leu Tyr Ser
 180 185 190
 Gln Thr Thr Lys Ser Leu Asp Glu Phe Trp Glu Ile Val Glu Tyr Ile
 195 200 205
 Lys Glu His Ile Ser Pro Asp Val Thr Phe Glu Tyr Tyr Asp Thr Ile
 210 215 220
 Cys Arg Gln Val Ala Asn Arg Met Pro Asn Leu Arg Lys Phe Ala Ala
 225 230 235 240
 Ser His Asp Leu Ile Phe Phe Val Ser Gly Lys Lys Ser Ser Asn Gly
 245 250 255
 Lys Met Leu Phe Glu Glu Cys Lys Lys Val Asn Pro Asn Ser His Leu
 260 265 270
 Ile Asp Ser Ala Asp Glu Ile Asp Asp Ser Leu Leu Pro Gly Val Asn
 275 280 285
 Ser Ile Gly Val Cys Gly Ala Thr Ser Thr Pro Lys Trp Leu Met Glu
 290 295 300
 Glu Ile Ser Glu Ala Ile Lys Ala Gln Ile Lys Arg Gln
 305 310 315

<210> 7475
 <211> 278
 <212> PRT
 <213> B.fragilis

<400> 7475
 Tyr Ile Lys Ile Gly Val Leu Leu Val Phe Lys Leu Leu Leu Leu Leu
 1 5 10 15
 Trp His Lys Tyr Asn Ala Asp Ile Leu Lys Ile Gln Tyr Ile Trp Arg
 20 25 30
 Lys Asn Leu Asp Asn Thr Leu Lys Lys Gly Val Asn Leu Leu His Asn
 35 40 45
 Ile Met Lys Lys Ile Thr Ile Ala Ile Asp Gly Phe Ser Ser Cys Gly
 50 55 60
 Lys Ser Thr Met Ala Lys Asp Leu Ala Lys Glu Ile Gly Tyr Ile Tyr
 65 70 75 80
 Ile Asp Ser Gly Ala Met Tyr Arg Ala Val Thr Leu Tyr Ser Ile Glu
 85 90 95
 Asn Gly Ile Phe His Gly Asp Thr Ile Asp Thr Asp Glu Leu Lys Arg
 100 105 110
 Arg Ile Gly Asp Ile His Ile Ser Phe Arg Ile Asp Pro Glu Thr Gly
 115 120 125
 Arg Pro Asn Thr Tyr Leu Asn Gly Val Asn Val Glu Asn Lys Ile Arg

130	135	140
Thr Met Glu Val Ser Ser Lys Val Ser Pro Ile Ser Ala Leu Gly Phe		
145	150	155
Val Arg Glu Ala Met Val Ala Gln Gln Gln Glu Met Gly Lys Ala Lys		160
	165	170
Gly Ile Val Met Asp Gly Arg Asp Ile Gly Thr Thr Val Phe Pro Asp		175
	180	185
Ala Glu Leu Lys Ile Phe Val Thr Ala Ser Ala Glu Ile Arg Ala Gln		190
	195	200
Arg Arg Tyr Asp Glu Leu Lys Ala Lys Gly Gln Glu Thr Gly Phe Glu		205
	210	215
Glu Ile Leu Glu Asn Val Lys Gln Arg Asp His Ile Asp Gln Thr Arg		220
	225	230
Glu Val Ser Pro Leu Lys Lys Ala Asp Asp Ala Leu Leu Leu Asp Asn		235
	245	250
Ser His Leu Thr Ile Ala Glu Gln Lys Glu Trp Leu Met Ala Glu Tyr		255
	260	265
Gln Lys Ala Ile Lys Ala		270
	275	

<210> 7476

<211> 331

<212> PRT

<213> B.fragilis

<400> 7476

Lys Asn Met Ile Val Met Gly Thr Val Lys Cys Val Gly Ile Leu Thr		
1	5	10
Ser Gly Gly Asp Ala Pro Gly Met Asn Ala Ala Ile Arg Ala Val Thr		15
	20	25
Arg Ala Ala Ile Tyr Asn Gly Leu Gln Val Lys Gly Ile Tyr Arg Gly		30
	35	40
Tyr Arg Gly Leu Val Thr Gly Glu Ile Lys Glu Phe Lys Ser Gln Asn		45
	50	55
Val Ser Asn Ile Ile Gln Leu Gly Gly Thr Ile Leu Lys Thr Ala Arg		60
	65	70
Cys Lys Glu Phe Thr Pro Glu Gly Arg Lys Met Ala Tyr Asp Asn		75
	85	90
Met Val Lys Glu Gly Ile Asp Ala Leu Val Val Ile Gly Gly Asp Gly		95
	100	105
Ser Leu Thr Gly Ala Arg Ile Phe Ala Gln Glu Tyr Asp Ile Pro Cys		110
	115	120
Ile Gly Leu Pro Gly Thr Ile Asp Asn Asp Leu Tyr Gly Thr Asp Thr		125
	130	135
Thr Ile Gly Tyr Asp Thr Ala Leu Asn Thr Ile Leu Asp Ala Val Asp		140
	145	150
Lys Ile Arg Asp Thr Ala Thr Ser His Glu Arg Leu Phe Phe Val Glu		155
	165	170
Val Met Gly Arg Asp Ala Gly Phe Leu Ala Leu Asn Gly Ala Ile Ala		175
	180	185
Ser Gly Ala Glu Ala Ala Ile Ile Pro Glu Phe Ser Thr Glu Val Asp		190
	195	200
Gln Leu Glu Glu Phe Ile Lys Ser Gly Phe Arg Lys Ser Lys Asn Ser		205
	210	215
Ser Ile Val Leu Val Ala Glu Ser Glu Leu Thr Gly Gly Ala Met His		220
	225	230
Tyr Ala Glu Arg Val Lys Asn Glu Tyr Pro Gln Tyr Asp Val Arg Val		235
	245	250
Thr Ile Leu Gly His Leu Gln Arg Gly Gly Ser Pro Thr Ala His Asp		255

	260		265		270										
Arg	Ile	Leu	Ala	Ser	Arg	Leu	Gly	Ala	Ala	Ala	Ile	Asp	Ala	Ile	Met
	275						280					285			
Glu	Asp	Gln	Arg	Asn	Val	Met	Ile	Gly	Ile	Glu	His	Asp	Glu	Ile	Val
	290						295					300			
Tyr	Val	Pro	Phe	Ser	Lys	Ala	Ile	Lys	Asn	Asp	Lys	Pro	Val	Lys	Arg
305					310					315					320
Asp	Leu	Val	Asn	Val	Leu	Arg	Glu	Leu	Ser	Ile					
			325						330						

<210> 7477

<211> 259

<212> PRT

<213> B.fragilis

<400> 7477

Asn	Met	Leu	Val	Asp	Ser	His	Ser	His	Leu	Phe	Leu	Glu	Glu	Phe	Ala
1				5					10					15	
Glu	Asp	Leu	Pro	Phe	Val	Met	Glu	Arg	Ala	Arg	Ala	Ala	Gly	Val	Thr
			20					25					30		
His	Ile	Phe	Met	Pro	Asn	Ile	Asp	Ser	Thr	Thr	Ile	Glu	Pro	Met	Leu
		35					40					45			
Ser	Val	Cys	Asp	Thr	Tyr	Arg	Asp	Phe	Cys	Phe	Pro	Met	Ile	Gly	Leu
	50					55					60				
His	Pro	Thr	Ser	Val	Asn	Glu	Ser	Tyr	Glu	Lys	Glu	Leu	Glu	Ile	Val
65					70					75					80
Ala	Ala	Asn	Leu	Glu	Thr	Ser	Gly	Arg	Phe	Val	Ala	Val	Gly	Glu	Ile
				85					90					95	
Gly	Ile	Asp	Leu	Tyr	Trp	Asp	Lys	Thr	Trp	Leu	Lys	Glu	Gln	Leu	Ile
			100					105					110		
Ala	Phe	Glu	Lys	Gln	Val	Gln	Trp	Ala	Leu	His	Tyr	Gln	Leu	Pro	Ile
		115					120					125			
Val	Ile	His	Cys	Arg	Glu	Ala	Phe	Asp	Tyr	Ile	Tyr	Lys	Val	Leu	Gln
	130					135					140				
Pro	Tyr	Lys	Asn	Ser	Gly	Leu	Thr	Gly	Ile	Phe	His	Ser	Phe	Thr	Gly
145					150					155					160
Thr	Pro	Gly	Glu	Ala	Ala	Arg	Met	Met	Glu	Phe	Pro	Gly	Phe	Lys	Ile
				165					170					175	
Gly	Ile	Asn	Gly	Val	Val	Thr	Phe	Lys	Lys	Ser	Thr	Leu	Pro	Glu	Thr
			180					185					190		
Leu	Lys	Ser	Val	Pro	Leu	Glu	Arg	Ile	Val	Leu	Glu	Thr	Asp	Ser	Pro
		195					200					205			
Tyr	Leu	Thr	Pro	Val	Pro	Asn	Arg	Gly	Lys	Arg	Asn	Glu	Ser	Ala	Asn
	210					215					220				
Val	Lys	Asp	Thr	Leu	Ile	Lys	Val	Ala	Glu	Ile	Tyr	Asn	Glu	Asp	Pro
225					230					235					240
Glu	Lys	Val	Ala	Glu	Leu	Thr	Ala	Val	Ser	Ala	Leu	Lys	Val	Phe	Gly
				245					250					255	

Met Leu Lys

<210> 7478

<211> 61

<212> PRT

<213> B.fragilis

<400> 7478

Ser	Tyr	Val	Phe	Ile	Gly	Thr	Ile	Leu	Phe	Val	Glu	Pro	Cys	Ile	Tyr
1					5				10					15	

Arg Ile Ile Ser Phe Val Gly Phe Ile Gln Ser Cys Val Tyr Asn Ile
 20 25 30
 Cys Met Asp Ser Glu Glu Glu Arg Phe Thr Val Leu Gly Ala Ile Gly
 35 40 45
 Leu Arg Arg Gly Gly Leu Leu Pro Gly Gly Gly Leu Lys
 50 55 60

<210> 7479

<211> 213

<212> PRT

<213> B.fragilis

<400> 7479

Arg Ile Ala Ser Thr Trp Trp Leu Trp Pro Val Phe Arg Gln Thr Val
 1 5 10 15
 Gly Ser Ala Leu Pro Asn Arg Glu His Gly Ser Thr Arg Pro Ser Gly
 20 25 30
 Ser His Phe Asp Thr Phe Tyr Ser Asp Arg Tyr Leu Thr Thr Ser Arg
 35 40 45
 Val Lys Ala Ile Asn Asp Ala Leu Ala Gly Ile Pro Tyr Glu His Ile
 50 55 60
 Ile Ile Leu Ala Asn Thr Glu Gln Tyr Gly Gly Gly Gly Ile Tyr Asn
 65 70 75 80
 Ala Phe Thr Leu Thr Thr Ala His His Pro Asn Phe Arg Pro Val Val
 85 90 95
 Val His Glu Phe Gly His Ser Phe Gly Gly Leu Ala Asp Glu Tyr Phe
 100 105 110
 Tyr Asp Glu Asp Val Met Asn Gly Leu Tyr Pro Leu Asn Ile Glu Pro
 115 120 125
 Trp Glu Gln Asn Ile Thr Thr Arg Ile Asn Phe Ala Ser Lys Trp Glu
 130 135 140
 Asp Met Leu Thr Lys Ala Thr Pro Val Pro Thr Pro Val Ala Asn Lys
 145 150 155 160
 Ala Lys Tyr Pro Ile Gly Val Tyr Glu Gly Gly Gly Tyr Ser Ala Lys
 165 170 175
 Gly Ile Tyr Arg Pro Ala Phe Asp Cys Arg Met Arg Thr Asn Glu Tyr
 180 185 190
 Pro Thr Phe Cys Pro Val Cys Gln Arg Ala Ile Gln Arg Ile Ile Glu
 195 200 205
 Phe Tyr Thr Gly Lys
 210

<210> 7480

<211> 350

<212> PRT

<213> B.fragilis

<400> 7480

Ile Arg Leu Ser Leu Lys Leu Ser Ser Ser Ile Met Ser Asp Ser Ile
 1 5 10 15
 Lys Thr Phe Lys Thr Gly Tyr Ile Leu Leu Pro Val Leu Ile Gly Leu
 20 25 30
 Ser Val Val Gly Trp Leu Phe Tyr Trp Glu Phe Asn Pro Glu Leu Phe
 35 40 45
 Ser Gly Ile Arg Phe Ser Trp Arg Leu Val Gly Gly Leu Leu Leu Ala
 50 55 60
 Val Leu Phe Met Phe Gly Arg Asp Gly Gly Leu Met Trp Arg Phe Arg
 65 70 75 80
 Phe Ile Thr Asp Arg Glu Leu Thr Trp Arg Gln Ala Phe Arg Val Asn

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<210> 7481
<211> 152
<212> PRT
<213> B.fragilis
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Arg	Lys	Glu	Ser	Tyr	Leu	Cys	Asp	Arg	Ser	Ile	Phe	Leu	Ser	Ile	Glu
1				5					10					15	
Phe	Met	Lys	Arg	Arg	Leu	Ile	Gln	Phe	Val	Thr	Thr	Tyr	Phe	Leu	Phe
			20					25					30		
Val	Leu	Ile	Phe	Val	Leu	Gln	Lys	Pro	Ile	Phe	Met	Gly	Tyr	Tyr	His
		35					40					45			
Thr	Leu	Tyr	Asn	Lys	Val	Ser	Trp	Thr	Asp	Tyr	Phe	Ser	Val	Met	Gly
	50					55					60				
His	Gly	Leu	Pro	Leu	Asp	Phe	Ser	Leu	Ala	Gly	Tyr	Leu	Thr	Ala	Ile
65					70					75					80
Pro	Gly	Leu	Leu	Leu	Ile	Ala	Ser	Val	Trp	Ile	Gln	Pro	Ala	Val	Ile
				85					90					95	
Arg	Gln	Ile	Arg	Arg	Gly	Tyr	Phe	Met	Ile	Ile	Ala	Ile	Leu	Leu	Ser
			100					105					110		
Cys	Ile	Phe	Ile	Gly	Asp	Leu	Asp	Cys	Met	Asn	Thr	Glu	Asp	Ser	Ala
		115					120					125			
Trp	Met	Pro	Leu	Arg	Cys	Ser	Thr	Ser	Ser	Pro	Arg	Pro	Lys	Met	Leu
	130					135					140				
Trp	Pro	Val	Ser	Ala	Phe	Gly	Ser								

145

150

<210> 7482

<211> 62

<212> PRT

<213> B.fragilis

<400> 7482

Ala	Arg	Arg	Ser	Pro	Tyr	Asn	Arg	Gln	Glu	Ser	Val	Tyr	Ile	Cys	Met
1			5						10					15	
Phe	Asp	Val	Leu	Tyr	Ile	Gly	Gln	Glu	Thr	Met	Ala	Gly	Asp	Gln	Gln
			20					25					30		
Thr	Leu	Lys	Pro	Asp	Thr	Thr	Leu	Val	Arg	Ser	Cys	Thr	Asp	Cys	Ser
		35					40					45			
Phe	Pro	Asn	Ser	Ser	Phe	Ser	Asn	His	Tyr	Thr	Asn	Leu	Gln		
	50					55					60				

<210> 7483

<211> 705

<212> PRT

<213> B.fragilis

<400> 7483

Gln	Ser	Ile	Pro	Thr	Gly	Thr	Val	Tyr	Met	Thr	Met	Met	Lys	Gln	Ser
1			5					10						15	
Tyr	Leu	Asn	Ser	Gly	Tyr	Leu	Thr	Gln	Leu	Ile	Met	Lys	Lys	Arg	Ile
			20					25				30			
Gln	Ile	Leu	Ile	Ile	Val	Ile	Leu	Tyr	Ala	Leu	Met	Phe	Val	Pro	Leu
		35				40						45			
Ser	Ala	Gln	Thr	Pro	His	Thr	Ile	Ser	Gly	Ile	Val	Lys	Asp	Arg	Ala
	50					55					60				
Ser	Val	Pro	Ile	Ser	Gly	Val	Asn	Ile	Arg	Val	Glu	Gly	Gln	Lys	Trp
65					70					75					80
Lys	Ala	Ser	Thr	Gly	Lys	Glu	Gly	Lys	Phe	Thr	Leu	Glu	Ile	Pro	Gln
				85					90					95	
Asn	Ser	Thr	Ile	Thr	Phe	Ser	Ser	Val	Gly	Tyr	Glu	Pro	Val	Thr	Ile
			100					105					110		
His	Ser	Gly	Glu	Lys	Lys	Trp	Ile	Glu	Ile	Thr	Leu	Lys	Glu	Ser	Gln
		115					120					125			
Ser	Leu	Leu	Pro	Glu	Ile	Thr	Val	Thr	Ser	Thr	Leu	Lys	Asn	Ser	Met
	130					135					140				
Lys	Phe	Val	Phe	Ala	Pro	Ser	Asp	Leu	Glu	Leu	Ile	Lys	Asp	Met	Leu
145					150					155					160
Tyr	Leu	Lys	Thr	Arg	Tyr	Lys	Ile	Pro	Ser	Lys	Arg	Phe	Gln	Ser	Asp
				165					170					175	
Ser	Arg	Val	Ile	Ile	Gln	Pro	Ile	Leu	Ser	Asn	Asn	Ser	Arg	Gly	Thr
			180					185						190	
Gln	Lys	Asn	Phe	Ser	Pro	Ile	Val	Tyr	Asp	Gly	Lys	Asn	Tyr	Asp	Ile
		195					200					205			
Leu	Leu	Arg	Arg	Gly	Asn	Val	Cys	Gly	Asp	Arg	Ala	Glu	Lys	Glu	Tyr
	210					215					220				
Tyr	Ser	Arg	Phe	Ala	Gln	Val	Ile	Asp	Pro	Asp	Ser	Ile	Cys	Asn	Gln
225					230					235					240
Thr	Leu	Thr	Tyr	Ala	Asp	Ser	Cys	Thr	Val	Asp	Asp	Ile	Asn	Asp	Leu
				245					250					255	
Tyr	Thr	Thr	Glu	Val	Arg	Ile	Lys	Ile	Ser	Thr	Phe	Cys	Gln	Asp	Glu
			260					265					270		
Tyr	Arg	Asp	Thr	Ile	Arg	Ile	Thr	Asn	Gly	Ile	Ile	Tyr	Pro	Met	Arg
		275					280					285			

Phe Phe Asn Tyr Asn Leu Ser Ala Met Asp Leu Asp Asn Ser Tyr Ile
 290 295 300
 Pro Lys Gln Thr Pro Leu Asn Phe Asn Glu Lys Gly Glu Met His Leu
 305 310 315 320
 Arg Phe Arg Pro Glu Asp Ala Asn Ile Tyr Glu Asn Glu Gly Lys Asn
 325 330 335
 Ala Glu Glu Leu Arg Lys Met Lys Lys Ala Leu Asp Asp Ile Asp Lys
 340 345 350
 Asp Arg Thr Lys Thr Leu Thr Thr Phe Gln Ile Ile Gly Tyr Thr Ser
 355 360 365
 Pro Glu Gly Thr Tyr Glu Tyr Asn Leu Lys Leu Ala Lys Lys Arg Met
 370 375 380
 Lys Asn Ala Glu Gly Lys Val Phe Glu Asn Ile Ser Glu Glu Thr Ile
 385 390 395 400
 Arg Lys Ala Lys Val Asp Asn Asp Ala Val Val Glu Ser Trp Thr Thr
 405 410 415
 Val Cys Glu Leu Met Glu Lys Asp Ser Ile Gln Glu Val Ser Gln Leu
 420 425 430
 Lys Glu Leu Ile Lys Arg Ala Arg Gly Asn His Asn Glu Ile Ser Trp
 435 440 445
 Gly Ala Arg Arg Met Lys Ile Tyr Pro Leu Ile Arg Asp Arg Tyr Leu
 450 455 460
 Pro Arg Leu Arg Arg Val Glu Tyr Phe Tyr Glu Tyr Ser Glu Leu Arg
 465 470 475 480
 Thr Leu Asn Lys Asp Glu Ile Asp Ala Leu Tyr Lys Lys Asp Pro Gln
 485 490 495
 Lys Leu Thr Ala Ser Glu Phe Trp Ser Tyr Ile Met Ser Gln Lys Asp
 500 505 510
 Ala Thr Asp Glu Lys Arg Glu Ala Leu Tyr Arg Glu Ala Leu Ser Ile
 515 520 525
 His Pro Asp Leu Met Ile Ala Ala Asn Asn Leu Ala Ser Leu Leu Ile
 530 535 540
 Lys Gln Asn Arg Ala Asp Thr Thr Leu Leu Lys Pro Phe Ile Thr Gln
 545 550 555 560
 Asp Ala Pro Ser Ala Ile Leu Val Asn Gln Thr Val Ala Tyr Leu Gln
 565 570 575
 Lys Arg Asp Phe Lys Arg Ala Asn His Phe Ala Glu Leu Leu Pro Asp
 580 585 590
 Asn Lys Asp Thr Glu Ile Val Lys Ala Leu Ala Ala Met Asp Gly
 595 600 605
 Lys Tyr Gln Glu Ala Tyr Pro Ile Phe Glu Lys Gln Gly Gly Ile Asn
 610 615 620
 Gln Ala Ile Leu Leu Leu Ser Met Lys Gln Asn Ser Lys Ala Trp Glu
 625 630 635 640
 Val Leu Lys Lys Val Glu Asp Thr Ser Pro Asp Thr Glu Tyr Val Lys
 645 650 655
 Ala Ile Ala Ala Asn Arg Leu Asn Asn Val Asn Glu Ala Val Ile His
 660 665 670
 Leu Arg Asn Ala Ile Thr Gln Lys Pro Ser Leu Lys Glu Ile Ala Gln
 675 680 685
 Lys Asp Gly Asp Val Leu Asp Leu Leu Asp Leu Leu Asp Leu Asp Lys
 690 695 700
 Lys
 705

<210> 7484

<211> 378

<212> PRT

<213> B.fragilis

<400> 7484

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Ser Met Lys Pro His Thr Leu Phe Leu Thr Leu Gly Ile Leu Leu Leu
1          5          10          15
Gly Phe Ser Ala Cys Glu Pro Leu Asn Glu Thr Pro Glu Thr Pro Ala
20          25          30
Phe Ser Leu Asn Leu Thr Ser Pro Asp Gly Glu Pro Ser Thr Asp Asn
35          40          45
Asp Asn Ala Val Leu Gln Lys Leu Val Tyr His Leu Phe Ile Phe Arg
50          55          60
Ser Asn Thr Ala Asn Pro Ser Pro Asp Asn Asp Gly Ser Asn Tyr Thr
65          70          75          80
Phe Trp Arg His Thr Gly Asp Leu Thr Leu Lys Gln Ile Arg Glu Tyr
85          90          95
Thr Leu Ser Ile Pro Ser Glu Ser Thr Asp Arg Ser Tyr Leu Leu Leu
100         105         110
Val His Ala Thr Pro Lys Glu Lys Pro Glu Ser Glu Ile Ile Ser Lys
115         120         125
Glu Gly Met Thr Phe Ser Glu Ser Glu Ile Ser Met Ile Lys Glu Asn
130         135         140
Asp Asn Asn Tyr Val Pro Leu Ser Lys Asp Asn Tyr Tyr Ala Ile Gln
145         150         155         160
Gln Leu Thr Pro Glu Asp Ile Ala Gln Gly Lys Thr Ser Ile Glu Phe
165         170         175
Lys Leu Lys Arg Ala Val Gly Glu Leu Val Phe Asp Val Met Lys Cys
180         185         190
Asp Glu Lys Ser His Asn Pro Ile Asp Ile Asp Thr Glu Cys Ser Ser
195         200         205
Thr Leu Asp Arg Val Phe Arg Ile Asp Ile Glu Ile Asn Gly Val Ile
210         215         220
Pro Lys Val Ser Leu Thr Asn Glu Thr Lys Asn Pro Glu Arg Ile Asn
225         230         235         240
Ile Cys Phe Ser Lys Glu Ile Val Leu Lys Ser Asp Tyr Thr Pro Asp
245         250         255
Phe Ala Asn Asn Thr Glu Val Ile Glu Pro Leu Thr Asn Ala Pro Leu
260         265         270
Asp Thr Asn Glu Lys Ala Val Lys Gly Ala Thr Arg Ile Cys Gly Pro
275         280         285
Tyr Leu Phe Ser Lys Met Thr Leu Asp His Pro Asp Glu Glu Ala Thr
290         295         300
Asp Pro Glu Glu Gly Ile Lys Thr Ile Leu Asn Phe Ser Tyr Tyr Asp
305         310         315         320
Thr Thr Pro Leu Pro Asn Gly Ser Tyr Ser Thr Lys Lys Leu Ile Leu
325         330         335
Ser Leu Thr Asp Lys Pro Leu Thr Ile Val Lys Asp His Tyr Thr Val
340         345         350
Thr Asn Ile Arg Leu Arg Asn Asn Arg Ile Ile Asp Leu Ser Val Ser
355         360         365
Gly Asp Phe Gly Ile Asp Trp Lys Trp Asp
370         375

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<210> 7485

<211> 69

<212> PRT

<213> B.fragilis

<400> 7485

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Ile Leu Ala Ala Ile Phe Val Ile Pro Lys Leu Lys Glu Tyr Pro Pro
1          5          10          15

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Met Ser Arg Glu Glu Leu Gln Gln Lys Ser Arg Phe Ala Met Ile Gly
 20 25 30
 Thr Leu Met Thr Ile Val Ser Leu Val Phe Leu Phe Tyr Val Gly Ser
 35 40 45
 Ser Leu Val Asn Thr Thr Lys Lys Tyr Lys Glu Leu Ala Ile Glu Ile
 50 55 60
 Ala Cys Ile Asn Lys
 65

<210> 7486

<211> 134

<212> PRT

<213> B.fragilis

<400> 7486

Lys Gly Glu Ala Asp Ser Phe Ser Leu Phe Ser Tyr Leu Phe Phe Ser
 1 5 10 15
 Ser Ala Arg Lys Ala Gly Val Arg Gly Glu Lys Ser Gly Leu Gly Arg
 20 25 30
 Met Lys Val Trp Leu Ser Asn Pro Asn Arg Arg Leu Leu Arg Pro Gly
 35 40 45
 Gln Thr Pro Ser Ser Asp Lys Asp Glu Ala Leu Phe Cys Tyr Ile Thr
 50 55 60
 Ile Tyr Val Thr Gly Ile Ser Pro Ile Val Ile Gly Ser Ser Ser Ile
 65 70 75 80
 Arg Leu Ile Lys His Lys Asn Ala Ile Asp Lys Ile Gln Leu Gly Phe
 85 90 95
 Pro Phe Leu Leu Tyr Glu Leu Thr Asp Gln Gly Asn Lys Ile Phe Ser
 100 105 110
 Val Leu Phe Leu Phe Ile Phe Thr Asn Pro Val Asp Val Thr Glu Gly
 115 120 125
 Phe Asp Cys Arg Gly Thr
 130

<210> 7487

<211> 173

<212> PRT

<213> B.fragilis

<400> 7487

Asn Tyr Phe Leu Val Leu Ser Thr Asn Gly Leu Lys Glu Thr Lys Asn
 1 5 10 15
 Met Glu Ile Glu Lys Asp Phe Ile Asp Leu Leu Thr Glu His Lys Ala
 20 25 30
 Leu Ile Tyr Lys Val Cys Phe Met Tyr Ala Ser Asn Gln Glu Asp Leu
 35 40 45
 Asn Asp Leu Tyr Gln Glu Val Val Val Asn Leu Trp Cys Ser Tyr Pro
 50 55 60
 Lys Phe Arg Tyr Glu Ser Lys Leu Ser Thr Trp Ile Tyr Arg Val Ala
 65 70 75 80
 Leu Asn Thr Cys Ile Ser Asp Leu Arg Lys Lys Lys Ile Leu Asp Tyr
 85 90 95
 Val Pro Leu Ser Val Asp Ile Gly Val Tyr Asp Asp Cys Leu Arg Asn
 100 105 110
 Asp Ser Leu Lys Glu Met Tyr Gln Leu Ile Cys Gln Leu Asp Arg Tyr
 115 120 125
 Glu Arg Met Leu Val Leu Leu Trp Leu Asp Glu Asn Ser Tyr Asp Glu
 130 135 140
 Ile Ala Ser Ile Thr Gly Ser Asn Arg Asn Thr Val Ala Val Lys Leu

145 150 155 160
 His Arg Ile Lys Asp Lys Leu Lys Lys Met Ser Asn Gln
 165 170

<210> 7488

<211> 565

<212> PRT

<213> B.fragilis

<400> 7488

Ile Cys Ser Gln Pro Leu Lys Lys Cys Phe Met Thr Arg Val Pro Phe
 1 5 10 15
 Thr Gln Asn Tyr Arg Trp His Leu Pro Leu Leu Leu Val Phe Cys
 20 25 30
 Cys Ser Phe Phe Ile Asn Asn Gly Ala Ile Phe Ala Asp Ile Met Glu
 35 40 45
 Ser Arg Asn Ile Ile Thr Ala Arg Glu Met Val Tyr Asp His Asn Trp
 50 55 60
 Leu Val Pro Thr Met Asn Gly Glu Leu Arg Leu Glu Lys Pro Pro Leu
 65 70 75 80
 Pro Thr Trp Ile Ala Ala Ile Thr Glu Met Ile Ser Pro Asp Asn Leu
 85 90 95
 Pro Leu Gln Arg Ala Met Ala Gly Phe Ala Ala Val Met Leu Val Leu
 100 105 110
 Phe Phe Tyr Lys Phe Ala Thr Lys Leu Thr Asp Asn Arg Thr Tyr Ala
 115 120 125
 Leu Val Ser Ser Leu Val Leu Cys Thr Ser Tyr Asn Ile Ile Leu Met
 130 135 140
 Gly Arg Thr Ala Thr Trp Asp Ile Tyr Cys His Ala Phe Met Ile Gly
 145 150 155 160
 Ala Ile Tyr Tyr Leu Tyr Leu Ala Leu Arg Gln Asn Thr Cys Lys Trp
 165 170 175
 Thr Tyr Phe Ile Gly Ala Gly Ile Phe Met Gly Leu Ser Phe Leu Gly
 180 185 190
 Lys Gly Pro Val Ser Phe Tyr Ala Leu Leu Leu Pro Phe Val Cys Ala
 195 200 205
 Tyr Ile Leu Tyr Tyr Arg Lys Glu Thr Gln Met Lys Gly Lys Trp Ile
 210 215 220
 Ala Leu Ala Val Met Ile Leu Ile Gly Ile Val Leu Ser Thr Trp Trp
 225 230 235 240
 Tyr Ala Tyr Ile Tyr Ile Tyr His Gln Glu Met Ala Ser Tyr Val Phe
 245 250 255
 His Lys Glu Ser Ser Ser Trp Ser Asn His Asn Val Arg Ser Trp Tyr
 260 265 270
 Tyr Tyr Trp Gln Phe Phe Leu Glu Thr Gly Val Trp Ser Leu Leu Thr
 275 280 285
 Leu Thr Thr Leu Leu Val Pro Phe Trp Lys Lys Arg Val Glu Ser Ser
 290 295 300
 Lys Glu Tyr Leu Phe Cys Leu Ser Trp Met Leu Leu Ile Leu Phe Phe
 305 310 315 320
 Leu Ser Leu Leu Pro Glu Lys Lys Thr Arg Tyr Leu Leu Pro Ile Leu
 325 330 335
 Leu Pro Ala Ala Leu Thr Met Gly His Leu Phe Val Tyr Trp Ile Arg
 340 345 350
 Gln Ala Lys Gln Lys Met Pro Gln Leu Lys Asp Arg Val Leu Tyr Arg
 355 360 365
 Ile Asn Ala Tyr Leu Ile Val Val Ala Ala Leu Ala Leu Pro Ile Ala
 370 375 380
 Leu Tyr Leu Phe Met Tyr Arg Glu Gly Arg Met Gly Thr Gly Met Phe

3853

385 390 395 400
 Val Trp Leu Val Val Leu Phe Leu Thr Val Ala Val Trp Leu Phe Arg
 405 410 415
 Ser Ala Phe Lys Leu Gln Pro Phe Ser Phe Leu Met Gly Ile Val Ala
 420 425 430
 Leu Phe Ala Val Ala Glu Leu Phe Val Met Pro Tyr Ile Gly Ser Phe
 435 440 445
 Val Ser Asn Ser Asp Pro Lys Ser Ile Ser Ala Thr Arg Glu Asn Pro
 450 455 460
 Glu Leu Gln Pro Leu Pro Phe Tyr His Ser Lys Asp Glu Val Leu Arg
 465 470 475 480
 Ile Glu Leu Val Tyr Glu Ala His Lys Lys Ile Gly Asp Met Asp Leu
 485 490 495
 Thr Asn Lys Glu Glu Ile Ile Lys Ala Leu Pro Phe Val Leu Ile Ser
 500 505 510
 Gln Lys Pro Ala Glu Leu Leu Ile Pro Asp Ser Ile Arg Lys Asp Leu
 515 520 525
 Asn Leu Arg Phe Ile Asp Cys Tyr Asp Asn Asn Arg Trp Ala Lys Gly
 530 535 540
 His Lys Arg Tyr Asp Ser Val Phe Ile Ser Asn Val Thr Ile Val Glu
 545 550 555 560
 Pro Ile Lys Glu Gln
 565

<210> 7489

<211> 85

<212> PRT

<213> B.fragilis

<400> 7489

His Ser Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
 1 5 10 15
 Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Pro Gln Lys
 20 25 30
 Ala Leu Thr Met Leu Ile Glu Lys Arg Tyr Lys Asp Glu Asp Thr Gly
 35 40 45
 Ser Asp Gly Val Asn Ser Phe Pro Lys Leu Glu Leu Ser Tyr Ser Ala
 50 55 60
 Gly Val Cys Leu Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
 65 70 75 80
 Leu Lys Ile Lys Lys
 85

<210> 7490

<211> 551

<212> PRT

<213> B.fragilis

<400> 7490

Leu Asn Ser Lys Ile Val Met Ala Lys Glu Ile Leu Phe Asn Ile Glu
 1 5 10 15
 Ala Arg Asp Gln Leu Lys Lys Gly Val Asp Ala Leu Ala Asn Ala Val
 20 25 30
 Lys Val Thr Leu Gly Pro Lys Gly Arg Asn Val Ile Ile Glu Lys Lys
 35 40 45
 Phe Gly Ala Pro His Ile Thr Lys Asp Gly Val Thr Val Ala Lys Glu
 50 55 60
 Ile Glu Leu Thr Asp Ala Tyr Gln Asn Thr Gly Ala Gln Leu Val Lys
 65 70 75 80

Glu Val Ala Ser Lys Thr Gly Asp Asp Ala Gly Asp Gly Thr Thr Thr
 85 90 95
 Ala Thr Val Leu Ala Gln Ala Ile Ile Ala Glu Gly Leu Lys Asn Val
 100 105 110
 Thr Ala Gly Ala Ser Pro Met Asp Ile Lys Arg Gly Ile Asp Lys Ala
 115 120 125
 Val Ala Lys Val Val Asp Ser Ile Lys His Gln Ala Glu Lys Val Gly
 130 135 140
 Asp Asn Tyr Asp Lys Ile Glu Gln Val Ala Thr Val Ser Ala Asn Asn
 145 150 155 160
 Asp Pro Val Ile Gly Lys Leu Ile Ala Asp Ala Met Arg Lys Val Ser
 165 170 175
 Lys Asp Gly Val Ile Thr Ile Glu Glu Ala Lys Gly Thr Asp Thr Thr
 180 185 190
 Ile Gly Val Val Glu Gly Met Gln Phe Asp Arg Gly Tyr Leu Ser Ala
 195 200 205
 Tyr Phe Val Thr Asn Thr Glu Lys Met Glu Cys Glu Met Glu Lys Pro
 210 215 220
 Tyr Ile Leu Ile Tyr Asp Lys Lys Ile Ser Asn Leu Lys Asp Phe Leu
 225 230 235 240
 Pro Ile Leu Glu Pro Ala Val Gln Ser Gly Arg Pro Leu Leu Val Ile
 245 250 255
 Ala Glu Asp Val Asp Ser Glu Ala Leu Thr Thr Leu Val Val Asn Arg
 260 265 270
 Leu Arg Ser Gln Leu Lys Ile Cys Ala Val Lys Ala Pro Gly Phe Gly
 275 280 285
 Asp Arg Arg Lys Glu Met Leu Glu Asp Ile Ala Val Leu Thr Gly Gly
 290 295 300
 Val Val Ile Ser Glu Glu Lys Gly Leu Lys Leu Glu Gln Ala Thr Ile
 305 310 315 320
 Glu Met Leu Gly Thr Ala Asp Lys Val Thr Val Ser Lys Asp Asn Thr
 325 330 335
 Thr Ile Val Asn Gly Ala Gly Ala Lys Glu Asn Ile Lys Glu Arg Cys
 340 345 350
 Asp Gln Ile Lys Ala Gln Ile Ala Ala Thr Lys Ser Asp Tyr Asp Arg
 355 360 365
 Glu Lys Leu Gln Glu Arg Leu Ala Lys Leu Ser Gly Gly Val Ala Val
 370 375 380
 Leu Tyr Val Gly Ala Ala Ser Glu Val Glu Met Lys Glu Lys Lys Asp
 385 390 395 400
 Arg Val Asp Asp Ala Leu Arg Ala Thr Arg Ala Ala Ile Glu Glu Gly
 405 410 415
 Ile Val Ala Gly Gly Gly Val Ala Tyr Ile Arg Ala Ile Glu Ser Leu
 420 425 430
 Asp Gly Leu Lys Gly Glu Asn Asp Asp Glu Thr Thr Gly Ile Ala Ile
 435 440 445
 Ile Lys Arg Ala Ile Glu Glu Pro Leu Arg Gln Ile Val Ala Asn Ala
 450 455 460
 Gly Lys Glu Gly Ala Val Val Val Gln Lys Val Ser Glu Gly Lys Gly
 465 470 475 480
 Asp Phe Gly Tyr Asn Ala Arg Thr Asp Val Tyr Glu Asn Met His Ala
 485 490 495
 Ala Gly Val Val Asp Pro Ala Lys Val Thr Arg Val Ala Leu Glu Asn
 500 505 510
 Ala Ala Ser Ile Ala Gly Met Phe Leu Thr Thr Glu Cys Val Ile Val
 515 520 525
 Glu Lys Lys Glu Asp Lys Pro Glu Met Pro Met Gly Ala Pro Gly Met
 530 535 540
 Gly Gly Met Gly Gly Met Met

545

550

<210> 7491

<211> 338

<212> PRT

<213> B.fragilis

<400> 7491

Thr Val Ala Lys Val Arg Phe Phe Ser Leu Ser Leu Arg Ile Asn Cys
 1 5 10 15
 Gly Lys Thr Glu Arg Tyr Met Ala Lys Ile Ala Lys Lys Leu Thr Glu
 20 25 30
 Leu Ile Gly His Thr Pro Leu Met Glu Leu Ser Gly Tyr Ser Arg Lys
 35 40 45
 Tyr Gly Leu Gln Glu Asn Ile Val Ala Lys Leu Glu Ser Phe Asn Pro
 50 55 60
 Ala Gly Ser Val Lys Asp Arg Val Ala Leu Ser Met Ile Glu Asp Ala
 65 70 75 80
 Glu Glu Arg Gly Val Leu Gln Pro Gly Ala Thr Ile Ile Glu Pro Thr
 85 90 95
 Ser Gly Asn Thr Gly Val Gly Leu Ala Met Val Ala Thr Ile Lys Gly
 100 105 110
 Tyr Arg Leu Ile Leu Thr Met Pro Glu Thr Met Ser Leu Glu Arg Arg
 115 120 125
 Asn Leu Lys Ala Leu Gly Ala Gln Ile Val Leu Thr Asn Gly Gln
 130 135 140
 Lys Gly Met Ala Gly Ser Ile Ala Lys Ala Glu Glu Leu Lys Lys Ser
 145 150 155 160
 Ile Pro Gly Ser Val Ile Leu Gln Gln Phe Glu Asn Pro Ala Asn Thr
 165 170 175
 Glu Val His Ala Arg Ser Thr Gly Glu Glu Ile Trp Gln Asp Thr Asp
 180 185 190
 Gly Glu Val Ala Val Phe Val Ala Gly Val Gly Thr Gly Gly Thr Val
 195 200 205
 Cys Gly Val Ala Arg Ala Leu Lys Lys His Asn Pro Asn Val Tyr Ile
 210 215 220
 Val Ala Val Glu Pro Ala Ser Ser Pro Val Leu Glu Gly Gly Lys Ala
 225 230 235 240
 Ala Ser His Arg Ile Gln Gly Ile Gly Ala Asn Phe Val Pro Gly Ile
 245 250 255
 Tyr Asp Ala Ser Val Val Asp Glu Val Met Pro Val Pro Asp Asp Glu
 260 265 270
 Ala Ile Arg Gly Gly Arg Glu Leu Ala Ser Thr Glu Gly Leu Leu Val
 275 280 285
 Gly Ile Ser Ser Gly Ala Ala Val Tyr Ala Ala Arg Gln Leu Ala Gly
 290 295 300
 Arg Pro Glu Phe Lys Gly Lys Met Ile Val Thr Leu Leu Pro Asp Thr
 305 310 315 320
 Gly Glu Arg Tyr Leu Thr Thr Glu Leu Phe Ala Phe Asp Ala Tyr Pro
 325 330 335
 Leu Asp

<210> 7492

<211> 63

<212> PRT

<213> B.fragilis

<400> 7492

Val Arg Lys Lys Gly Glu Ala Val Ser Phe Pro Leu Leu Leu Tyr Phe
 1 5 10 15
 Asn Leu Asn Ile Val Tyr Asp Tyr Ala Asp Lys Asp Thr Thr Ile Asn
 20 25 30
 Asn Lys Ser Gln Val Leu Gly Leu Leu Phe Phe Arg Ile Ile Cys Ile
 35 40 45
 Val Ala Ser Val Arg Glu His Arg Gln Glu Ala Leu Pro Ala Lys
 50 55 60

<210> 7493

<211> 181

<212> PRT

<213> B.fragilis

<400> 7493

Ser Met Lys Lys Arg Ala Phe Phe Leu Leu Leu Leu Leu Leu Ile Pro
 1 5 10 15
 Leu Thr Ser Ile Leu Ser Gln Glu Ile Ala Leu Lys Thr Asn Val Leu
 20 25 30
 Ser Trp Ala Thr Thr Thr Ile Asn Leu Gly Ala Glu Phe Lys Ile Ser
 35 40 45
 Pro Arg Leu Thr Ala Gly Ala Asp Ile Met Tyr Lys Gly Trp Ser Phe
 50 55 60
 Leu Ser Asp Asn Arg Lys Met Gly Gly Phe Leu Val Gln Pro Glu Ala
 65 70 75 80
 Lys Tyr Trp Phe Cys Ile Pro Phe Tyr Lys His Phe Met Gly Leu His
 85 90 95
 Ala His Tyr Gly Gln Tyr Asn Gly Gly Phe Ser Lys Tyr Arg Tyr Gln
 100 105 110
 Gly Asp Leu Tyr Gly Ile Gly Leu Ser Tyr Gly Tyr Gln Trp Ile Trp
 115 120 125
 Lys Arg Arg Trp Asn Ile Glu Val Ser Ala Gly Ile Gly Tyr Ala Ser
 130 135 140
 Met Asn Tyr Asp Lys Tyr Glu Arg Pro Lys Cys Gly Leu Phe Leu Gly
 145 150 155 160
 Lys Asp His Ser Asn Tyr Phe Gly Leu Thr Lys Leu Gly Val Ser Leu
 165 170 175
 Ile Tyr Ile Leu Lys
 180

<210> 7494

<211> 270

<212> PRT

<213> B.fragilis

<400> 7494

Leu Thr Thr Leu Arg Thr Arg Arg Glu Asp Arg Phe Leu Arg Pro Asn
 1 5 10 15
 Leu Thr His Ser Met Asp Leu Tyr Tyr Gly Ala Trp Ala Val Leu Asp
 20 25 30
 Pro Thr Arg Asn Met Val Asp Ala Phe Glu Cys Thr Asp Gly Lys Pro
 35 40 45
 Trp Gly Glu Ser Pro Leu Thr Val Arg Pro Asp Glu Ser Ile Leu Tyr
 50 55 60
 Gly Asn Asp Asp Ala Leu Lys Lys Ala Glu Arg Ala Lys Met Phe Met
 65 70 75 80
 Asn Arg Asp Arg Arg Leu Tyr Glu Ser Val Asn His Ser Met Met Ala
 85 90 95
 Asn Phe Val Asp Asp Gly Phe Lys Asp Glu Glu Val Gln Val Asn Glu

<210> 7496
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 <212> PRT
 <213> B.fragilis

<400> 7496

Ser	Met	Lys	Lys	His	Leu	Ile	Ser	Met	Ala	Ala	Thr	Val	Ile	Leu	Leu
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Thr	Ala	Cys	Gly	Gly	Ala	Lys	Lys	Thr	Asn	Thr	Ala	Glu	Ala	Asp	Asn
			20					25					30		
Phe	Lys	Tyr	Thr	Val	Glu	Gln	Phe	Ala	Asp	Leu	Gln	Ile	Leu	Arg	Tyr
	35						40					45			
Arg	Val	Pro	Gly	Phe	Glu	Asn	Leu	Thr	Leu	Lys	Gln	Lys	Glu	Leu	Val
	50					55					60				
Tyr	Tyr	Leu	Thr	Gln	Ala	Leu	Glu	Gly	Arg	Asp	Ile	Leu	Phe	Asp	
65				70					75					80	
Gln	Asn	Gly	Lys	Tyr	Asn	Leu	Thr	Ile	Arg	Arg	Met	Leu	Glu	Thr	Ile
			85						90					95	
Tyr	Thr	Asp	Tyr	Thr	Gly	Asp	Arg	Asn	Ser	Pro	Asp	Phe	Val	Asn	Leu
		100						105					110		
Thr	Thr	Tyr	Leu	Lys	Arg	Val	Trp	Phe	Ser	Asn	Gly	Ile	His	His	His
		115					120					125			
Tyr	Gly	Ser	Glu	Lys	Phe	Val	Pro	Gly	Phe	Thr	Pro	Glu	Phe	Leu	Lys
	130				135						140				
Gln	Ala	Leu	Leu	Ser	Val	Asp	Ala	Ser	Lys	Leu	Pro	Leu	Ala	Gln	Gly
145				150						155					160
Gln	Thr	Val	Glu	Gln	Leu	Phe	Glu	Glu	Leu	Ser	Pro	Val	Ile	Phe	Asp
			165					170						175	
Pro	Lys	Val	Met	Pro	Lys	Arg	Val	Asn	Gln	Ala	Asp	Gly	Glu	Asp	Leu
		180						185					190		
Val	Leu	Thr	Ser	Ala	Ser	Asn	Tyr	Tyr	Asp	Gly	Val	Thr	Gln	Gln	Glu
		195					200					205			
Ala	Glu	Ala	Phe	Tyr	Asn	Ala	Leu	Lys	Asn	Pro	Lys	Asp	Glu	Thr	Pro
	210					215					220				
Val	Ser	Tyr	Gly	Leu	Asn	Ser	Arg	Leu	Val	Lys	Glu	Asp	Gly	Lys	Ile
225					230					235					240
Ile	Glu	Lys	Val	Trp	Lys	Val	Gly	Gly	Leu	Tyr	Thr	Gln	Ala	Ile	Glu
			245						250					255	
Lys	Ile	Val	Tyr	Trp	Leu	Lys	Lys	Ala	Glu	Gly	Val	Ala	Glu	Asp	Asp
		260						265					270		
Ala	Gln	Lys	Ala	Ala	Ile	Gly	Lys	Leu	Ile	Glu	Tyr	Tyr	Glu	Thr	Gly
		275					280					285			
Asp	Leu	Lys	Thr	Phe	Asp	Glu	Tyr	Ala	Ile	Leu	Trp	Val	Lys	Asp	Leu
	290					295					300				
Asn	Ser	Arg	Val	Asp	Phe	Thr	Asn	Gly	Phe	Thr	Glu	Ser	Tyr	Gly	Asp
305					310					315					320
Pro	Leu	Gly	Met	Lys	Ala	Ser	Trp	Glu	Ser	Ile	Val	Asn	Phe	Lys	Asp
			325						330					335	
Leu	Glu	Ala	Thr	Arg	Arg	Thr	Glu	Leu	Ile	Ser	Ser	Asn	Ala	Gln	Trp
		340						345					350		
Phe	Glu	Asp	His	Ser	Pro	Val	Asp	Lys	Gln	Phe	Lys	Lys	Glu	Lys	Val
		355						360				365			
Lys	Gly	Val	Thr	Ala	Lys	Val	Ile	Thr	Ala	Ala	Ile	Leu	Gly	Gly	Asp
	370					375					380				
Leu	Tyr	Pro	Ser	Thr	Ala	Ile	Gly	Ile	Asn	Leu	Pro	Asn	Ser	Asn	Trp
385					390					395					400
Ile	Arg	Ser	His	His	Gly	Ser	Lys	Ser	Val	Thr	Ile	Gly	Asn	Ile	Thr
			405						410					415	
Asp	Ala	Tyr	Asn	Lys	Ala	Ala	His	Gly	Asn	Gly	Phe	Asn	Glu	Glu	Phe

Val	Tyr	Ser	Asp	Thr	Glu	Lys	Gln	Leu	Ile	Asp	Lys	Tyr	Ala	Asp	Leu
		435					440					445			
Thr	Gly	Glu	Leu	His	Thr	Asp	Leu	His	Glu	Cys	Leu	Gly	His	Gly	Ser
	450					455					460				
Gly	Lys	Leu	Leu	Pro	Gly	Val	Asp	Pro	Asp	Ala	Leu	Lys	Ala	Tyr	Gly
465					470					475					480
Ser	Thr	Ile	Glu	Glu	Ala	Arg	Ala	Asp	Leu	Phe	Gly	Leu	Tyr	Tyr	Val
			485						490						495
Ala	Asp	Pro	Lys	Leu	Leu	Glu	Leu	Gly	Leu	Val	Pro	Ser	Glu	Asp	Ala
		500						505					510		
Tyr	Lys	Ala	Glu	Tyr	Tyr	Thr	Tyr	Leu	Met	Asn	Gly	Leu	Met	Thr	Gln
	515						520					525			
Leu	Val	Arg	Ile	Glu	Pro	Gly	Asn	Ser	Val	Glu	Glu	Ala	His	Met	Arg
	530					535					540				
Asn	Arg	Gln	Leu	Ile	Ala	Arg	Trp	Val	Phe	Glu	Lys	Gly	Lys	Ala	Asp
545					550					555					560
Lys	Val	Val	Glu	Met	Val	Gln	Lys	Asp	Gly	Lys	Thr	Tyr	Val	Val	Val
			565						570						575
Asn	Asp	Tyr	Gln	Lys	Leu	Arg	His	Leu	Phe	Gly	Glu	Leu	Leu	Ala	Glu
			580					585					590		
Ile	Gln	Arg	Ile	Lys	Ser	Thr	Gly	Asp	Phe	Asp	Ala	Ala	Arg	Ser	Leu
	595						600					605			
Val	Glu	Asn	Tyr	Ala	Val	Lys	Val	Asp	Pro	Glu	Leu	His	Ser	Glu	Val
	610					615					620				
Leu	Thr	Arg	Tyr	Lys	Lys	Leu	Asn	Leu	Ala	Pro	Tyr	Lys	Gly	Phe	Val
625					630					635					640
Asn	Pro	Arg	Tyr	Asp	Ala	Val	Ile	Asp	Glu	Gln	Gly	Asn	Ile	Val	Asp
				645					650					655	
Val	Gln	Val	Thr	Tyr	Asp	Glu	Gly	Tyr	Ala	Glu	Gln	Met	Leu	Arg	Tyr
			660					665					670		
Ser	Arg	Asp	Tyr	Ser	Pro	Leu	Pro	Ser	Ile	Asn	Asp				
		675						680							

<210> 7497

<211> 294

<212> PRT

<213> B.fragilis

<400> 7497

Lys	Glu	Ile	Glu	Glu	Ser	Asp	Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu
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Thr	Glu	Lys	Tyr	Asp	Ala	Lys	Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr
		20						25					30		
Arg	Pro	Gly	Val	Tyr	Val	Ile	Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn
	35						40					45			
Ser	Asp	Gly	Asn	Thr	Asn	Val	Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys
	50					55				60					
Arg	Phe	Phe	Ala	Leu	Leu	Glu	Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe
65					70					75					80
Arg	Ala	Asp	Cys	Gly	Ser	Cys	Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu
			85						90					95	
Lys	His	Cys	Lys	His	Phe	Tyr	Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu
		100						105					110		
Tyr	Asn	Asp	Ile	Phe	Ala	Leu	Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn
	115						120					125			
Gly	Ile	Gln	Phe	Glu	Leu	Asn	Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly
	130					135					140				
Lys	Cys	Tyr	Arg	Leu	Val	Ile	Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp

145 150 155 160
 Leu Asp Leu Trp Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn
 165 170 175
 Asp Tyr Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg
 180 185 190
 Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp
 195 200 205
 Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu
 210 215 220
 Leu Thr Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu
 225 230 235 240
 Asp Thr Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe
 245 250 255
 Val Phe Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg
 260 265 270
 Gln Tyr Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro
 275 280 285
 Phe Lys Thr Glu Phe Gly
 290

<210> 7498

<211> 225

<212> PRT

<213> B.fragilis

<400> 7498

Pro Gln Asn Asp Met Thr Asn Asp Met Ile Gln Leu Leu Val Asn Thr
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 Asp Gln Asn Leu Leu Leu Tyr Leu Asn Gly Phe His Asn Ala Phe Gly
 20 25 30
 Asp Tyr Phe Met Ser Thr Phe Thr Gly Lys Trp Ile Trp Val Pro Met
 35 40 45
 Tyr Ala Ser Ile Leu Tyr Val Leu Leu Lys Asn Phe Asn Trp Lys Ile
 50 55 60
 Thr Leu Cys Cys Leu Thr Ala Ile Ala Leu Thr Ile Leu Phe Ala Asp
 65 70 75 80
 Gln Val Cys Ala Ser Leu Ile Arg Pro Ala Val Glu Arg Leu Arg Pro
 85 90 95
 Ser Asn Pro Ala Asn Pro Ile Ser Asp Leu Val His Ile Val Asn Asn
 100 105 110
 Tyr Arg Gly Gly Arg Tyr Gly Phe Pro Ser Cys His Ala Ser Asn Ser
 115 120 125
 Phe Gly Leu Ala Phe Phe Leu Val Phe Leu Phe Arg Lys Arg Trp Leu
 130 135 140
 Ser Leu Phe Ile Leu Leu Trp Ala Thr Leu Asn Cys Tyr Thr Arg Ile
 145 150 155 160
 Tyr Leu Gly Val His Tyr Pro Gly Asp Leu Ile Val Gly Ala Ile Ile
 165 170 175
 Gly Cys Cys Gly Ala Ala Phe Met Cys Tyr Leu Leu Lys Lys Thr Ala
 180 185 190
 Arg Gly Ala Ser Phe Gly Lys Val Lys His Thr Glu Ile Thr Ile Tyr
 195 200 205
 Val Gly Leu Leu Thr Thr Ile Gly Ile Val Val Tyr Ala Ser Ile Met
 210 215 220
 Ala
 225

<210> 7499

<211> 231

<212> PRT

<213> B.fragilis

<400> 7499

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Arg Tyr Arg Glu Gly Arg Tyr Thr Gly Val Gln Asn Glu Ile Thr Asn
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Tyr Lys Leu Lys Thr Thr Met Asp Lys Lys Leu Leu Met Met Ala Leu
20      25      30
Leu Ile Thr Thr Gly Leu Ala Thr His Ala Gln Glu Lys Leu Thr Arg
35      40      45
Tyr Gln Val Arg Asn Ala Ile Thr Val Arg Thr Pro Ile Met Asn Asp
50      55      60
Ser Ile Asn Pro Lys Gly Glu Lys His Thr Ala Lys Ala Leu Leu Gln
65      70      75      80
Thr Pro Val Val Leu Asp Leu Ala Asn Ala Pro Thr Gln Met Thr Ala
85      90      95
Ala Asp Thr Ala Gly Leu Val Thr Phe Ala Lys Ala Asp Lys Asp Asn
100     105     110
Leu Leu Tyr Leu Ile Lys Thr Gln Leu Arg Ala Glu Arg Phe Met Lys
115     120     125
Gly Lys Leu Lys Val Thr Ser Pro Val Arg Trp Glu Leu Phe Ile Asn
130     135     140
Gly Glu Ser Lys Met Val Lys Asp Ala Ser Glu Asp Ser Ile Ser Lys
145     150     155     160
Ala Ala Thr Lys Glu Val Ala Leu Arg Leu Glu Pro Glu Met Asp Tyr
165     170     175
Glu Ile Ala Ile Lys Leu Leu Ser Thr Pro Asp Asp Lys Thr Val Pro
180     185     190
Ser Leu Lys Cys Glu Leu Val Lys Asp Asp Lys Phe Lys Glu Val Ala
195     200     205
Cys Ser Thr Asp Pro Glu Gln Lys His Arg Phe Ser Leu Asp Asn Thr
210     215     220
Asn Leu Arg Glu Thr Gly Pro
225     230

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<210> 7500

<211> 166

<212> PRT

<213> B.fragilis

<400> 7500

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Asn Gly Ala Asp Met Glu Thr Gln Asn Val Lys Asp Thr Val Arg Gln
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Ile Phe Thr Glu Tyr Leu Asn Ala Asn Gly His Arg Lys Thr Pro Glu
20      25      30
Arg Tyr Ala Ile Leu Asp Thr Ile Tyr Ser Ile Asp Gly His Phe Asp
35      40      45
Ile Asp Met Leu Tyr Ser Gln Met Met Asn Gln Glu Asn Phe Arg Val
50      55      60
Ser Arg Ala Thr Leu Tyr Asn Thr Ile Ile Leu Leu Ile Asn Ala Arg
65      70      75      80
Leu Val Ile Lys His Gln Phe Gly Thr Ser Ser Gln Tyr Glu Lys Ser
85      90      95
Tyr Asn Arg Glu Thr His His His Gln Ile Cys Thr Gln Cys Gly Lys
100     105     110
Val Thr Glu Phe Gln Asn Glu Ala Leu Gln Asn Ala Ile Glu Asn Thr
115     120     125
Lys Leu Ser Lys Phe Gln Leu Ser His Tyr Ser Leu Tyr Ile Tyr Gly
130     135     140

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Ile Cys Ser Lys Cys Asp Arg Ala Asn Lys Arg Lys Arg Val Asn Asn
 145 150 155 160
 Asn Asn Lys Lys Glu Lys
 165

<210> 7501

<211> 608

<212> PRT

<213> B.fragilis

<400> 7501

Lys Met Asn Glu Lys Tyr Gln Met Ile Gln Thr Leu Lys Thr Tyr Phe
 1 5 10 15
 Gly Tyr Asp Ser Phe Arg Pro Leu Gln Glu Glu Ile Ile His Asn Leu
 20 25 30
 Ile Ser Lys Lys Asp Ser Leu Val Leu Met Pro Thr Gly Gly Gly Lys
 35 40 45
 Ser Ile Cys Tyr Gln Leu Pro Ala Leu Leu Met Glu Gly Thr Ala Ile
 50 55 60
 Val Ile Ser Pro Leu Ile Ser Leu Met Lys Asp Gln Val Glu Thr Leu
 65 70 75 80
 Arg Ala Asn Gly Ile Pro Ala Gly Ala Leu Asn Ser Ser Asn Asp Glu
 85 90 95
 Thr Glu Asn Ala Asn Leu Arg Arg Ala Cys Ile Ser Gly Gln Leu Lys
 100 105 110
 Leu Leu Tyr Ile Ser Pro Glu Lys Leu Leu Ser Glu Ala Asp Tyr Leu
 115 120 125
 Leu Arg Asp Met Thr Leu Ser Leu Phe Ala Val Asp Glu Ala His Cys
 130 135 140
 Ile Ser Gln Trp Gly His Asp Phe Arg Pro Glu Tyr Ala Arg Met Gly
 145 150 155 160
 Phe Leu Arg Asn Gln Phe Pro Asn Val Pro Met Ile Ala Leu Thr Ala
 165 170 175
 Thr Ala Asp Lys Ile Thr Arg Glu Asp Ile Val Arg Gln Leu Gln Leu
 180 185 190
 Arg Gln Pro Gln Ile Phe Ile Ser Ser Phe Asp Arg Pro Asn Leu Ser
 195 200 205
 Leu Ser Val Lys Arg Gly Tyr Gln Pro Lys Glu Lys Ser Lys Ala Ile
 210 215 220
 Ile Asp Phe Ile Thr Arg His Arg Gly Glu Ser Gly Ile Val Tyr Cys
 225 230 235 240
 Met Ser Arg Ser Lys Thr Glu Thr Val Ala Gln Met Leu Gln Lys His
 245 250 255
 Gly Ile Arg Cys Gly Val Tyr His Ala Gly Leu Ser Ala Arg Gln Arg
 260 265 270
 Asp Glu Thr Gln Asp Asp Phe Ile Asn Asp Arg Ile Glu Val Val Cys
 275 280 285
 Ala Thr Ile Ala Phe Gly Met Gly Ile Asp Lys Ser Asn Val Arg Trp
 290 295 300
 Val Ile His Tyr Asn Leu Pro Lys Ser Ile Glu Ser Phe Tyr Gln Glu
 305 310 315 320
 Ile Gly Arg Ala Gly Arg Asp Gly Met Ala Ser Asp Thr Ile Leu Phe
 325 330 335
 Tyr Ser Leu Gly Asp Leu Ile Leu Leu Thr Lys Phe Ala Thr Glu Ser
 340 345 350
 Asn Gln Gln Asn Ile Asn Leu Glu Lys Leu Asn Arg Met Gln Gln Tyr
 355 360 365
 Ala Glu Ser Asp Ile Cys Arg Arg Ile Leu Leu Ser Tyr Phe Gly
 370 375 380

Glu Thr Thr Thr Glu Asp Cys Gly Asn Cys Asp Val Cys Arg Asn Pro
 385 390 395 400
 Pro Glu Arg Phe Asp Gly Thr Ile Ile Val Gln Lys Ala Leu Ser Ala
 405 410 415
 Ile Ala Arg Thr Asn Gln Gln Val Ser Ile Thr Leu Leu Ile Asp Ile
 420 425 430
 Leu Arg Gly Asn Pro Thr Thr Glu Ile Thr Glu Lys Ala Tyr Thr Glu
 435 440 445
 Leu Lys Thr Phe Gly Ala Gly Arg Asp Ile Pro Ala Arg Asp Trp Gln
 450 455 460
 Asp Tyr Leu Leu Gln Met Leu Gln Met Gly Tyr Phe Glu Ile Ala Tyr
 465 470 475 480
 Asn Glu Asn Asn His Leu Lys Ile Thr Gly Ser Gly Ser Asp Val Leu
 485 490 495
 Phe Gly Arg Glu Arg Ala Met Leu Val Val Ile Arg Arg Glu Glu Pro
 500 505 510
 Ala Thr Ala Lys Arg Arg Lys Lys Ser Ala Ala Thr Pro Thr Gln Ala
 515 520 525
 Trp Ala Glu Glu Ser Arg Ser Lys Glu Glu Asp Leu Phe Glu Ala Leu
 530 535 540
 Arg Ala Leu Arg Lys Gln Leu Ala Asp Gln Glu Ala Leu Pro Ala Tyr
 545 550 555 560
 Ile Val Leu Ser Asp Lys Val Leu His Leu Leu Cys Leu Ser Arg Pro
 565 570 575
 Thr Thr Val Glu Ala Phe Gly Asn Ile Asn Gly Ile Gly Glu Tyr Lys
 580 585 590
 Lys Lys Lys Tyr Gly Lys Asp Phe Val Ala Leu Ile Arg Gln Phe Val
 595 600 605

<210> 7502

<211> 194

<212> PRT

<213> B.fragilis

<400> 7502

Arg Asn Met Glu Leu Asp Glu Leu Lys Gln Lys Trp Thr Glu Leu Ser
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 Glu Gln Val Glu Lys Asn Glu Leu Leu Asn Arg Gln Ile Ile Asp
 20 25 30
 Met Ile Gln Ser Lys Lys Glu Thr His Leu Gln Gln Gln Leu Arg Val
 35 40 45
 Glu Lys Met Ala Phe Gly Val Leu Gly Ile Phe Leu Gly Ile Val Cys
 50 55 60
 Tyr Thr Phe Trp Arg Asn Val Ala Pro Gly Trp Ile Ser Trp Tyr Leu
 65 70 75 80
 Leu Gly Met Val Ile Trp Leu Leu Leu Met Gln Thr Leu Met Phe Arg
 85 90 95
 Ile Ile Tyr Thr Leu Lys Thr Val Thr Glu His Val Glu Gln Gln Tyr
 100 105 110
 Lys Arg Leu Gln Ser Tyr Lys Val Leu Met Asn Leu Thr Tyr Ile Phe
 115 120 125
 Ser Tyr Val Ile Ile Thr Pro Val Ile Ile Ala Phe Phe Tyr Ile Trp
 130 135 140
 His Asn Pro Leu Phe Arg Thr Val Leu Cys Val Met Ile Leu Ala Gly
 145 150 155 160
 Phe Leu Gly Asp Tyr Phe Ile Tyr His Lys Thr Gly Asp Arg Leu Lys
 165 170 175
 Gly Phe Arg Asp Ala Val Arg Ala Leu Gln Asp Leu Lys Ser Gly Lys
 180 185 190

1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319</
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<211> 395

<212> PRT

<213> B.fragilis

<400> 7503

Ser	Asp	Lys	Leu	Tyr	Ile	Arg	Tyr	Asn	Arg	Lys	Leu	Gly	Ser	Gly	Arg
1				5					10					15	
Leu	Arg	Ser	Met	Lys	Ile	Arg	Thr	Ala	Phe	Phe	Ile	Phe	Cys	Ile	Ser
			20					25					30		
Leu	Leu	Leu	Gly	Ala	Cys	Ser	Gln	Val	Ala	Thr	Glu	Ser	Arg	Val	Gln
		35					40					45			
Ser	Ile	Ser	Phe	Glu	Val	Gly	Ser	Ser	Met	Ile	Ala	Asp	Thr	Phe	Phe
	50					55				60					
Leu	Asp	Ser	Leu	Phe	Leu	Phe	Met	Pro	Glu	Thr	Asn	Glu	Glu	Ala	Leu
65				70						75					80
Ile	Asn	Asn	Ile	Asp	Arg	Val	Tyr	Glu	Ser	Asn	Gly	Arg	Tyr	Phe	Ile
			85						90					95	
Leu	Asp	Lys	Arg	Met	Lys	Gln	Gly	Ala	Leu	Tyr	Thr	Leu	Phe	Gly	Lys
			100					105					110		
His	Leu	Phe	Thr	Ile	His	Ala	Val	Gly	Asn	Gly	Lys	Gly	Glu	Tyr	Val
	115						120					125			
Asp	Leu	Phe	Asp	Ile	Ala	Ile	Asp	Glu	Ala	Glu	Asn	Lys	Leu	Leu	Leu
	130					135					140				
Leu	Thr	Tyr	Pro	Ser	Gln	Ile	Leu	Tyr	Tyr	Asp	Leu	Glu	Gly	Thr	Tyr
145				150						155					160
Leu	Ser	Ser	Tyr	Pro	Leu	Asp	Asp	Met	Tyr	Gln	Ser	Phe	Ala	Val	Asp
			165						170					175	
Lys	Gly	Phe	Ile	Tyr	Leu	Arg	Asn	Asp	Thr	Tyr	Ala	Asn	Gly	Val	Val
			180					185					190		
Ser	Asp	Tyr	Ser	Leu	Ile	Val	Ile	Asn	Lys	Glu	Thr	Gly	Lys	Gln	Thr
	195						200					205			
Ser	Leu	Leu	Glu	Pro	Leu	Tyr	Glu	Thr	Ala	Pro	Phe	Cys	Ser	Ser	Gly
	210					215					220				
Asn	Tyr	Gln	Ile	Thr	Asn	Thr	Ala	Ser	Val	Leu	Phe	Thr	Arg	Lys	Phe
225				230						235					240
Asp	Asn	His	Ile	Tyr	Arg	Ile	Thr	Gly	Glu	Ser	Ile	Glu	Pro	Leu	Tyr
			245						250					255	
Met	Val	Asp	Trp	Lys	Asp	Lys	Ala	Phe	Pro	Glu	Ser	Asp	Lys	Gln	Arg
			260					265					270		
Gln	Phe	Gln	Cys	Asn	Asp	Leu	Asn	Gln	Phe	Cys	Tyr	Gln	Gly	Lys	Tyr
	275						280					285			
Val	Tyr	Thr	Met	Thr	Asp	Leu	Cys	Asp	Thr	Pro	Ser	Tyr	Leu	Leu	Phe
	290					295					300				
Arg	Thr	Asn	Gln	Pro	Gly	Met	Cys	Leu	Leu	Ser	Lys	Ala	Thr	Ser	Thr
305				310						315					320
Val	Asn	Asn	Tyr	Gln	Val	Ile	Ile	Asn	Thr	Asp	Tyr	Gln	Leu	Pro	Leu
			325						330					335	
Pro	Asn	Tyr	Met	Ser	Val	Glu	Gly	Lys	Gln	Ser	Arg	Ile	Phe	Phe	Ile
			340					345					350		
Tyr	Ser	Ser	Glu	Val	Leu										

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 <212> PRT
 <213> B.fragilis

<400> 7504

Pro	Arg	Tyr	Trp	Asp	Asn	His	Ser	Leu	Lys	Arg	Ser	Arg	Thr	Tyr	Cys
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Glu	Leu	Thr	Glu	Leu	Lys	Thr	Gly	Lys	Val	Leu	Leu	Thr	Asn	Leu	Arg
			20					25					30		
Asp	Gly	Met	Arg	Trp	Met	Pro	Lys	Ser	Asn	Lys	Leu	Tyr	Tyr	Thr	Val
		35					40					45			
Val	Ala	Pro	Glu	Gly	Asn	Asp	Val	Ile	Thr	Leu	Asp	Pro	Val	Thr	Leu
	50					55					60				
Lys	Glu	Glu	Val	Leu	Leu	Arg	Gly	Ile	Pro	Glu	Gln	Gly	Phe	Ser	Trp
65					70					75					80
Ser	Pro	Asn	Glu	Asp	Phe	Leu	Ile	Tyr	Tyr	Pro	Arg	Glu	Glu	Gly	Val
				85					90					95	
Lys	Asp	Glu	Gly	Pro	Leu	Lys	Arg	Ile	Val	Ser	Pro	Ala	Asp	Arg	Ile
			100					105					110		
Pro	Asn	Thr	Arg	Gly	Arg	Ser	Phe	Leu	Ala	Arg	Tyr	Asp	Ile	Ala	Ser
		115					120					125			
Gly	Thr	Ser	Glu	Arg	Leu	Thr	Tyr	Gly	Asn	His	Ser	Thr	Tyr	Met	Gln
		130				135					140				
Asp	Ile	Ser	Pro	Asp	Gly	Lys	Tyr	Leu	Leu	Tyr	Ser	Ser	Ser	Lys	Glu
145					150					155					160
Asn	Ile	Thr	Gln	Arg	Pro	Phe	Ser	Leu	Ser	Ser	Leu	Phe	Gln	Val	Asn
				165					170					175	
Leu	Glu	Thr	Leu	Ala	Val	Asp	Thr	Leu	Phe	Phe	Glu	Asp	Arg	Phe	Leu
			180					185					190		
Gly	Gly	Ala	Ser	Tyr	Ser	Pro	Asp	Gly	Lys	Gln	Leu	Leu	Leu	Thr	Ala
		195					200					205			
Ser	Pro	Glu	Ala	Phe	Asp	Gly	Ile	Gly	Lys	Asn	Cys	Gly	Asn	His	Pro
		210				215					220				
Ile	Ala	Asn	Asp	Phe	Asp	Ser	Gln	Ala	Phe	Ile	Met	Asp	Leu	Ala	Thr
225					230					235					240
Arg	Lys	Ile	Asp	Pro	Ile	Thr	Lys	Glu	Phe	Asn	Pro	Ser	Val	Asn	Phe
			245						250					255	
Leu	Gln	Trp	Asn	Lys	Gly	Asp	Gly	Cys	Ile	Tyr	Phe	Ser	Thr	Asn	Asp
			260					265					270		
Glu	Asp	Cys	Arg	Asn	Ile	Tyr	Arg	Tyr	Ser	Pro	Lys	Asp	Arg	Lys	Phe
		275					280					285			
Glu	Lys	Leu	Asn	Leu	Glu	Thr	Asp	Val	Thr	Ser	Ala	Phe	Ala	Met	Ser
		290				295					300				
Glu	Asn	Asn	Pro	Ser	Leu	Ala	Ala	Tyr	Ile	Gly	Gln	Gly	Cys	Tyr	Asn
305					310					315					320
Ala	Gly	Val	Ala	Tyr	Val	Tyr	Asp	Leu	Lys	Lys	Lys	Thr	Ser	Arg	Leu
			325						330					335	
Ile	Ala	Asp	Pro	Met	Lys	Pro	Thr	Leu	Glu	Lys	Ile	Glu	Leu	Gly	Glu
			340					345					350		
Met	Lys	Pro	Trp	Asn	Phe	Thr	Ala	Ser	Asp	Gly	Thr	Glu	Ile	Lys	Gly
		355					360					365			
Met	Met	Cys	Leu	Pro	Pro	Ser	Phe	Asp	Pro	Asn	Lys	Lys	Tyr	Pro	Leu
		370				375					380				
Ile	Val	Tyr	Tyr	Tyr	Gly	Gly	Thr	Thr	Pro	Thr	Glu	Arg	Gly	Ile	Ser
385					390					395					400
Asn	Pro	Tyr	Cys	Ala	Gln	Leu	Phe	Ala	Ser	Arg	Asp	Tyr	Val	Val	Tyr
				405					410					415	

11701 11702 11703 11704 11705 11706 11707 11708 11709 11710 11711 11712 11713 11714 11715 11716 11717 11718 11719 11720 11721 11722 11723 11724 11725 11726 11727 11728 11729 11730 11731 11732 11733 11734 11735 11736 11737 11738 11739 11740 11741 11742 11743 11744 11745 11746 11747 11748 11749 11750 11751 11752 11753 11754 11755 11756 11757 11758 11759 11760 11761 11762 11763 11764 11765 11766 11767 11768 11769 11770 11771 11772 11773 11774 11775 11776 11777 11778 11779 11780 11781 11782 11783 11784 11785 11786 11787 11788 11789 11790 11791 11792 11793 11794 11795 11796 11797 11798 11799 11800 11801 11802 11803 11804 11805 11806 11807 11808 11809 11810 11811 11812 11813 11814 11815 11816 11817 11818 11819 11820 11821 11822 11823 11824 11825 11826 11827 11828 11829 11830 11831 11832 11833 11834 11835 11836 11837 11838 11839 11840 11841 11842 11843 11844 11845 11846 11847 11848 11849 11850 11851 11852 11853 11854 11855 11856 11857 11858 11859 11860 11861 11862 11863 11864 11865 11866 11867 11868 11869 11870 11871 11872 11873 11874 11875 11876 11877 11878 11879 11880 11881 11882 11883 11884 11885 11886 11887 11888 11889 11890 11891 11892 11893 11894 11895 11896 11897 11898 11899 11900 11901 11902 11903 11904 11905 11906 11907 11908 11909 11910 11911 11912 11913 11914 11915 11916 11917 11918 11919 11920 11921 11922 11923 11924 11925 11926 11927 11928 11929 11930 11931 11932 11933 11934 11935 11936 11937 11938 11939 11940 11941 11942 11943 11944 11945 11946 11947 11948 11949 11950 11951 11952 11953 11954 11955 11956 11957 11958 11959 11960 11961 11962 11963 11964 11965 11966 11967 11968 11969 11970 11971 11972 11973 11974 11975 11976 11977 11978 11979 11980 11981 11982 11983 11984 11985 11986 11987 11988 11989 11990 11991 11992 11993 11994 11995 11996 11997 11998 11999 12000

Val Ile Gln Pro Ser Gly Thr Ile Gly Phe Gly Gln Glu Phe Ser Ala
 420 425 430
 Arg His Val Asn Ala Trp Gly Lys Arg Thr Ala Asp Asp Ile Ile Glu
 435 440 445
 Gly Thr Lys Gln Phe Cys Lys Glu His Pro Phe Val Asn Asp Lys Lys
 450 455 460
 Ile Gly Cys Leu Gly Ala Ser Tyr Gly Gly Phe Met Thr Gln Tyr Leu
 465 470 475 480
 Gln Thr Gln Thr Asp Ile Phe Ala Ala Ala Val Ser His Ala Gly Ile
 485 490 495
 Ser Asn Val Thr Ser Tyr Trp Gly Glu Gly Tyr Trp Gly Tyr Gly Tyr
 500 505 510
 Asn Ala Ile Ala Ala Ala Asp Ser Tyr Pro Trp Asn Asn Pro Glu Leu
 515 520 525
 Phe Thr Lys Gln Gly Ser Leu Phe Asn Ala Asp Lys Ile Asn Thr Pro
 530 535 540
 Leu Leu Leu Leu His Gly Thr Val Asp Thr Asn Val Pro Ile Gly Glu
 545 550 555 560
 Ser Ile Gln Leu Phe Asn Ala Leu Lys Ile Leu Gly Lys Thr Val Glu
 565 570 575
 Phe Ile Thr Val Asp Gly Glu Asn His Phe Ile Ala Asp Tyr Pro Lys
 580 585 590
 Arg Val Gln Trp His Asn Ser Ile Met Ala Trp Phe Ala Arg Trp Leu
 595 600 605
 Gln Asp Ser Pro Gln Trp Trp Glu Asp Met Tyr Pro Glu Arg His Leu
 610 615 620

<210> 7505

<211> 276

<212> PRT

<213> B.fragilis

<400> 7505

Lys Asn Cys Trp Met Gly Asp Val Thr Leu Thr Ile Val Ala Glu Lys
 1 5 10 15
 Phe Gln Gln Pro Ala Thr Asp Glu Gly Lys Leu Glu Glu Asn Leu Ser
 20 25 30
 Thr Arg Ile Asn Ser Ile Arg Tyr Leu Tyr Lys Asp Asn Val Leu
 35 40 45
 Ile His Ser Gly Ile Ile Asp Asn Val Thr Asp Leu Asn Thr Asp Ala
 50 55 60
 Tyr Lys Leu Thr Phe Pro Lys Leu Ala Phe Gly Asp Tyr Cys Leu Ala
 65 70 75 80
 Leu Ala Thr Asn Val Ser Glu Glu Glu Leu Pro Asp Thr Thr Thr Pro
 85 90 95
 Glu Ala Leu Asn Leu Asn Tyr Pro Gly Ile Glu Gln Thr Lys Asp Tyr
 100 105 110
 Phe Thr Ser Cys Tyr Asp Phe Thr Val Asp Cys Glu Cys Gly Tyr Gln
 115 120 125
 Asp Phe Val Ile Leu Arg Arg Thr Gln Gly Val Thr Gln Phe Gln Leu
 130 135 140
 Lys Gln Leu Pro Glu Asn Ile Thr Gly Ile Gly Ile Glu Ile His Lys
 145 150 155 160
 Val Ala Ala Thr Cys Gln Ile Asp Thr Leu Tyr Lys Gly Glu Thr Ile
 165 170 175
 Ala Glu Tyr His Thr Thr Val Ala Glu Val Thr Asn Ala Glu Glu Val
 180 185 190
 Ala Asp Phe Ser Ile Gly Thr Phe Pro Thr Ser Gly Pro Glu Asn Ala
 195 200 205

Ser Ile Thr Leu Lys Leu Tyr Ala Asp Asp His Ser Gly Ser Pro Ile
 210 215 220
 Tyr Gln Lys Thr Leu Asn Ile Ser Ile Leu Arg Asn Gln Leu Thr
 225 230 235 240
 Arg Ile Ser Thr Asp Phe Asn His Ser Ile Leu Gly Asn Ser Gly Phe
 245 250 255
 Ser Ile Ala Ile Asn Pro Asp Trp Asp Gly Ile His Asp Asp Asp Glu
 260 265 270
 Thr Ile Ile Pro
 275

<210> 7506
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 <212> PRT
 <213> B.fragilis

<400> 7506
 Met Pro Asn Arg Phe Ser Arg Thr Leu Glu Ser Val Tyr Asp Asp Tyr
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 Ala Ala Ala Thr Met Ala Gly Leu Met Gly Lys Lys Glu Asp Ala Glu
 20 25 30
 Tyr Phe Gly Lys Arg Ser Glu Phe Tyr Lys Asn Leu Phe Asp Lys Glu
 35 40 45
 Thr Gln Phe Met Arg Pro Arg Tyr Ala Asp Gly Arg Trp Lys Thr Pro
 50 55 60
 Phe Asn Pro Ser Asp Leu Ala His Ala Glu Ser Arg Gly Gly Asp Tyr
 65 70 75 80
 Thr Glu Gly Asn Ala Trp Gln Tyr Thr Trp His Val Gln His Asp Val
 85 90 95
 Pro Gly Leu Ile Glu Leu Phe Gly Gly Lys Glu Val Phe Leu Asn Lys
 100 105 110
 Leu Asp Ser Leu Phe Thr Ile Glu Leu Lys Gly Ser Gly Leu Ala Asp
 115 120 125
 Val Thr Gly Leu Ile Gly Gln Tyr Ala His Gly Asn Glu Pro Ser His
 130 135 140
 His Val Thr Phe Leu Tyr Ala Leu Ala Gly Lys Pro Glu Arg Thr Gln
 145 150 155 160
 Glu Leu Ile Arg Glu Ile Phe Asp Thr Gln Tyr Lys Asn Lys Pro Asp
 165 170 175
 Gly Leu Cys Gly Asn Asp Asp Cys Gly Gln Met Ser Ala Trp Tyr Met
 180 185 190
 Phe Asn Ala Met Gly Phe Tyr Pro Val Asp Pro Val Ser Gly His Tyr
 195 200 205
 Val Phe Gly Ala Pro Gln Met Pro Lys Ile Val Leu His Leu Pro Asp
 210 215 220
 Gly Lys Thr Phe Thr Val Ile Ala Glu Asn Leu Ser Lys Glu His Lys
 225 230 235 240
 Tyr Ile Asp Ser Ile Thr Leu Asn Gly Glu Pro Tyr Thr Lys Asn Tyr
 245 250 255
 Ile Ser His Glu Asp Ile Val Lys Gly Gly Thr Leu Val Tyr Lys Met
 260 265 270
 Lys

<210> 7507
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 7507

Lys Lys Lys Leu Leu Ser Glu Thr Glu Ala Ala Phe Leu Leu Ala Thr
 1 5 10 15
 Ala Asp Ile Ala Trp Asn Ala Leu Ser Arg Leu Tyr Asn Cys Val His
 20 25 30
 Ser Tyr Ile Gln Ser Lys Thr Asn Leu Tyr Met Lys Thr His Leu Ile
 35 40 45
 Phe Leu Trp Phe Ile Thr Phe Gly Val Met Ala Cys Thr Ser Gln Pro
 50 55 60
 Gly Ile Asn Thr Gly Glu Asn Lys Val Glu Gly Asp Thr Ile Pro Val
 65 70 75 80
 Leu Asp Phe Ala Ser Ala Ile His Lys Gln Val Pro Asp Thr Phe Met
 85 90 95
 Trp Asn Ser Val Ala Arg Lys Ile Thr Tyr Ile Pro Leu Ala Ser Ser
 100 105 110
 His Leu Met Asp Gly His Pro Val Ile Glu Tyr Leu Asp Asp Met
 115 120 125
 Cys Ile Ile Met Glu Gly Lys Ser Gln Trp Ile Asn Cys Val Asp Tyr
 130 135 140
 Lys Gly Asn Phe Leu Ser Thr Phe Arg His Val Gly Asn Gly Pro Gly
 145 150 155 160
 Glu Tyr Val Asn Leu Ser Ser Val Val Tyr His Ser Lys Asp Ser Thr
 165 170 175
 Ile Arg Ile Phe Asp Asn Gly Ser Tyr Lys His Ile Ile Tyr Asn Lys
 180 185 190
 Gln Gly Lys Phe Leu Arg Glu Ile Ser Leu Ala Asp Ser Glu Phe Asn
 195 200 205
 Tyr Leu Leu His Met Gln Ser Asp Thr Tyr Phe Phe Arg Gly Ser Phe
 210 215 220
 Ser Lys Gly Lys Ser Glu Ile Ile Val Thr Asp Thr Thr Leu Arg Val
 225 230 235 240
 Lys Phe Pro Ile Leu Pro Phe Asp Ser Thr Ala Asp Tyr Ile Thr Arg
 245 250 255
 Gly Ala Ile Met Leu Asn Thr Thr Gly Glu Glu Cys Ala Pro Asp Ile
 260 265 270
 Cys Leu Phe Asn His Ile Tyr Ser Asp Ser Val Phe Leu Leu Thr Pro
 275 280 285
 Asp Gly Leu Lys Leu Asp Phe Ile Leu Arg Lys Gly Lys Tyr Ala Pro
 290 295 300
 Ser Leu Glu Asp Val Lys Gln Phe Met Lys Trp Asn Gln Tyr Asp Pro
 305 310 315 320
 Phe Ile Lys Gly Leu Phe Ile Leu Lys Ser Ala Thr Ile Ile Gln Tyr
 325 330 335
 Thr Ile Lys Gly Arg Phe Met Ser Arg
 340 345

<210> 7508

<211> 389

<212> PRT

<213> B.fragilis

<400> 7508

Lys Ser Ile Arg Ile Phe Leu Pro Asn Pro Met Thr Met Lys Arg Tyr
 1 5 10 15
 Ile Arg Gln Ile Leu Leu Gly Thr Leu Leu Leu Gly Ser Ala Cys Thr
 20 25 30
 Asn His Gln Glu Val Ile Glu Glu Asp Thr Ser Val Ser Val Val Phe
 35 40 45
 Lys Thr Arg Gln Leu Pro Ser Thr Lys Gly Glu Asn Asp Asp Glu Ile

50 55 60
 Ser Val Leu Ile Phe Arg Lys Glu Lys Asp Gln Phe Thr Lys Val Glu
 65 70 75 80
 Ser Ile Gln Glu Ser Pro Trp Leu Phe Glu Gln Glu Gln Leu Gln Lys
 85 90 95
 Asn Ile Leu Leu Pro Thr Gly Ile Tyr Arg Phe Leu Leu Ala Lys Gly
 100 105 110
 Phe Ser Asn Ser Pro Gly Asn Ser Gly Lys Ile Ser Phe Val Thr Asp
 115 120 125
 Asn Asn Pro Gly Asn Leu Val Ser Thr Ser Tyr Asp Arg Asn Tyr Tyr
 130 135 140
 Phe Gln Tyr Pro Thr Arg Thr Leu Asn Gly Gln Thr Glu Leu Asn His
 145 150 155 160
 Cys Thr Thr Ala Leu Phe Thr Asp Lys Asn Glu Glu Ser Ala Gln Asn
 165 170 175
 Ser Gln Thr Glu Tyr Asp Leu Ser Gln Thr Asn Arg Thr Leu Ile Ala
 180 185 190
 Arg Lys Ile Ser His Leu Gln Gly Gln Leu Cys Phe Ile Ile Gln Arg
 195 200 205
 Ala Lys Lys Glu Asn Gly Gln Tyr Thr Leu Ile Asp Ser Pro Glu Asn
 210 215 220
 Ser Phe Asp Asn Ala Leu Lys Lys Ile Ser Ala Ile Asn Leu Thr Ile
 225 230 235 240
 Glu Gly Ser Ser Gln Cys Cys Tyr Leu Ser Glu Thr Gly Leu Ile Phe
 245 250 255
 Lys Ser Pro Met Ser Tyr His Cys Leu Val Gln Leu Gln Asn Gly Asp
 260 265 270
 Tyr Ser Phe Lys Arg Phe Asp Ala Asp Gln Phe Val Ser Leu Phe Ser
 275 280 285
 Pro Ile Ile Glu Lys Thr Asp Tyr Gln Arg Tyr Glu Gly Ala Ala Tyr
 290 295 300
 Cys Glu Gly Pro Leu Leu Phe Pro Ala Pro Leu Asp Gln Thr Ile Arg
 305 310 315 320
 Val Thr Ile Asp Ile Asp Tyr Thr Gly Thr Leu Lys Asn Lys Thr Phe
 325 330 335
 Thr Leu Glu Asn Ile Pro Leu Glu Arg Asn Lys Met Tyr Leu Phe Thr
 340 345 350
 Leu Trp Leu Leu Asn Glu Asp Val Asp Ile Ser Ile Ser Pro Asp Ala
 355 360 365
 Asp Leu Asp Leu Glu Glu Leu Lys Phe Asn Asn Gln Ile Thr Gly Asn
 370 375 380
 Asp Gly Phe Trp Asn
 385

<210> 7509

<211> 506

<212> PRT

<213> B.fragilis

<400> 7509

Phe Ile Ser Arg Tyr Ser Phe Leu Ile Lys Asp Thr Val Ser Gly Gln
 1 5 10 15
 Asn His Leu His Ser His Ile Phe Ile Lys Ile Ile Leu Leu Pro Ile
 20 25 30
 Lys Tyr Glu Lys Ser Leu Phe Ser Ser Leu Tyr Ile Thr Leu Ser His
 35 40 45
 Ile Ala Ser Val Arg Gly Lys Ser Val Ala Tyr Leu Ile Asn Lys Leu
 50 55 60
 Phe Ser Asn Tyr Phe Pro Glu Ala Leu Gln Ala Gln His Ser Tyr Phe

3870

65		70		75		80									
Lys	Leu	Ile	Pro	Thr	Ser	Ser	Glu	Gly	Gly	Asp	Arg	Pro	Arg	Pro	Asp
				85					90					95	
His	Ser	Leu	Lys	Lys	Gln	Gln	Ile	Leu	Asn	Ile	Met	Lys	Ser	Phe	Lys
			100					105					110		
Ile	Met	Leu	Ile	Thr	Val	Leu	Ser	Val	Met	Thr	Leu	Ser	Cys	Ser	Glu
		115					120					125			
Lys	Thr	Thr	Thr	Glu	Ile	Pro	Glu	Thr	Glu	Leu	Lys	Asn	Ile	Ser	Cys
		130					135					140			
Ser	Thr	Gln	Leu	Val	Thr	His	Ser	Ser	Ala	Gln	Thr	Arg	Gly	Ala	Ala
145					150					155					160
Pro	Thr	Thr	Leu	Asn	Glu	Asn	Asp	Phe	Val	Leu	Tyr	Ala	Phe	Lys	Lys
			165					170						175	
Asn	Gly	Glu	Gly	Asn	Phe	Ser	Tyr	Glu	Glu	Ala	Lys	His	Glu	Thr	Ser
		180						185					190		
Val	Ile	Asp	Gly	Gly	Val	Trp	Lys	Tyr	Asn	Ala	Ala	Phe	Pro	Val	Gly
		195					200					205			
Thr	Tyr	Lys	Phe	Ile	Ala	Phe	Tyr	Asn	Leu	Asp	Glu	Lys	Asn	Gln	Ala
		210				215					220				
Ala	Leu	Asn	Thr	Thr	Ile	Thr	Gly	Ile	Ser	Asn	Gln	Thr	Trp	Glu	Asn
225					230					235					240
Ile	Leu	Lys	Ser	Ile	Val	Ile	Thr	His	Phe	Pro	Ser	Ala	Thr	Asp	Gln
				245					250					255	
Tyr	His	Glu	Asp	Met	Asn	Glu	Ile	Phe	Cys	Gly	Lys	Thr	Lys	Asp	Ala
		260						265					270		
Ile	Asp	Ile	Ser	Ser	Gly	Val	Gly	Gly	Asp	Asp	Asn	Glu	Ile	Lys	Ile
		275					280					285			
Lys	Leu	Thr	Leu	Glu	Arg	Ile	Val	Ser	Arg	Ile	Asp	Ile	Lys	Phe	Ile
		290				295					300				
Lys	Val	Ala	Ser	Asp	Asp	Asp	His	Ile	Glu	Val	Pro	Tyr	Ala	Thr	Gly
305					310					315					320
Asn	Ile	Phe	Gly	Gly	Thr	Gly	Thr	Thr	Ser	Leu	Thr	Ser	Leu	Ile	Phe
				325					330					335	
Thr	Ser	Ser	Asn	Val	Pro	Leu	Lys	Tyr	Asn	Leu	Asn	Gly	Glu	Asn	Pro
			340					345					350		
Asp	Tyr	Val	Thr	Gly	Val	Gln	Cys	Gln	Val	Thr	Tyr	Ala	Ala	Pro	Ser
		355					360					365			
Phe	Gln	Tyr	Gly	Glu	Ala	Asn	Ala	Asp	Ala	Val	Lys	Ala	Leu	Asp	Tyr
		370				375					380				
Gln	Pro	Phe	Pro	Lys	Asn	Ala	Asp	Ala	Ile	Asn	Asn	Asn	Met	Glu	Thr
385					390					395					400
Asn	Ile	Lys	Lys	Gly	Ile	Ala	Lys	Gly	Gly	Ala	Tyr	Phe	Met	Gly	Ser
				405					410					415	
Tyr	Leu	Leu	Pro	Phe	Pro	Ser	Ser	Ser	Gln	Thr	Leu	Asn	Ala	Asn	Ile
			420					425					430		
Gln	Leu	Asn	Lys	Ala	Asn	Gln	Glu	Arg	Thr	Ile	Lys	Val	Pro	Gly	Phe
		435					440					445			
Thr	Val	Thr	Ser	Asn	Tyr	Val	Ser	Ile	Ile	Thr	Val	Arg	Leu	Lys	Ser
		450				455					460				
Ser	Thr	Asp	Ala	Gly	Asp	Asn	Asn	Asn	Gly	Asn	Asp	Asp	Glu	His	Leu
465					470					475					480
Phe	Asn	Pro	Lys	Ser	Thr	Phe	Ile	Val	Glu	Ile	Glu	Lys	Thr	Tyr	Asp
				485					490					495	
Gly	Ile	His	Asn	Thr	Asn	Val	Asp	Val	Glu						
			500					505							

<210> 7510

<211> 375

<212> PRT

<213> B.fragilis

<400> 7510

Leu Arg Asn Arg Leu Glu Met Gly Leu Lys Asn Asn Asn Lys Asn Met
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 Met Lys Asn Lys Leu Leu Ser Ile Trp Ile Gly Cys Gly Ser Val Leu
 20 25 30
 Cys Ser Tyr Thr Ser Cys Ser Lys Glu Met Glu Phe Ile Asp Ser Pro
 35 40 45
 Asn Glu Gln Val Thr Ile Gln Leu Thr Thr Thr Ile Asp Gly Gln Gly
 50 55 60
 Phe Ser Thr Asp Asn Glu Ile Ile Pro Met Lys Thr Arg Ser Thr Arg
 65 70 75 80
 Ser Thr Asp Tyr Tyr Val Thr Ala Ile Tyr Asp Ser Arg Leu Val Ile
 85 90 95
 Ile Lys Glu Thr Gly Gln Ser Ala Trp Ser Ile Glu Lys Ile Glu Asp
 100 105 110
 Asn Val Ile Pro Gln Gly Tyr Ile Lys Ser Ser Asp Ala Cys Lys Tyr
 115 120 125
 Thr Met Gln Thr Thr Leu Arg Pro Gly Asn Tyr Lys Phe Met Leu Leu
 130 135 140
 Val Asn Gly Pro Lys Asn Glu Ala Leu His Leu Tyr Gln Asn Phe Ser
 145 150 155 160
 Glu Glu Asp Val Pro Trp Leu Thr Asp Thr Glu Lys Asp Tyr Ser Gly
 165 170 175
 Tyr Glu Ile Phe Phe Ala Thr Ser Gly Ile Val Thr Ile Lys Lys Thr
 180 185 190
 Asp Arg Leu Glu Glu Ser Gly Gln Tyr His Pro Leu Pro Thr Pro Leu
 195 200 205
 Val Leu Lys Arg Tyr Ser Ser Leu Ile Arg Leu Cys Ala Thr Gly Asp
 210 215 220
 Gly Phe Trp Gly Ser Leu Glu Arg Ala Thr Asp Ile Ser Tyr Ser Ile
 225 230 235 240
 Lys Glu Gln Ser Ile Asn Gly Ile Asn Leu Leu Gly Gln Ile Val Ser
 245 250 255
 Lys Asp Thr Glu Leu Ser Phe Gly Thr Leu Thr Ala Ser Ile Arg Lys
 260 265 270
 Asn Phe Glu Cys Gln Leu Gly Asp Lys Lys Leu Phe Phe Ser Tyr Phe
 275 280 285
 Gly Asp Glu Asp Glu Ala Lys Gln Leu Gln Asn Ile Leu Thr Pro Ser
 290 295 300
 Asp Gly Lys Asp Ile Thr Val Thr Ile Phe Gln Lys Glu Lys Gln Thr
 305 310 315 320
 Pro Pro Ile Glu Thr Thr Thr Gln Ala Lys Pro Asn Gln Val Thr Thr
 325 330 335
 Leu Ile Leu Asp Lys Thr Glu Ser Val Leu Asp Trp Asn Gln Pro Pro
 340 345 350
 Ile Ile Gly Thr Pro Ile Asp Trp Asp Pro Asp Asn Ile Pro Trp Gly
 355 360 365
 His Leu Glu Leu Asn Phe Leu
 370 375

<210> 7511

<211> 297

<212> PRT

<213> B.fragilis

<400> 7511

Leu Ile Cys Gly Met Asn Lys Glu Ile Leu Lys Arg Leu Leu Ala Lys

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1           5           10           15
Pro Gly Glu Glu His Ser Val Ser Glu Phe Asp Ala Arg Tyr Thr Gly
      20           25           30
Asp Leu Thr Lys Ser Glu Ala Glu Ala Leu Leu Ala Glu Asn Ile Gly
      35           40           45
Lys Leu Ser Ser Leu Gln Asp Lys Leu Tyr Ala Gln Asp Arg Tyr Ala
      50           55           60
Val Leu Val Ile Phe Gln Ala Met Asp Ala Ala Gly Lys Asp Gly Thr
      65           70           75           80
Ile Lys His Val Met Ser Gly Ile Asn Pro Gln Gly Cys Gln Val Tyr
      85           90           95
Ser Phe Lys Gln Pro Ser Ala Glu Glu Leu Asp His Asp Tyr Leu Trp
      100          105          110
Arg Ile Asn Arg Cys Leu Pro Glu Arg Gly Arg Ile Gly Ile Phe Asn
      115          120          125
Arg Ser His Tyr Glu Asp Val Leu Val Ala Lys Val His Pro Glu Ile
      130          135          140
Val Leu Ser Ala Lys Leu Pro Gly Ile Met Gly Pro Gly Asp Ile Thr
      145          150          155          160
Pro Lys Phe Trp Lys Lys Arg Tyr Arg Gln Ile Asn Asp Tyr Glu Arg
      165          170          175
Tyr Leu Thr Glu Asn Gly Thr Val Ile Ile Lys Phe Phe Leu Asn Val
      180          185          190
Ser Lys Glu Glu Gln Lys Arg Arg Phe Leu Ser Arg Leu Glu Asp Glu
      195          200          205
Ala Lys Asn Trp Lys Phe Ser Val Ser Asp Leu Lys Glu Arg Ser Tyr
      210          215          220
Trp Asp Asp Tyr Met Lys Ala Tyr Ser Asp Met Leu Thr His Thr Ser
      225          230          235          240
Thr Glu Glu Ala Pro Trp Tyr Val Ile Pro Ala Asp Asn Lys Trp Phe
      245          250          255
Met Arg Tyr Ala Val Gly Gln Ile Leu Cys Asp Arg Met Asn Glu Leu
      260          265          270
Asp Leu His Tyr Pro Glu Met Pro Val Glu Ala Arg His Gln Ile Glu
      275          280          285
Asp Phe Lys Arg Ala Leu Leu Asn Glu
      290          295

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<210> 7512

<211> 69

<212> PRT

<213> B.fragilis

<400> 7512

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Ser Leu Phe Ile Tyr Ile Phe Val Asn Ala Asp Gly Gly Asp Arg Val
1           5           10           15
Tyr Ser Lys Asn Ser Asn Thr Asn Gln Tyr Gly Pro Tyr Leu Ile Thr
      20           25           30
Leu Arg Gly Gln Asn Val Phe Ala Tyr Arg Val Val Thr Glu Thr Ser
      35           40           45
Cys Phe Gly Val Arg Val Ile Asn Cys Thr Ser Gly Ile Thr Glu Ser
      50           55           60
Trp Val Pro Val Asp
      65

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<210> 7513

<211> 93

<212> PRT

<213> B.fragilis

<400> 7513

Lys	Val	Thr	Met	Asn	Ile	Lys	Pro	Leu	Ala	Asp	Arg	Val	Leu	Ile	Leu
1				5					10					15	
Pro	Ala	Pro	Ala	Glu	Glu	Lys	Thr	Ile	Gly	Gly	Ile	Ile	Ile	Pro	Asp
			20					25					30		
Thr	Ala	Lys	Glu	Lys	Pro	Leu	Lys	Gly	Glu	Val	Val	Ala	Val	Gly	His
			35				40					45			
Gly	Thr	Lys	Asp	Glu	Glu	Met	Val	Leu	Lys	Ala	Gly	Asp	Thr	Val	Leu
	50					55					60				
Tyr	Gly	Lys	Tyr	Ala	Gly	Thr	Glu	Leu	Glu	Val	Glu	Gly	Lys	Lys	Tyr
65					70					75					80
Leu	Ile	Met	Arg	Gln	Ser	Asp	Val	Leu	Ala	Val	Leu	Gly			
				85					90						

<210> 7514

<211> 422

<212> PRT

<213> B.fragilis

<400> 7514

Ile	Lys	Leu	Ile	Ser	Asn	Lys	Lys	His	Met	Lys	Thr	Ile	Thr	Leu	Ile
1				5					10					15	
Ile	Thr	Leu	Leu	Cys	Leu	Ser	Leu	Ser	Gly	Ile	Ala	Gln	Asn	Asn	Ala
			20					25					30		
Lys	Lys	Glu	Phe	Glu	Lys	Lys	Tyr	Gly	Ala	Leu	Val	Lys	Glu	Ile	Met
			35				40					45			
Asn	Val	Arg	Glu	Gln	Lys	Asp	Tyr	Lys	Lys	Ala	Glu	Lys	Leu	Asn	Trp
	50					55					60				
Glu	Ile	Leu	Lys	Leu	Tyr	Asp	Ala	Leu	Pro	Gln	Thr	Leu	Gln	Glu	Arg
65					70					75					80
Ala	Arg	Gln	Ile	Ala	Gly	Leu	Thr	Tyr	Tyr	Asp	Leu	Ala	Cys	Tyr	Gln
				85				90					95		
Ser	Leu	Gln	Gly	Lys	Lys	Lys	Ala	Ala	Leu	Asn	Asn	Leu	Glu	Lys	Ala
			100				105						110		
Phe	Ala	Asn	Gly	Trp	Ser	Asn	Tyr	Asn	His	Ala	Lys	Ser	Asp	Ser	Asp
		115					120					125			
Leu	Asp	Asn	Leu	Arg	Lys	Glu	Lys	Arg	Tyr	Leu	Glu	Val	Leu	Ser	Lys
	130					135					140				
Met	Arg	Leu	Asp	Ser	Asp	Tyr	Leu	Tyr	Ile	Leu	Gln	Gln	Ala	Asn	Gly
145					150					155					160
Tyr	Asn	Arg	Thr	Glu	Thr	Lys	Pro	Val	Cys	His	Asn	Glu	Ser	Leu	Thr
				165					170					175	
Asp	Thr	Leu	Pro	Arg	Phe	Thr	Tyr	Met	Asn	Pro	Asn	Asp	Ser	Asn	Leu
			180					185					190		
Val	Tyr	Leu	Arg	Lys	His	Phe	Asn	Leu	Asp	Ser	Ile	Ala	Gly	Ser	Gly
		195					200					205			
Asp	Glu	Ile	Ser	Lys	Ile	Lys	Asn	Leu	Leu	Tyr	Trp	Val	His	Asn	Ile
	210					215					220				
Val	Pro	His	Asp	Gly	Asn	Ser	Arg	Asn	Pro	Glu	Glu	Gln	Asn	Thr	Ile
225					230					235					240
Ala	Met	Val	Glu	Leu	Cys	Gln	Lys	Glu	Lys	Arg	Gly	Val	Asn	Cys	Arg
				245					250					255	
Met	Met	Ala	Gln	Met	Leu	Asn	Glu	Cys	Tyr	Leu	Ala	Met	Gly	Phe	Lys
			260					265					270		
Ser	Arg	Tyr	Ile	Thr	Cys	Met	Pro	Lys	Val	Met	Ile	Asn	Asp	Cys	His
		275					280					285			
Val	Ile	Asn	Ala	Val	Tyr	Ser	Asn	Thr	Leu	Asp	Lys	Trp	Leu	Trp	Met
	290					295					300				

Asp Pro Thr Phe Asn Ala Tyr Val Thr Asp Glu Lys Gly Asn Leu Leu
 305 310 315 320
 Gly Ile Gly Glu Val Arg Glu Arg Leu Arg Lys Asn Glu Pro Ile Val
 325 330 335
 Leu Asn Glu Asp Ala Asn Trp Asn Asn Lys Asn Lys Gln Thr Lys Glu
 340 345 350
 Tyr Tyr Leu Asp Tyr Tyr Met Ala Lys Asn Leu Tyr Tyr Val Thr Cys
 355 360 365
 Pro Leu Arg Ser Glu Tyr Asn Ala Glu Thr Asn Tyr Pro Gly Lys Lys
 370 375 380
 Trp Ser Met His Ile Ser Leu Val Pro Glu Gly Tyr Ser Thr Asn Gly
 385 390 395 400
 Lys Ser Gly Ala Thr Pro Tyr Asp Ser His Asn Asp Leu Tyr Phe Trp
 405 410 415
 Gln Ser Pro Tyr Gln Glu
 420

<210> 7515

<211> 300

<212> PRT

<213> B.fragilis

<400> 7515

Tyr Phe Ile Ile Phe Ala Phe Asn Ile Leu Phe Met Asn Arg Lys Thr
 1 5 10 15
 Ile Met Ile Pro Phe Arg Glu Arg Glu Gly Val Arg Arg Lys Phe Leu
 20 25 30
 Phe Leu Leu Phe Ser Cys Leu Leu Ser Val Ser Leu Ser Ala Gln Thr
 35 40 45
 Tyr Gln Glu Leu Ser Glu Lys Ala Val Glu Cys Val Gly Lys Asp Ser
 50 55 60
 Leu Val Gln Ala Glu Asp Leu Leu Lys Gln Ala Leu Lys Leu Glu Pro
 65 70 75 80
 Lys Asn Ala His Asn Ala Leu Leu Phe Ser Asn Leu Gly Leu Val Gln
 85 90 95
 Arg Lys Leu Gly Arg Tyr Asn Asp Ala Val Glu Ser Tyr Thr Tyr Ala
 100 105 110
 Leu Asn Ile Ala Pro Leu Ala Val Pro Ile Leu Leu Asn Arg Ala Ala
 115 120 125
 Ile Tyr Leu Glu Gln Gly Met Gln Asp Lys Ala Tyr Val Asp Tyr Cys
 130 135 140
 Gln Val Met Asp Val Asp Lys Lys Asn Thr Glu Ala Leu Leu Met Arg
 145 150 155 160
 Ala Tyr Ile Tyr Met Leu Arg Arg Asp Tyr Lys Gly Ala Arg Leu Asp
 165 170 175
 Tyr Gln Arg Leu Leu Glu Ile Asp Pro Lys Asn Tyr Asn Gly Arg Leu
 180 185 190
 Gly Leu Ala Thr Leu Glu Gln Lys Glu Asn Lys Phe Arg Glu Ala Leu
 195 200 205
 Asp Ile Leu Asn Gln Leu Leu Val Glu Phe Pro Glu Asp Ala Val Leu
 210 215 220
 Tyr Val Ala Arg Ala Asp Val Glu Trp Asp Met Lys His Asp Asp Leu
 225 230 235 240
 Ala Leu Val Asp Leu Asp Glu Ala Ile Arg Leu Ala Pro Asp Ser Ile
 245 250 255
 Asp Ala Tyr Leu Leu Arg Gly Asp Ile Tyr Leu Asp Gln Lys Lys Lys
 260 265 270
 Ser Leu Ala Lys Ala Asp Phe Glu Lys Ala Ile Ser Leu Gly Val Pro
 275 280 285

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<210> 7516
<211> 386
<212> PRT
<213> B.fragilis
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[illegible]

<210> 7517
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 7517

Lys	Arg	Lys	Met	Lys	Val	Asp	Val	Leu	Leu	Gly	Leu	Gln	Trp	Gly	Asp	1	5	10	15
Glu	Gly	Lys	Gly	Lys	Val	Val	Asp	Val	Leu	Thr	Pro	Lys	Tyr	Asp	Val	20	25	30	
Val	Ala	Arg	Phe	Gln	Gly	Gly	Pro	Asn	Ala	Gly	His	Thr	Leu	Glu	Phe	35	40	45	
Glu	Gly	Gln	Lys	Tyr	Val	Leu	Arg	Ser	Ile	Pro	Ser	Gly	Ile	Phe	Gln	50	55	60	
Gly	Asp	Lys	Val	Asn	Ile	Ile	Gly	Asn	Gly	Val	Val	Leu	Asp	Pro	Ala	65	70	75	80
Leu	Phe	Lys	Ala	Glu	Ala	Glu	Ala	Leu	Glu	Ala	Ser	Gly	His	Asn	Leu	85	90	95	
Lys	Glu	Arg	Leu	His	Ile	Ser	Lys	Lys	Ala	His	Leu	Ile	Leu	Pro	Thr	100	105	110	
His	Arg	Ile	Leu	Asp	Ala	Ala	Tyr	Glu	Ala	Ala	Lys	Gly	Asp	Ala	Lys	115	120	125	
Val	Gly	Thr	Thr	Gly	Lys	Gly	Ile	Gly	Pro	Thr	Tyr	Thr	Asp	Lys	Val	130	135	140	
Ser	Arg	Asn	Gly	Val	Arg	Val	Gly	Asp	Ile	Leu	His	Asn	Phe	Glu	Gln	145	150	155	160
Lys	Tyr	Ala	Ala	Ala	Lys	Ala	Arg	His	Glu	Gln	Ile	Leu	Lys	Gly	Leu	165	170	175	
Asn	Tyr	Glu	Tyr	Asp	Leu	Thr	Glu	Leu	Glu	Lys	Ala	Trp	Phe	Glu	Gly	180	185	190	
Ile	Glu	Tyr	Leu	Lys	Gln	Phe	Gln	Leu	Val	Asp	Ser	Glu	His	Glu	Ile	195	200	205	
Asn	Gly	Leu	Leu	Asp	Asn	Gly	Lys	Ser	Ile	Leu	Cys	Glu	Gly	Ala	Gln	210	215	220	
Gly	Thr	Met	Leu	Asp	Ile	Asp	Phe	Gly	Ser	Tyr	Pro	Phe	Val	Thr	Ser	225	230	235	240
Ser	Asn	Thr	Val	Cys	Ala	Gly	Ala	Cys	Thr	Gly	Leu	Gly	Val	Ala	Pro	245	250	255	
Asn	Lys	Ile	Gly	Asp	Val	Tyr	Gly	Ile	Phe	Lys	Ala	Tyr	Cys	Thr	Arg	260	265	270	
Val	Gly	Ser	Gly	Pro	Phe	Pro	Thr	Glu	Leu	Phe	Asp	Lys	Thr	Gly	Asp	275	280	285	
Gln	Ile	Cys	Thr	Leu	Gly	His	Glu	Phe	Gly	Ser	Val	Thr	Gly	Arg	Lys	290	295	300	
Arg	Arg	Cys	Gly	Trp	Val	Asp	Leu	Val	Ala	Leu	Lys	Tyr	Ser	Ile	Met	305	310	315	320
Val	Asn	Gly	Val	Thr	Lys	Leu	Ile	Met	Met	Lys	Ser	Asp	Val	Leu	Asp	325	330	335	
Thr	Phe	Glu	Thr	Ile	Lys	Ala	Cys	Val	Ala	Tyr	Lys	Met	Asn	Gly	Glu	340	345	350	
Glu	Ile	Asp	Tyr	Phe	Pro	Tyr	Asp	Ile	Thr	Asp	Glu	Val	Glu	Pro	Ile	355	360	365	
Tyr	Val	Glu	Leu	Pro	Gly	Trp	Gln	Thr	Asp	Met	Thr	Lys	Met	Gln	Ser	370	375	380	
Glu	Asp	Glu	Phe	Pro	Glu	Glu	Phe	Asn	Ala	Tyr	Leu	Ser	Phe	Leu	Glu	385	390	395	400
Glu	Gln	Leu	Gly	Val	Gln	Ile	Lys	Ile	Val	Ser	Val	Gly	Pro	Asp	Arg	405	410	415	

Glu Gln Thr Ile Ile Arg Tyr Thr Glu Glu
420 425

<210> 7518

<211> 457

<212> PRT

<213> B.fragilis

<400> 7518

Asn	Glu	Ala	Phe	Leu	Pro	Pro	Ser	Leu	Ser	Gly	Glu	Ala	Arg	Ser	Glu	1	5	10	15
Ala	Phe	Leu	Phe	Ile	Ile	Leu	Met	Lys	Lys	His	Phe	Ile	Thr	Phe	Leu	20	25	30	
Leu	Leu	Val	Gly	Met	Thr	Ala	Ser	Leu	Thr	Ala	Gln	Gln	Lys	Tyr	Gln	35	40	45	
Pro	Thr	Glu	Ala	Asn	Leu	Lys	Ala	Arg	Ser	Glu	Phe	Gln	Asp	Asn	Lys	50	55	60	
Phe	Gly	Ile	Phe	Leu	His	Trp	Gly	Leu	Tyr	Ala	Met	Leu	Ala	Thr	Gly	65	70	75	80
Glu	Trp	Thr	Met	Thr	Asn	Asn	Asn	Leu	Asn	Tyr	Lys	Glu	Tyr	Ala	Lys	85	90	95	
Leu	Ala	Gly	Gly	Phe	Tyr	Pro	Ser	Lys	Phe	Asp	Ala	Asp	Lys	Trp	Val	100	105	110	
Ala	Ala	Ile	Lys	Ala	Ser	Gly	Ala	Lys	Tyr	Ile	Cys	Phe	Thr	Thr	Arg	115	120	125	
His	His	Glu	Gly	Phe	Ser	Met	Phe	Asp	Thr	Lys	Tyr	Ser	Asp	Tyr	Asn	130	135	140	
Ile	Val	Lys	Ala	Thr	Pro	Phe	Lys	Arg	Asp	Val	Val	Lys	Glu	Leu	Ala	145	150	155	160
Asp	Ala	Cys	Ala	Lys	His	Gly	Ile	Lys	Leu	His	Phe	Tyr	Tyr	Ser	His	165	170	175	
Ile	Asp	Trp	Tyr	Arg	Glu	Asp	Ala	Pro	Gln	Gly	Arg	Thr	Gly	Arg	Arg	180	185	190	
Thr	Gly	Arg	Pro	Asn	Pro	Lys	Gly	Asp	Trp	Lys	Ser	Tyr	Tyr	Gln	Phe	195	200	205	
Met	Asn	Asn	Gln	Leu	Thr	Glu	Leu	Leu	Thr	Asn	Tyr	Gly	Pro	Ile	Gly	210	215	220	
Ala	Ile	Trp	Phe	Asp	Gly	Trp	Trp	Asp	Gln	Asp	Ile	Asn	Pro	Asp	Phe	225	230	235	240
Asp	Trp	Glu	Leu	Pro	Glu	Gln	Tyr	Ala	Leu	Ile	His	Arg	Leu	Gln	Pro	245	250	255	
Ala	Cys	Leu	Val	Gly	Asn	Asn	His	His	Gln	Thr	Pro	Phe	Ala	Gly	Glu	260	265	270	
Asp	Ile	Gln	Ile	Phe	Glu	Arg	Asp	Leu	Pro	Gly	Glu	Asn	Thr	Ala	Gly	275	280	285	
Leu	Ser	Gly	Gln	Ser	Val	Ser	His	Leu	Pro	Leu	Glu	Thr	Cys	Glu	Thr	290	295	300	
Met	Asn	Gly	Met	Trp	Gly	Tyr	Lys	Ile	Thr	Asp	Gln	Asn	Tyr	Lys	Ser	305	310	315	320
Thr	Lys	Thr	Leu	Ile	His	Tyr	Leu	Val	Lys	Ala	Ala	Gly	Lys	Asp	Ala	325	330	335	
Asn	Leu	Leu	Met	Asn	Ile	Gly	Pro	Gln	Pro	Asp	Gly	Glu	Leu	Pro	Glu	340	345	350	
Val	Ala	Val	Gln	Arg	Leu	Lys	Glu	Val	Gly	Glu	Trp	Met	Ser	Lys	Tyr	355	360	365	
Gly	Glu	Thr	Ile	Tyr	Gly	Thr	Arg	Gly	Gly	Leu	Val	Ala	Pro	His	Asp	370	375	380	
Trp	Gly	Val	Thr	Thr	Gln	Lys	Gly	Asn	Lys	Leu	Tyr	Val	His	Ile	Leu	385	390	395	400

3877 3878 3879 3880 3881 3882 3883 3884 3885 3886 3887 3888 3889 3890 3891 3892 3893 3894 3895 3896 3897 3898 3899 3900 3901 3902 3903 3904 3905 3906 3907 3908 3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 3997 3998 3999 4000

Asn Leu Gln Asp Lys Ala Leu Phe Leu Pro Ile Val Asp Lys Lys Val
 405 410 415
 Lys Lys Ala Val Val Phe Ala Asp Lys Thr Pro Val Arg Phe Thr Lys
 420 425 430
 Asn Lys Glu Gly Ile Val Leu Glu Leu Ala Lys Val Pro Thr Asp Val
 435 440 445
 Asp Tyr Val Val Glu Leu Thr Ile Asp
 450 455

<210> 7519
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 7519
 Lys Glu Arg Ile Arg Asn Gly Tyr Lys Arg Val Lys Thr Lys Thr Ala
 1 5 10 15
 Phe His Ser Asn Gln Asp Val Thr Gly Cys Tyr Gly Ser Cys Ser Val
 20 25 30
 Gly Leu Tyr Cys Phe Phe Tyr Gly Leu Phe Ile Gln Lys Ile Ser Arg
 35 40 45
 Lys Tyr Phe Asn Tyr Arg Met Gly Lys Arg Leu Glu Lys Glu Asp Val
 50 55 60
 Arg Ile Ile Asn
 65

<210> 7520
 <211> 504
 <212> PRT
 <213> B.fragilis

<400> 7520
 Gly Phe Arg Leu Asp Ala Thr Pro Leu Phe Tyr Leu Phe Ser Ser Pro
 1 5 10 15
 Lys Asp Ala Met Ala Ser Val Ser Ile Trp Val Val Met Ala Gly Leu
 20 25 30
 Ala Ala Met Ala Val Tyr Ala Ala Leu Leu Tyr Leu Ile Phe Tyr Arg
 35 40 45
 Val Leu Ile Tyr Gln Lys Gln Pro Val Lys Ile Pro Phe His Arg Leu
 50 55 60
 Ser Val Ser Gly Val Leu Leu Leu Ala Thr Ala Leu Leu Phe Ile Pro
 65 70 75 80
 Ile Arg Gly Gly Phe Thr Val Ser Thr Met Asn Leu Ser Lys Ala Tyr
 85 90 95
 Phe Ser Ser Asn Gln Arg Leu Asn His Ala Ala Ile Asn Pro Cys Phe
 100 105 110
 Ser Leu Met Glu Ser Leu Ser Arg Gln Asp Asn Phe Asp Lys Gln Tyr
 115 120 125
 Arg Phe Met Pro Ala Glu Glu Ala Asp Lys Leu Phe Ala Glu Leu Lys
 130 135 140
 Asp Gln Pro Val Ala Pro Thr Asp Ser Ile Pro Gln Leu Phe Thr Thr
 145 150 155 160
 Glu His Pro Asn Val Ile Leu Ile Ile Leu Glu Ser Phe Ser Ser Lys
 165 170 175
 Leu Met Glu Thr Leu Gly Gly Glu Ser Asn Val Ala Ile Asn Met Asp
 180 185 190
 Gln Phe Gly Arg Glu Gly Val Leu Phe Thr His Phe Phe Ala Asn Ser
 195 200 205
 Phe Arg Thr Asp Arg Gly Leu Ala Ala Ile Ile Ser Gly Tyr Pro Ala

210		215		220
Gln Pro Thr Thr Ser Ile Met Lys Tyr Pro Lys Lys Thr Gln His Leu				
225		230		235
Pro Ser Ile Pro Gly Ser Leu Lys Lys Ala Gly Tyr Asp Leu Gln Tyr				
	245		250	255
Tyr Tyr Gly Gly Asp Ala Asp Phe Thr Asn Met Arg Ser Tyr Leu Ile				
	260		265	270
Gln Ala Gly Ile Asp Asn Ile Val Ser Asp Lys Asp Phe Pro Leu Ser				
	275		280	285
Glu Arg Leu Ser Lys Trp Gly Ala His Asp His Val Val Phe Asn Arg				
	290		295	300
Leu Leu Asp Asp Leu Lys Gln His Thr Pro Gln Lys Pro Phe Met Lys				
305		310		315
Ile Leu Gln Thr Ser Ser Ser His Glu Pro Phe Glu Val Pro Phe Arg				
	325		330	335
Arg Leu Glu Asn Pro Arg Leu Asn Ala Phe Ala Tyr Ala Asp Ser Cys				
	340		345	350
Ala Gly Asp Phe Val Arg Gln Phe Lys Glu Thr Pro Leu Trp Lys Asn				
	355		360	365
Thr Val Ile Val Leu Val Pro Asp His Leu Gly Ala Tyr Pro Gln Asp				
	370		375	380
Ile Asp Asn Leu Thr Val Asp Arg Tyr Arg Ile Pro Leu Ile Phe Ile				
385		390		395
Gly Gly Ala Val Lys Glu Pro Arg Gln Ile Gly Thr Tyr Gly Ser Gln				
	405		410	415
Ile Asp Ile Ala Ala Thr Leu Leu Gly Gln Leu Gly Leu Pro His Glu				
	420		425	430
Glu Phe Ile Phe Ser Lys Asn Met Leu Asn Pro Asn Ser Pro His Phe				
	435		440	445
Gly Phe Phe Thr Phe Pro Asn Ala Phe Gly Met Met Thr Pro Glu Asn				
	450		455	460
Glu Val Val Phe Asn Cys Glu Ser Asn Ser Ile Val Ser Asp Glu Gly				
465		470		475
Thr His Lys Gly Glu Asn Leu Pro Lys Ala Lys Ala Tyr Leu Gln Lys				
	485		490	495
Leu Tyr Asp Asp Leu Ala Lys Arg				
	500			

<210> 7521

<211> 221

<212> PRT

<213> B.fragilis

<400> 7521

Leu Met Asp Val Lys Glu Gln Leu Lys Asp Ile Lys Thr Gln Leu Arg				
1	5	10	15	
Leu Ser Met Asn Gly Val Val Ser Gln Ser Met Arg Glu Lys Gly Leu				
	20	25	30	
Asp Tyr Lys Leu Asn Phe Gly Val Glu Leu Pro Arg Ile Lys Ser Ile				
	35	40	45	
Ala Ala Ala Tyr Glu Lys Ser His Asp Leu Ala Gln Ala Leu Trp Lys				
	50	55	60	
Glu Asn Ile Arg Glu Cys Lys Ile Leu Ala Gly Leu Leu Gln Pro Ile				
65	70	75	80	
Asp Thr Phe Phe Pro Glu Ile Ala Asp Ile Trp Val Glu Asp Ile Arg				
	85	90	95	
Asn Ile Glu Ile Ala Glu Leu Thr Cys Met Asn Leu Phe Gln Asn Leu				
	100	105	110	
Pro Tyr Ala Pro Ala Lys Thr Phe Gln Trp Ile Ala Asp Glu Ala Glu				

305 310 315 320
 Leu Ile Gln Pro Asn Asn Ile Ala Asp Val Asp Gly Arg Tyr Arg Asn
 325 330 335
 Ala Lys Asp Ser Ile Val Lys Ser Ser Ser Gly Val Tyr Tyr Ser Thr
 340 345 350
 Phe Ser Ile Trp Asp Thr Tyr Arg Ala Ala His Pro Phe Tyr Thr Leu
 355 360 365
 Ala Val Pro Glu Arg Val Asp Gly Phe Ile Asn Ser Met Ile Glu Gln
 370 375 380
 Asn Gln Ala Gln Gly Tyr Leu Pro Val Trp Thr Leu Trp Gly Lys Glu
 385 390 395 400
 Thr Asn Thr Met Ile Gly Asn His Ser Val Ser Val Ile Ala Glu Ala
 405 410 415
 Tyr Lys Lys Gly Phe Arg Gly Phe Asp Ala Glu Lys Ala Phe Asp Ala
 420 425 430
 Ile Lys Gln Thr Leu Thr Val Ser His Pro Lys Ser Asp Trp Glu Thr
 435 440 445
 Tyr Met Lys Tyr Gly Tyr Tyr Pro Thr Asp Lys Val Asp Ala Glu Ser
 450 455 460
 Val Phe Thr Tyr Pro Arg Ile Gly Leu Arg
 465 470

<210> 7523

<211> 713

<212> PRT

<213> B.fragilis

<400> 7523

Asn Met Ile Phe Glu Thr Tyr Phe Lys His Val Tyr Leu Tyr Val Ala
 1 5 10 15
 Cys Leu Tyr Ala Thr Ser Gly Thr Gly Leu Tyr Ala Gln Thr Leu His
 20 25 30
 Gln His Ala Gly Thr Gln Arg Asp Thr Val Pro Val Thr Phe Pro Val
 35 40 45
 Gln His Leu Glu Glu Val Val Ile Thr Ala Gly Arg Pro Gly Ile Thr
 50 55 60
 Ala Gly Ala Val Ser Asn Arg Ile Ser Ser Ser Glu Ile His Arg Val
 65 70 75 80
 Ala Gly Ser Ser Leu Ala Thr Leu Leu Glu Arg Ile Ser Gly Val Ser
 85 90 95
 Ser Leu Ser Thr Gly Thr Thr Val Ser Lys Pro Val Ile His Gly Met
 100 105 110
 His Gly Asn Arg Ile Leu Ile Ile Asn Asn Gly Ala Arg Gln Thr Gly
 115 120 125
 Gln Gln Trp Ala Thr Asp His Ala Pro Glu Val Asp Ile Asn Glu Ser
 130 135 140
 Gly Asn Ile Leu Val Ile Lys Gly Ala Asp Gly Val Arg Tyr Gly Ser
 145 150 155 160
 Asp Ala Leu Gly Gly Ile Ile Val Met Glu Gln Pro Pro Leu Ala Phe
 165 170 175
 Gly Gln Glu His Pro Lys Gly Arg Ile Ala Thr Phe Tyr Gly Ser Asn
 180 185 190
 Gly His Arg Tyr Ala Ala Thr Gly Ser Leu Glu Gly Thr Leu Pro Phe
 195 200 205
 Leu Arg Asn Ile Ala Trp Arg Met Gln Gly Thr Tyr Ser Asn Ser Gly
 210 215 220
 Asp Arg Ser Thr Ala His Tyr Leu Leu Asn Asn Thr Gly Thr Arg Gly
 225 230 235 240
 Leu His Phe Ser Ala Ser Ala Gly Tyr Asp Ser Gly Arg Leu Arg Ile

<210> 7524
 <211> 471
 <212> PRT
 <213> B.fragilis

<400> 7524

Ser	Ile	Ile	Ser	Tyr	Asn	Phe	Ala	Thr	Gln	Phe	Asn	Lys	Thr	Val	Arg
1			5						10					15	
Thr	Met	Ala	Ala	Lys	Pro	Gly	Ile	Pro	Lys	Gly	Thr	Arg	Asp	Phe	Ser
			20					25					30		
Pro	Val	Glu	Met	Ala	Lys	Arg	Asn	Tyr	Ile	Phe	Asn	Thr	Ile	Arg	Asp
		35				40						45			
Val	Tyr	His	Leu	Tyr	Gly	Phe	Gln	Gln	Ile	Glu	Thr	Pro	Ser	Met	Glu
	50				55						60				
Met	Leu	Ser	Thr	Leu	Met	Gly	Lys	Tyr	Gly	Glu	Glu	Gly	Asp	Lys	Leu
65					70					75					80
Leu	Phe	Lys	Ile	Gln	Asn	Ser	Gly	Asp	Tyr	Phe	Ser	Gly	Ile	Thr	Asp
			85					90						95	
Glu	Glu	Leu	Leu	Ser	Arg	Asn	Ala	Ala	Lys	Leu	Ala	Ser	Lys	Phe	Cys
			100					105					110		
Glu	Lys	Gly	Leu	Arg	Tyr	Asp	Leu	Thr	Val	Pro	Phe	Ala	Arg	Tyr	Val
		115					120						125		
Val	Met	His	Arg	Asp	Glu	Ile	Thr	Phe	Pro	Phe	Lys	Arg	Tyr	Gln	Ile
	130					135						140			
Gln	Pro	Val	Trp	Arg	Ala	Asp	Arg	Pro	Gln	Lys	Gly	Arg	Tyr	Arg	Glu
145					150					155					160
Phe	Tyr	Gln	Cys	Asp	Ala	Asp	Val	Val	Gly	Ser	Asp	Ser	Leu	Leu	Asn
			165						170					175	
Glu	Val	Glu	Leu	Met	Gln	Ile	Val	Asp	Thr	Val	Phe	Thr	Arg	Phe	Gly
			180					185					190		
Ile	Arg	Val	Cys	Ile	Lys	Ile	Asn	Asn	Arg	Lys	Ile	Leu	Thr	Gly	Ile
		195					200					205			
Ala	Glu	Ile	Ile	Gly	Glu	Ala	Asp	Lys	Ile	Val	Asp	Ile	Thr	Val	Ala
	210					215					220				
Ile	Asp	Lys	Leu	Asp	Lys	Ile	Gly	Leu	Asp	Asn	Val	Asn	Lys	Glu	Leu
225					230					235					240
Ala	Glu	Lys	Gly	Ile	Ser	Glu	Glu	Ala	Ile	Ala	Lys	Leu	Gln	Pro	Ile
			245						250					255	
Ile	Leu	Leu	Ser	Gly	Thr	Asn	Ala	Glu	Lys	Leu	Ala	Thr	Leu	Lys	Thr
			260					265					270		
Val	Leu	Ser	Asp	Ser	Glu	Thr	Gly	Leu	Lys	Gly	Val	Glu	Glu	Ser	Glu
		275					280					285			
Phe	Ile	Leu	Asn	Thr	Leu	Gln	Thr	Met	Gly	Leu	Lys	Asn	Glu	Ile	Glu
	290					295					300				
Leu	Asp	Leu	Thr	Leu	Ala	Arg	Gly	Leu	Asn	Tyr	Tyr	Thr	Gly	Ala	Ile
305					310					315					320
Phe	Glu	Val	Lys	Ala	Leu	Asp	Val	Gln	Ile	Gly	Ser	Ile	Thr	Gly	Gly
			325						330					335	
Gly	Arg	Tyr	Asp	Asn	Leu	Thr	Gly	Val	Phe	Gly	Met	Ala	Gly	Val	Ser
		340					345						350		
Gly	Val	Gly	Ile	Ser	Phe	Gly	Ala	Asp	Arg	Ile	Phe	Asp	Val	Leu	Asn
	355					360						365			
Gln	Leu	Glu	Leu	Tyr	Pro	Lys	Glu	Ala	Val	Asn	Gly	Thr	Gln	Leu	Leu
	370					375					380				
Phe	Ile	Asn	Phe	Gly	Glu	Lys	Glu	Ala	Ala	Phe	Ser	Met	Gly	Ile	Leu
385					390					395					400
Ser	Lys	Ala	Arg	Ala	Val	Gly	Ile	Arg	Ala	Glu	Ile	Phe	Pro	Asp	Ala
			405						410					415	

Ala Lys Met Lys Lys Gln Met Ser Tyr Ala Asn Val Lys Asn Ile Pro
 420 425 430
 Phe Val Ala Ile Val Gly Glu Asn Glu Met Asn Glu Gly Lys Ala Met
 435 440 445
 Leu Lys Asn Met Glu Ser Gly Glu Gln Gln Leu Val Thr Ala Glu Glu
 450 455 460
 Leu Ile Gly Ala Leu Thr Lys
 465 470

<210> 7525
 <211> 359
 <212> PRT
 <213> B.fragilis

<400> 7525
 Thr Gly Thr Ser Asp Tyr Asp Phe Tyr Ser Leu Tyr Asn Ile Asn Lys
 1 5 10 15
 Pro Ile Glu Arg Lys Met Lys Thr Ile Thr Ser Lys Thr Ile Leu Met
 20 25 30
 Leu Leu Thr Gly Ala Phe Leu Val Leu Leu Phe Asn Ser Cys Thr Lys
 35 40 45
 Asp Pro Val Ile Pro Glu Asp Glu Thr Lys Asn Lys Leu His Glu Asp
 50 55 60
 Pro Ala Lys Val Thr Val Arg Leu Val Glu Cys His Leu His Ala Asp
 65 70 75 80
 Trp Asn Glu Ile Gln Thr Asn Gly Gly Pro His Gln Asn Pro Glu Ser
 85 90 95
 Pro Ala Arg His Ile Lys Arg Ile Gln Asp Ile Thr Tyr Glu Leu Lys
 100 105 110
 Ala Gly Gln Gly Trp Thr Leu Ala Glu Gly Ser Gln Lys Lys Phe Tyr
 115 120 125
 Val Gln Lys Asn Gly Glu Tyr Lys Asn Gln Gly Arg Phe Thr Pro Ala
 130 135 140
 Pro Val Tyr Leu Met Phe Ile Tyr Tyr Tyr Asn Ala Lys Gly Glu Leu
 145 150 155 160
 Met Asn Asn Gln Phe Val Glu Asn Gly Gln Glu Asn Ile His Gln His
 165 170 175
 Phe Phe Thr Pro Glu Asn Ile Lys Pro Thr Phe Asp Gly Gln Ile Glu
 180 185 190
 Ala Asp Asp Asn Asp Pro Gln Lys Leu Ile Asp Tyr Leu Tyr Val Asp
 195 200 205
 Thr Thr Pro Trp Asp Lys Thr Tyr His Ser Gly Glu Ala Glu Ile Thr
 210 215 220
 Gly Arg Asp Asn Pro Val Gly Leu Lys Gly Ile Ile Arg Phe Leu Lys
 225 230 235 240
 Asp Arg Lys Glu Phe Asp Leu Lys Val Arg Leu Tyr His Gly Tyr Glu
 245 250 255
 Ser Lys Lys Asn Pro Gln Thr Gly Thr Phe Asp Pro Phe Tyr Lys Pro
 260 265 270
 Ser Gly Val Leu Ile Gln Arg Gly Thr Trp Asp Ile Asn Leu Asn Leu
 275 280 285
 Pro Val Val Val Phe Trp Ser Arg Glu Glu Phe Ile Asp Ile Asp Glu
 290 295 300
 Glu Ala Asn Leu Glu Lys Val Gly Glu Asp Ser Leu Asp Glu Gly Ser
 305 310 315 320
 Asn Arg Thr Val His Ser Ile Met Glu Thr Phe Asn Leu Thr Trp Lys
 325 330 335
 Glu Ala Leu Glu Glu Phe Ile Thr Tyr Thr Tyr Lys Ala Gly Asp Ala
 340 345 350

Glu Gly Gly Ala Ile Trp Leu
355

<210> 7526

<211> 158

<212> PRT

<213> B.fragilis

<400> 7526

Pro	Val	Asn	Ser	Met	Ser	Asp	Leu	Glu	Asn	Lys	Thr	Gln	Glu	Glu	Thr
1			5						10					15	
Pro	Lys	Lys	Arg	Pro	Tyr	Asn	Leu	Arg	Glu	Lys	Lys	Glu	Lys	Lys	Ala
			20					25					30		
Ala	Tyr	Arg	Ser	Leu	Ile	Arg	Pro	Glu	Leu	Ala	Asp	Glu	Leu	Tyr	Asp
		35				40					45				
Arg	Ile	Leu	Asn	Ile	Ile	Val	Val	Gln	Lys	Lys	Tyr	Arg	Asp	Pro	Asp
	50			55							60				
Tyr	Ser	Ala	Lys	Asp	Leu	Ala	Lys	Glu	Leu	Lys	Thr	Asn	Thr	Arg	Tyr
65				70						75				80	
Leu	Ser	Ala	Val	Val	Asn	Ser	Arg	Phe	Gly	Met	Asn	Tyr	Ser	Cys	Leu
			85					90						95	
Leu	Asn	Glu	Tyr	Arg	Val	Lys	Asp	Ala	Leu	His	Leu	Leu	Thr	Asp	Lys
			100					105						110	
Arg	Tyr	Ala	Asp	Lys	Asn	Val	Glu	Glu	Ile	Ser	Ala	Met	Val	Gly	Phe
		115					120					125			
Ala	Asn	Arg	Gln	Ser	Phe	Tyr	Ala	Ala	Phe	Tyr	Lys	Asn	Val	Gly	Glu
		130				135					140				
Thr	Pro	Asn	Gly	Tyr	Arg	Lys	Lys	His	Ala	Glu	Lys	Lys	Lys		
145					150					155					

<210> 7527

<211> 303

<212> PRT

<213> B.fragilis

<400> 7527

Ser	Val	Asn	Pro	Ala	Tyr	Glu	Glu	Arg	Ala	Asn	Asn	Val	Arg	Pro	Val
1			5						10					15	
Arg	Ser	Asn	Arg	Asp	Asn	Arg	Thr	Asn	Gln	Gln	Trp	Leu	Glu	Lys	Ala
			20					25					30		
Leu	Lys	Lys	Ala	Ser	Gln	Ala	Asp	Val	Ile	Val	Ala	Ala	Leu	Gly	Glu
		35				40					45				
Ser	Ser	Lys	Met	Ser	Gly	Glu	Ser	Ser	Ser	Arg	Thr	Asn	Phe	Asn	Leu
	50				55					60					
Arg	Asn	Val	Gln	His	Thr	Leu	Leu	Glu	Ala	Leu	Leu	Lys	Thr	Gly	Lys
65				70					75					80	
Pro	Val	Val	Leu	Val	Leu	Phe	Thr	Gly	Arg	Pro	Leu	Val	Leu	Asn	Trp
			85					90					95		
Glu	Gln	Glu	His	Val	Pro	Ala	Ile	Leu	Asn	Val	Trp	Phe	Gly	Gly	Ser
			100					105					110		
Glu	Ala	Gly	Pro	Ala	Ile	Gly	Asp	Val	Leu	Phe	Gly	Ala	Val	Asn	Pro
		115				120					125				
Gly	Gly	Lys	Leu	Thr	Met	Thr	Phe	Pro	Lys	Ser	Val	Gly	Gln	Ile	Pro
		130				135					140				
Leu	Tyr	Tyr	Ala	His	Lys	Asn	Thr	Gly	Arg	Pro	Leu	Lys	Glu	Gly	Lys
145				150					155						160
Trp	Phe	Glu	Lys	Phe	Arg	Ser	Asn	Tyr	Leu	Asp	Val	Asp	Asn	Asp	Ala
			165					170						175	
Leu	Tyr	Pro	Phe	Gly	Tyr	Gly	Leu	Ser	Tyr	Thr	Thr	Phe	Arg	Phe	Ser

180	185	190
Asp Ile Thr Leu Asn Arg Ser Ser Ile Gly Met Asp Asn Glu Leu Val		
195	200	205
Ala Ser Val Thr Val Thr Asn Thr Gly Asp Arg Ala Gly Ser Glu Val		
210	215	220
Val Gln Leu Tyr Ile Arg Asp Leu Val Gly Ser Val Thr Arg Pro Val		
225	230	235
Lys Glu Leu Lys Gly Phe Glu Lys Ile Tyr Leu Gln Pro Asn Glu Ser		
245	250	255
Arg Thr Val Arg Phe Thr Ile Ala Pro Glu Met Leu Lys Phe Tyr Asn		
260	265	270
Ala Asp Leu Lys Phe Val Ala Glu Pro Gly Asp Phe Asp Val Met Ile		
275	280	285
Gly Pro Asp Ser Arg Asn Val Lys Thr Ala Arg Phe Thr Leu Arg		
290	295	300

<210> 7528

<211> 66

<212> PRT

<213> B.fragilis

<400> 7528

Ser Phe Val Tyr Ser Ile Leu Arg Glu Asn His Leu Cys Gly Thr Leu		
1	5	10
Cys Asp Ser Val Val Asn Leu Ile Leu Phe Tyr Ser Leu Val Tyr Pro		
20	25	30
Val Gln Arg Asn Val Asn Arg Ala Val Phe Thr Phe Arg Leu Ser Gly		
35	40	45
Pro Ile Ile Thr Ser Lys Ser Pro Gly Ser Ala Thr Asn Phe Lys Ser		
50	55	60
Ala Leu		
65		

<210> 7529

<211> 102

<212> PRT

<213> B.fragilis

<400> 7529

Leu Glu Pro Phe Gly Leu Leu Phe Gly Lys Lys Gly Leu Asp Thr Arg		
1	5	10
Ile Lys Asn Lys Leu Asp Ile Arg Ile Lys Met Lys Lys Val Lys Lys		
20	25	30
Ser Thr Trp Val Thr Val Ala Leu Leu Ile Tyr Val Ser Ala Thr Ala		
35	40	45
Ala Tyr Leu Leu Pro Arg Asn His Glu Val Ser Asp Thr Glu Lys Tyr		
50	55	60
Leu Thr Leu Ala Ala Ser Tyr Val Ile Val Leu Val Leu Trp Leu Val		
65	70	75
Leu Arg Lys Lys Glu Gln Met Gln Gln Arg Arg Arg Glu Glu Glu His		
85	90	95
Met Asn Asn Leu Lys Lys		
100		

<210> 7530

<211> 707

<212> PRT

<213> B.fragilis

<400> 7530

Lys	Val	Tyr	Leu	Ile	Phe	Ile	Leu	Leu	Thr	Leu	Ile	Phe	Arg	Cys	Met
1				5					10					15	
Lys	Gln	Val	Asn	Leu	Arg	Val	Cys	Arg	Met	Ile	Leu	Pro	Leu	Leu	Phe
			20					25					30		
Gly	Leu	Phe	Leu	Ser	Leu	Ser	Ala	Tyr	Ala	Gln	Gln	Val	Ser	Val	Lys
		35					40					45			
Gly	His	Val	Lys	Asp	Ser	Thr	Gly	Glu	Pro	Val	Ile	Gly	Ala	Asn	Val
	50					55					60				
Val	Val	Lys	Asp	Asn	Ser	Ser	Ile	Gly	Thr	Ile	Thr	Asp	Leu	Asn	Gly
65					70					75					80
Asn	Phe	Val	Leu	Ser	Val	Pro	Gln	Asn	Ser	Thr	Leu	Val	Ile	Ser	Phe
				85					90					95	
Ile	Gly	Tyr	Lys	Pro	Val	Glu	Met	Lys	Ala	Ala	Pro	Ser	Val	Thr	Val
			100					105					110		
Thr	Leu	His	Glu	Asp	Ala	Val	Met	Leu	Gln	Glu	Ala	Val	Val	Ile	Gly
		115					120					125			
Tyr	Gly	Thr	Val	Lys	Lys	Asn	Asp	Val	Thr	Gly	Ser	Val	Met	Ala	Ile
	130					135					140				
Asp	Ala	Asp	Arg	Met	Val	Lys	Gly	Met	Ala	Thr	Ser	Ala	Ser	Asp	Leu
145					150				155						160
Leu	Val	Gly	Lys	Ala	Gly	Val	Ser	Val	Ile	Thr	Asp	Gly	Gly	Ala	
			165					170					175		
Pro	Gly	Ala	Gly	Ala	Thr	Ile	Arg	Val	Arg	Gly	Gly	Ser	Ser	Met	Ser
		180						185					190		
Ala	Ser	Asn	Asp	Pro	Leu	Ile	Val	Ile	Asp	Gly	Val	Pro	Val	Asp	Asn
		195					200					205			
Thr	Glu	Ile	Lys	Gly	Met	Gly	Asn	Pro	Leu	Ser	Thr	Val	His	Pro	Asn
	210					215					220				
Asp	Ile	Glu	Thr	Phe	Thr	Ile	Leu	Lys	Asp	Ala	Ser	Ala	Thr	Ala	Ile
225					230				235						240
Tyr	Gly	Ser	Arg	Ala	Ser	Asn	Gly	Val	Ile	Ile	Ile	Thr	Thr	Lys	Lys
			245					250						255	
Gly	Gln	Ser	Gly	Arg	Val	Lys	Val	Asp	Tyr	Ser	Gly	Thr	Phe	Ser	Ile
		260						265				270			
Ser	Thr	Lys	Ser	Asn	Thr	Val	Asp	Val	Met	Lys	Ala	Glu	Asp	Phe	Arg
	275						280					285			
Asn	Phe	Val	Ile	Glu	Lys	Phe	Gly	Glu	Asn	Ser	Leu	Gln	Ala	Asn	Ala
	290					295					300				
Leu	Gly	Lys	Thr	Ser	Thr	Asp	Trp	Gln	Asp	Glu	Ile	Phe	Arg	Thr	Ala
305					310				315						320
Phe	Ser	Thr	Asp	His	Asn	Val	Ser	Val	Ser	Gly	Ala	Val	Pro	His	Met
			325					330					335		
Pro	Tyr	Arg	Val	Ser	Val	Ala	Tyr	Thr	Asn	Glu	Asn	Gly	Ile	Leu	Lys
		340						345				350			
Thr	Ser	Asn	Met	Gln	Arg	Leu	Thr	Gly	Ala	Ile	Asn	Leu	Asn	Pro	Asn
	355						360					365			
Phe	Phe	Asp	Lys	Lys	Leu	Asn	Ile	Gln	Leu	Asn	Val	Lys	Gly	Val	Tyr
370						375					380				
Asn	Lys	Asn	Arg	Phe	Ala	Asp	Arg	Ala	Ala	Ile	Gly	Leu	Ala	Thr	Gln
385					390				395						400
Tyr	Asp	Pro	Thr	Gln	Pro	Val	Tyr	Met	Glu	Gly	Asn	Pro	Tyr	Gly	Asn
			405					410				415			
Gly	Tyr	Phe	Met	Tyr	Met	Lys	Gln	Glu	Gly	Asp	Lys	Ala	Ser	Pro	Ile
		420					425					430			
Asp	Ile	Gly	Leu	Ala	Asn	Pro	Val	Ala	Met	Leu	Glu	Glu	Lys	Asp	Asp
	435						440					445			
Thr	Ser	Thr	Val	Tyr	Arg	Ser	Ile	Gly	Asn	Ala	Gln	Ile	Asp	Tyr	Lys
450						455					460				

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Phe His Phe Leu Pro Glu Leu Arg Ala Asn Leu Asn Leu Gly Tyr Asp
 465 470 475 480
 Val Ser Lys Ser Lys Gly Asp Val Ile Ile Ala Asp Asn Ser Pro Leu
 485 490 495
 Thr Tyr Cys Thr Gly Asn Phe Lys Asn Gly Phe Gly Glu Asn Ser His
 500 505 510
 Tyr Thr Gln Leu Lys Arg Asn Thr Leu Leu Asp Phe Tyr Leu Asn Tyr
 515 520 525
 Ala Asn Thr Phe Gly Val Asn Tyr Ile Asp Val Met Ala Gly Tyr Ser
 530 535 540
 Trp Gln His Phe Tyr Asn Ser Thr Thr Asn Ser Tyr Pro Tyr Ser Ala
 545 550 555 560
 Ala Tyr Ala Glu Lys Thr Gly Glu Glu Phe Tyr Lys Lys Gly Asp Asp
 565 570 575
 Tyr Ala Ser Glu Ser Tyr Leu Val Ser Phe Phe Gly Arg Leu Asn Tyr
 580 585 590
 Thr Leu Leu Asn Arg Tyr Leu Val Thr Phe Thr Leu Arg Asn Asp Gly
 595 600 605
 Ser Ser Arg Phe Ser Pro Asp Asn Arg Trp Gly Leu Phe Pro Ser Val
 610 615 620
 Ala Leu Ala Trp Lys Leu Asn Glu Glu Ser Phe Leu Lys Asn Val Asn
 625 630 635 640
 Ala Ile Ser Asp Leu Lys Leu Arg Leu Gly Tyr Gly Val Thr Gly Gln
 645 650 655
 Gln Asn Leu Gly Asn Gly Asp Tyr Pro Tyr Met Ala Arg Tyr Met Tyr
 660 665 670
 Ser Lys Ala Gly Ala Asn Tyr Tyr Phe Gly Asp Thr Glu Tyr Ser Leu
 675 680 685
 Ile Ala Pro Gln Pro Tyr Asp Gln Asn Leu Glu Gly Glu Lys Thr Thr
 690 695 700
 Pro Gly Thr
 705

<210> 7531
 <211> 1335
 <212> PRT
 <213> B.fragilis

<400> 7531
 Arg Ile Pro Ala Cys Met Lys Lys Ile Leu Phe Leu Leu Leu Leu Leu
 1 5 10 15
 Pro Leu Met Val Ser Ala Gln Thr Tyr Lys Tyr Ile Gly Val Glu Asp
 20 25 30
 Gly Leu Ser Asn Arg Arg Val Tyr Tyr Ile Gln Lys Asp Lys Lys Gly
 35 40 45
 Tyr Met Trp Phe Leu Thr His Glu Gly Val Asp Arg Tyr Asp Gly Lys
 50 55 60
 Glu Phe Lys Arg Tyr Lys Leu Met Asp Asp Gly Glu Glu Leu Asn Ser
 65 70 75 80
 Leu Leu Asn Leu Asn Trp Leu Tyr Leu Asp His Glu Ser Thr Leu Trp
 85 90 95
 Glu Ile Gly Lys Lys Gly Lys Val Phe Arg Tyr Asp Pro Leu Arg Asp
 100 105 110
 Gln Phe Thr Leu Val Tyr Lys Leu Pro Glu Glu Lys Ile Lys Asp Arg
 115 120 125
 Pro Ala Pro Ile Ser Tyr Ser Phe Ile Asp Arg Asn Asn Asn Ile Trp
 130 135 140
 Leu Cys Asn Glu Glu Thr Leu Tyr Leu Tyr Asn Thr His Thr Leu Gln
 145 150 155 160

Thr Leu Gln Ile Lys Asn Glu Ile Gly Glu Asp Ile Thr Asp Ile Glu
 165 170 175
 Gln Ile Asp Asp Thr His Phe Phe Ile Gly Thr Glu Gln Gly Ile His
 180 185 190
 His Ala Glu Leu Lys Asn Gln Gly Leu His Leu Leu Pro Cys Asp Lys
 195 200 205
 Leu Asp Asn Leu Pro Ile Gln Ile Asn Glu Leu Tyr Phe His Arg Pro
 210 215 220
 Ser Arg Lys Leu Phe Ile Gly Thr Phe Glu Arg Gly Ile Tyr Val Tyr
 225 230 235 240
 Asp Met Asn Thr Lys Gln Ser Thr Gln Pro His Met Ser Leu Thr Asp
 245 250 255
 Val Ser Ile Thr Arg Ile Lys Pro Leu Asn Asn Lys Glu Leu Leu Val
 260 265 270
 Ala Thr Asp Gly Ala Gly Val Tyr Lys Ile Asn Ile Asn Ser Tyr Leu
 275 280 285
 Thr Thr Pro Tyr Ile Val Ala Asp Tyr Asn Gln Tyr Asn Glu Met Asn
 290 295 300
 Gly Asn Asn Ile Ser Asp Phe Tyr Val Asp Asp Glu Gln Arg Ile Trp
 305 310 315 320
 Leu Ala Asn Tyr Pro Ile Gly Ile Thr Val Arg Asn Asn Arg His Ser
 325 330 335
 Ser Tyr Asn Trp Ile Lys His Ser Ile Gly Asn Lys Gln Ser Leu Ile
 340 345 350
 Asn Asp Gln Val Asn Ser Ile Ile Glu Asp Ser Glu Arg Asp Leu Trp
 355 360 365
 Tyr Ala Thr Asn Asn Gly Ile Ser Tyr Tyr Asn Ser Glu Thr Gly Val
 370 375 380
 Trp His Ser Phe Met Ser Ser Phe Glu Lys Asn Gly Gly Asn Lys Asn
 385 390 395 400
 His Ile Phe Val Thr Leu Cys Glu Val Glu Pro Gly Ile Ile Trp Ala
 405 410 415
 Ala Gly Tyr Ser Ser Gly Ile Tyr Gln Ile Asn Lys Arg Thr Leu Ser
 420 425 430
 Val Glu Tyr Ile Thr Pro Ser Ser Leu Tyr Gly Val Asn Ile Arg Pro
 435 440 445
 Asp Lys Tyr Ile Arg Ser Ile Ile Lys Thr Ala Asp Gly Asp Ile Trp
 450 455 460
 Ser Gly Gly Tyr Tyr Asn Leu Lys Arg Ile Asp Phe His Lys Lys Thr
 465 470 475 480
 Leu Arg Leu Tyr Pro Lys Leu Asn Ser Ile Thr Ser Ile Met Glu Lys
 485 490 495
 Asp Ser Lys Gln Met Trp Ile Gly Thr Ala Thr Gly Leu Tyr Leu Leu
 500 505 510
 Glu Lys Glu Ser Gly Lys Tyr Gln Arg Ile Glu Leu Pro Val Glu Ser
 515 520 525
 Met Tyr Ile Tyr Ser Leu Tyr Gln Ala Arg Asn Gly Leu Leu Tyr Ile
 530 535 540
 Gly Thr Ser Gly Ser Gly Leu Leu Ile Tyr Asp Pro Glu Lys Arg Thr
 545 550 555 560
 Phe Thr His Tyr His Arg Asp Asn Cys Ala Leu Ile Ser Asn Asn Ile
 565 570 575
 Tyr Thr Ile Leu Ser Asp Thr Asp Asp Asp Ile Ile Met Ser Thr Glu
 580 585 590
 Asn Gly Leu Ser Ser Tyr Tyr Pro Ala Glu Lys Leu Phe His Asn Trp
 595 600 605
 Thr Lys Asp Gln Gly Leu Met Ala Ser His Phe Asn Ala Gly Ser Gly
 610 615 620
 Thr Leu Arg Lys Asn Gly Asn Phe Ile Phe Gly Ser Ser Asp Gly Ala

625		630		635		640
Ile Glu Phe Asn Lys	Glu Met Lys Ile	Pro Arg Lys Tyr	Ser Ser Lys			
	645	650	655			
Met Val Leu Ser Asp	Leu Thr Ile Phe	Tyr Gln Thr Val	Tyr Pro Gly			
	660	665	670			
Asp Glu Asn Ser Pro	Leu Ser Thr Asp	Ile Asp Asp Thr	Lys Glu Leu			
	675	680	685			
Glu Leu Ser Tyr Ser	Gln Asn Ile Phe	Ser Leu Lys Val	Ser Ser Ile			
	690	695	700			
Asn Tyr Asp Tyr Pro	Ser Asn Ile Leu	Tyr Ser Trp Lys	Leu Glu Gly			
705	710	715	720			
Phe Tyr Asp Gln Trp	Ser Arg Pro Gly	Asn Glu Asn Ile	Ile Arg Phe			
	725	730	735			
Thr Asn Leu Ser Pro	Gly Glu Tyr Thr	Leu His Ile Arg	Ala Val Ser			
	740	745	750			
Asn Glu Asp Lys Arg	Ile Val Leu Glu	Glu Arg Thr Met	Lys Ile Ser			
	755	760	765			
Ile Ala Gln Pro Ile	Trp Leu Ser Phe	Trp Ala Met Leu	Val Tyr Ala			
	770	775	780			
Ile Val Leu Ala Val	Ile Ala Ile Ile	Thr Leu Arg Ile	Ile Ile Leu			
785	790	795	800			
Arg Lys Gln Arg Lys	Val Ser Asp Glu	Lys Ile His Phe	Phe Ile Asn			
	805	810	815			
Thr Ala His Asp Ile	Arg Thr Pro Leu	Thr Leu Ile Lys	Ala Pro Leu			
	820	825	830			
Glu Glu Ile Arg Glu	Arg Glu Ala Leu	Thr Lys Asp Gly	Ile Ser Asn			
	835	840	845			
Met Asn Thr Ala Leu	Arg Asn Val Asn	Ala Leu Leu Arg	Leu Thr Thr			
	850	855	860			
Asn Leu Ile Asn Phe	Glu Arg Ala Asp	Val Tyr Ser Ser	Glu Leu Tyr			
865	870	875	880			
Ile Ser Glu Tyr Glu	Leu Asn Thr Tyr	Leu Thr Glu Thr	Phe Asn Ala			
	885	890	895			
Phe Arg Pro Tyr Ala	Ser Val Lys His	Ile Asn Phe Thr	Tyr Glu Ser			
	900	905	910			
Asn Phe Arg Tyr Leu	Asn Val Trp Ile	Asp Lys Glu Lys	Met Asp Ser			
	915	920	925			
Ile Leu Lys Asn Ile	Ile Ser Asn Ala	Leu Lys Tyr Thr	Pro Glu Asn			
	930	935	940			
Gly Ser Val His Ile	Tyr Ala Ser Glu	Thr Asn Asp Ser	Trp Asn Val			
945	950	955	960			
Glu Val Asn Asp Thr	Gly Ile Gly Ile	Pro Ala Asn Glu	Gln Lys Lys			
	965	970	975			
Leu Phe Lys Ile His	Phe Arg Gly Ser	Asn Ala Ile Asn	Ser Lys Val			
	980	985	990			
Thr Gly Ser Gly Ile	Gly Leu Met Leu	Val Trp Lys Leu	Val His Leu			
	995	1000	1005			
His Lys Gly Lys Ile	Asn Leu Ser Ser	Val Glu His Gln	Gly Ser Ser			
	1010	1015	1020			
Ile Lys Val Ser Phe	Pro Lys Asp Ser	Lys His Phe His	Lys Ala His			
1025	1030	1035	1040			
Leu Ala Thr Arg Thr	Arg Glu Leu Ser	Thr Glu Gln Val	Pro His Val			
	1045	1050	1055			
Ser Pro Ala Glu Ile	Tyr Glu Lys Ala	Lys Lys Gln His	Asp Gln Asn			
	1060	1065	1070			
Leu Gln Arg Leu Leu	Ile Val Glu Asp	Asn Asp Glu Leu	Arg Asn Tyr			
	1075	1080	1085			
Leu Thr His Thr Leu	Ser Asp Asn Tyr	Thr Ile Gln Thr	Cys Ser Asn			
1090	1095	1100				

Gly Lys Glu Ala Leu Thr Ile Val Lys Glu Tyr Met Pro Glu Leu Ile
 1105 1110 1115 1120
 Ile Ser Asp Ile Met Met Pro Glu Met Arg Gly Asp Glu Leu Cys Ala
 1125 1130 1135
 Ala Ile Lys Asn Asp Ile Glu Thr Ser His Ile Pro Ile Ile Leu Leu
 1140 1145 1150
 Thr Ala Leu Asn Asp Glu Lys Asn Ile Leu Glu Gly Leu Lys Ile Gly
 1155 1160 1165
 Ala Asp Glu Tyr Ile Val Lys Pro Phe Asn Ile Gly Ile Leu Lys Ala
 1170 1175 1180
 Thr Ile Ala Asn Leu Leu Thr Asn Arg Ala Leu Leu Lys Ser Lys Tyr
 1185 1190 1195 1200
 Ala Asn Leu Glu Val Ser Glu Glu Glu Glu Val Ser Pro Asn Cys Ala
 1205 1210 1215
 Thr Asp Leu Asp Trp Lys Phe Ile Ala Thr Val Lys Lys Ser Val Glu
 1220 1225 1230
 Glu Asn Ile Asp Asn Pro Ala Phe Asn Val Asp Val Leu Cys Asn Leu
 1235 1240 1245
 Leu Asn Met Ser Arg Thr Ser Phe Tyr Asn Lys Leu Lys Ala Leu Thr
 1250 1255 1260
 Asp Gln Ala Pro Ala Asp Tyr Ile Arg Leu Ile Arg Leu Lys Arg Ala
 1265 1270 1275 1280
 Ala Ala Leu Leu Lys Thr Gly Gln His Ser Val Thr Glu Ile Ser Glu
 1285 1290 1295
 Leu Thr Gly Phe Asn Asp Val Lys Tyr Phe Arg Glu Val Phe Lys Lys
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 His Phe Lys Val Ser Pro Ser Lys Tyr Cys Lys Glu Gly Gly Lys Glu
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 Asp Val Glu Glu Gln Gln Glu
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 Ile Val Thr Lys Arg Asn Trp Ile Ser Lys Asp Asp Phe Ile Asp Leu
 35 40 45
 Leu Ala Ile Ala Gln Ser Ala Pro Gly Ile Leu Ala Val Asn Ile Ser
 50 55 60
 Ile Phe Ile Gly Tyr Lys Leu Arg Gly Ile Arg Gly Ser Leu Val Thr
 65 70 75 80
 Ala Leu Gly Thr Val Leu Pro Ser Phe Val Ile Ile Leu Ala Ile Ala
 85 90 95
 Met Phe Phe His Asn Phe Lys Asp Asn Pro Ile Val Glu Arg Ile Phe
 100 105 110
 Lys Gly Ile Arg Pro Ala Val Val Ala Leu Ile Ala Ala Pro Thr Phe
 115 120 125
 Ser Met Ala Lys Ser Ala Lys Val Asn Arg Tyr Thr Leu Trp Ile Pro
 130 135 140
 Val Val Ser Ala Leu Leu Ile Trp Leu Leu Gly Phe Ser Pro Ile Trp
 145 150 155 160
 Ile Ile Ile Ala Ala Gly Val Gly Gly Phe Cys Trp Gly Lys Trp Lys
 165 170 175

Gln Ser His Pro
180

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<213> B.fragilis

<400> 7533

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Leu	Asn	Lys	Tyr	Thr	Met	Lys	Val	Lys	Pro	Asp	Leu	Ser	Phe	Trp	Lys
			20					25					30		
Leu	Trp	Asn	Ile	Ser	Phe	Gly	Phe	Phe	Gly	Val	Gln	Ile	Ala	Tyr	Ala
		35				40					45				
Leu	Gln	Ser	Ala	Asn	Ile	Ser	Arg	Ile	Phe	Ala	Thr	Leu	Gly	Ala	Asp
	50					55					60				
Pro	His	Ser	Leu	Ser	Tyr	Phe	Trp	Ile	Leu	Pro	Pro	Leu	Ala	Gly	Ile
65					70					75					80
Ile	Val	Gln	Pro	Ile	Ile	Gly	Ala	Ala	Ser	Asp	Lys	Thr	Trp	Thr	Arg
				85					90					95	
Phe	Gly	Arg	Arg	Ile	Pro	Tyr	Leu	Phe	Ala	Gly	Ser	Leu	Leu	Ala	Val
			100					105						110	
Trp	Val	Met	Cys	Leu	Leu	Pro	Asn	Ala	Gly	Ser	Phe	Gly	Met	Ala	Val
		115					120					125			
Gly	Thr	Ala	Met	Ile	Phe	Gly	Leu	Val	Ala	Leu	Met	Phe	Leu	Asp	Thr
		130				135					140				
Ser	Ile	Asn	Met	Ala	Met	Gln	Pro	Phe	Lys	Met	Leu	Val	Gly	Asp	Met
145					150					155					160
Val	Asn	Glu	Lys	Gln	Lys	Gly	Leu	Ala	Tyr	Ser	Ile	Gln	Ser	Phe	Leu
				165					170					175	
Cys	Asn	Val	Gly	Ser	Leu	Ile	Gly	Tyr	Leu	Phe	Pro	Phe	Ile	Phe	Thr
			180					185					190		
Phe	Ile	Gly	Ile	Ser	Asn	Thr	Ala	Asp	Lys	Gly	Thr	Val	Pro	Asp	Ser
		195					200					205			
Val	Ile	Tyr	Ser	Phe	Tyr	Ile	Gly	Ala	Ala	Ile	Leu	Ile	Leu	Cys	Val
	210					215					220				
Ile	Tyr	Thr	Thr	Val	Lys	Val	Lys	Glu	Met	Pro	Pro	Lys	Glu	Phe	Glu
225					230					235					240
Glu	Phe	His	Gly	Ile	Thr	Ala	Asp	Glu	Lys	Lys	Glu	Lys	Ala	Asp	Phe
				245					250					255	
Ile	Ser	Leu	Leu	Lys	His	Ala	Pro	Lys	Val	Phe	Trp	Thr	Val	Gly	Leu
		260						265						270	
Val	Gln	Phe	Phe	Cys	Trp	Ala	Ala	Phe	Met	Tyr	Met	Trp	Thr	Tyr	Thr
		275					280					285			
Asn	Gly	Ala	Ile	Ala	Ala	Thr	Val	Trp	Gly	Thr	Thr	Asp	Val	Gln	Ser
	290					295						300			
Ala	Gly	Tyr	Gln	Glu	Ala	Gly	Asn	Trp	Val	Gly	Val	Leu	Phe	Ala	Val
305					310					315					320
Gln	Ala	Ile	Gly	Ser	Val	Ile	Trp	Ala	Val	Ile	Leu	Pro	Leu	Phe	Lys
				325					330					335	
Ala	Arg	Lys	Gln	Ala	Tyr	Ala	Leu	Ser	Leu	Val	Leu	Gly	Gly	Ile	Gly
			340					345					350		
Phe	Ile	Ser	Thr	Leu	Phe	Phe	His	Asn	Glu	Tyr	Leu	Leu	Phe	Ile	Ser
		355					360					365			
Tyr	Leu	Leu	Ile	Gly	Cys	Ala	Trp	Ala	Ala	Met	Leu	Ala	Met	Pro	Phe
	370					375					380				
Thr	Ile	Leu	Thr	Asn	Ser	Val	Ser	Gly	Lys	Asn	Met	Gly	Ala	Tyr	Leu
385					390					395					400

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Gly Leu Phe Asn Gly Thr Ile Cys Val Pro Gln Ile Ala Ala Ala Leu
 405 410 415
 Val Gly Gly Gly Leu Leu His Leu Val Gly Gly His Gln Val Asn Met
 420 425 430
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 Phe Ile Lys Glu Thr Met Ala His His Glu Ala
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 Lys Phe Phe Tyr Ser Ile Ser Phe Ser Pro Pro Thr Asn Leu Leu Ile
 35 40 45
 Phe Ala Arg Lys Glu Asn Lys Ile Val Tyr Thr His Met Ile Leu Phe
 50 55 60
 Phe Arg Thr Pro Ser Lys Ser Val Ile Ala Val Glu Ser Asn His Glu
 65 70 75 80
 Leu Asn Ala Asn Asp Asn Asn Lys Leu Cys Trp Leu Phe Gly Glu Ala
 85 90 95
 Met Pro Glu Ser Glu Glu Asn Leu Gln Gly Cys Phe Val Gly Pro Arg
 100 105 110
 Arg Glu Met Ile Thr Pro Trp Ser Thr Asn Ala Val Glu Ile Thr Gln
 115 120 125
 Asn Met Gly Leu Asp Gly Ile Ser Arg Ile Glu Glu Tyr Phe Pro Val
 130 135 140
 Lys Asp Glu Asn Ala Asp His Asp Pro Met Leu Gln Arg Met Tyr Lys
 145 150 155 160
 Gly Leu Asn Gln Asn Val Phe Thr Thr Asn Arg Gln Pro Glu Ala Ile
 165 170 175
 Ile Tyr Ile Asp Asp Leu Glu Ala Tyr Asn Glu Lys Glu Gly Leu Ala
 180 185 190
 Leu Ser Lys Glu Glu Met Asp Tyr Leu Lys Lys Val Glu Ser Asp Leu
 195 200 205
 Gly Arg Arg Leu Thr Asp Ser Glu Val Phe Gly Phe Ala Gln Ile Asn
 210 215 220
 Ser Glu His Cys Arg His Lys Ile Phe Gly Gly Thr Phe Ile Ile Asp
 225 230 235 240
 Gly Val Glu Gln Glu Ser Ser Leu Phe Gln Met Ile Lys Lys Thr Thr
 245 250 255
 Gln Glu Asn Pro Asn Lys Ile Ile Ser Ala Tyr Lys Asp Asn Val Ala
 260 265 270
 Phe Ala Glu Gly Pro Val Val Glu Gln Phe Ala Pro Ala Asp His Ser
 275 280 285
 Lys Pro Asp Phe Phe Arg Ile Lys Asp Ile Lys Ser Val Ile Ser Leu
 290 295 300
 Lys Ala Glu Thr His Asn Phe Pro Thr Thr Val Glu Pro Phe Asn Gly
 305 310 315 320
 Ala Ser Thr Gly Thr Gly Gly Glu Ile Arg Asp Arg Met Gly Gly Gly
 325 330 335
 Lys Gly Ser Trp Pro Ile Ala Gly Thr Ala Val Tyr Met Thr Ser Tyr
 340 345 350

Pro Arg Thr Glu Glu Gly Arg Glu Trp Glu Asp Ile Leu Pro Val Arg
 355 360 365
 Lys Trp Leu Tyr Gln Thr Pro Glu Gln Ile Leu Ile Lys Ala Ser Asn
 370 375 380
 Gly Ala Ser Asp Phe Gly Asn Lys Phe Gly Gln Pro Leu Ile Cys Gly
 385 390 395 400
 Ser Val Leu Thr Phe Glu His Thr Glu Asn Asn Glu Thr Tyr Ala Tyr
 405 410 415
 Asp Lys Val Ile Met Leu Ala Gly Gly Val Gly Tyr Gly Thr Gln Arg
 420 425 430
 Asp Cys Leu Lys Gly Gln Pro Glu Ala Gly Asn Lys Val Val Val Ile
 435 440 445
 Gly Gly Asp Asn Tyr Arg Ile Gly Leu Gly Gly Gly Ser Val Ser Ser
 450 455 460
 Val Asp Thr Gly Arg Tyr Ser Ser Gly Ile Glu Leu Asn Ala Val Gln
 465 470 475 480
 Arg Ala Asn Ala Glu Met Gln Lys Arg Ala Asn Asn Val Val Arg Ala
 485 490 495
 Leu Cys Glu Glu Asp Glu Asn Pro Val Val Ser Ile His Asp His Gly
 500 505 510
 Ser Ala Gly His Val Asn Cys Leu Ser Glu Leu Val Glu Glu Cys Gly
 515 520 525
 Gly Leu Ile Asp Met Ser Lys Leu Pro Ile Gly Asp Lys Thr Leu Ser
 530 535 540
 Ala Lys Glu Ile Ile Ala Asn Glu Ser Gln Glu Arg Met Gly Leu Leu
 545 550 555 560
 Ile Lys Glu Glu Ala Ile Glu His Val Arg Gln Ile Ala Glu Arg Glu
 565 570 575
 Arg Ala Pro Met Tyr Val Val Gly Glu Thr Thr Gly Asp His Arg Phe
 580 585 590
 Ala Phe Gln Gln Ala Asp Gly Val Arg Pro Phe Asp Leu Ala Val Asp
 595 600 605
 Gln Met Phe Gly Ser Ser Pro Lys Thr Tyr Met Ile Asp Lys Thr Val
 610 615 620
 Glu Arg His Tyr Thr Met Pro Glu Tyr Glu Thr Ser Lys Leu His Glu
 625 630 635 640
 Tyr Leu Thr Gln Val Leu Gln Leu Glu Ala Val Ala Cys Lys Asp Trp
 645 650 655
 Leu Thr Asn Lys Val Asp Arg Ser Val Thr Gly Lys Val Ala Arg Gln
 660 665 670
 Gln Cys Gln Gly Glu Ile Gln Leu Pro Leu Ser Asp Cys Gly Val Val
 675 680 685
 Ala Leu Asp Tyr Arg Gly Glu Lys Gly Ile Ala Thr Ser Ile Gly His
 690 695 700
 Ala Pro Gln Ala Ala Leu Ala Asp Pro Ala Ala Gly Ser Ile Leu Ser
 705 710 715 720
 Val Ser Glu Ala Leu Thr Asn Leu Val Trp Ala Pro Leu Ala Glu Gly
 725 730 735
 Leu Asp Ser Val Ser Leu Ser Ala Asn Trp Met Trp Pro Cys Arg Ser
 740 745 750
 Gln Glu Gly Glu Asp Ala Arg Leu Tyr Thr Ala Val Lys Ala Leu Ser
 755 760 765
 Asp Phe Cys Cys Ala Leu Gln Ile Asn Val Pro Thr Gly Lys Asp Ser
 770 775 780
 Leu Ser Met Thr Gln Lys Tyr Pro Asn Gly Glu Lys Val Val Ser Pro
 785 790 795 800
 Gly Thr Val Ile Val Ser Ala Gly Gly Glu Val Ser Asp Val Lys Lys
 805 810 815
 Val Val Ser Pro Val Leu Val Asn Asp Ala Lys Thr Thr Leu Tyr His

820					825					830						
Ile	Asp	Phe	Ser	Phe	Asp	Asn	Leu	Lys	Leu	Gly	Gly	Ser	Ala	Phe	Ala	
835					840					845						
Gln	Ser	Leu	Gly	Lys	Val	Gly	Ser	Glu	Val	Pro	Cys	Val	Gln	Asp	Ala	
850					855					860						
Glu	Tyr	Phe	Arg	Asp	Ala	Phe	Leu	Ala	Val	Gln	Glu	Leu	Val	Asn	Lys	
865					870					875					880	
Gly	Leu	Ile	Leu	Ala	Gly	His	Asp	Ile	Ser	Ala	Gly	Gly	Leu	Ile	Thr	
885					890					895						
Thr	Leu	Leu	Glu	Met	Cys	Phe	Ala	Asn	Val	Glu	Gly	Gly	Leu	Glu	Ile	
900					905					910						
Ser	Leu	Asp	Lys	Met	Lys	Glu	Thr	Asp	Ile	Val	Lys	Ile	Leu	Phe	Ala	
915					920					925						
Glu	Asn	Pro	Gly	Ile	Val	Ile	Gln	Ile	Ser	Asp	Lys	His	Lys	Asp	Glu	
930					935					940						
Val	Lys	Lys	Ile	Leu	Glu	Asp	Ala	Gly	Val	Gly	Phe	Ile	Lys	Leu	Gly	
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Lys	Pro	Thr	Asp	Glu	Arg	His	Ile	Leu	Val	Asn	Lys	Glu	Gly	Ala	Thr	
965					970					975						
Tyr	Gln	Phe	Gly	Ile	Asp	Tyr	Met	Arg	Asp	Val	Trp	Tyr	Ser	Ser	Ser	
980					985					990						
Tyr	Leu	Leu	Asp	Arg	Lys	Gln	Ser	Met	Asn	Gly	Cys	Ala	Lys	Lys	Arg	
995					1000					1005						
Phe	Glu	Asn	Tyr	Lys	Met	Gln	Pro	Leu	Glu	Phe	Ala	Phe	Met	Pro	Gly	
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Phe	Lys	Gly	Lys	Leu	Ser	Gln	Tyr	Gly	Ile	Thr	Pro	Glu	Arg	Arg	Thr	
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Pro	Ser	Gly	Ile	Arg	Ala	Ala	Ile	Ile	Arg	Glu	Lys	Gly	Thr	Asn	Gly	
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Glu	Arg	Glu	Met	Ala	Tyr	Ser	Leu	Tyr	Leu	Ala	Gly	Phe	Asp	Val	Lys	
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Asp	Val	Thr	Met	Thr	Asp	Leu	Ile	Ser	Gly	Arg	Glu	Thr	Leu	Glu	Asp	
1075					1080					1085						
Val	Asn	Met	Ile	Val	Tyr	Cys	Gly	Gly	Phe	Ser	Asn	Ser	Asp	Val	Leu	
1090					1095					1100						
Gly	Ser	Ala	Lys	Gly	Trp	Ala	Gly	Gly	Phe	Leu	Phe	Asn	Pro	Lys	Ala	
1105					1110					1115					1120	
Lys	Glu	Ala	Leu	Asp	Lys	Phe	Tyr	Ala	Arg	Glu	Asp	Thr	Leu	Ser	Leu	
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Pro	Glu	His	Glu	Lys	Lys	Gly	Lys	Met	Leu	His	Asn	Glu	Ser	His	Lys	
1155					1160					1165						
Phe	Glu	Ser	Thr	Phe	Val	Gly	Val	Thr	Ile	Pro	Thr	Asn	Arg	Ser	Val	
1170					1175					1180						
Met	Phe	Gly	Ser	Leu	Ser	Gly	Ser	Lys	Leu	Gly	Ile	Trp	Val	Ala	His	
1185					1190					1195					1200	
Gly	Glu	Gly	Lys	Phe	Ser	Leu	Pro	Tyr	Asp	Glu	Asp	Gln	Tyr	Asn	Val	
1205					1210					1215						
Val	Ala	Lys	Tyr	Ser	Tyr	Asp	Glu	Tyr	Pro	Gly	Asn	Pro	Asn	Gly	Ser	
1220					1225					1230						
Asp	Tyr	Ser	Ile	Ala	Ala	Leu	Ala	Ser	Ala	Asp	Gly	Arg	His	Leu	Ala	
1235					1240					1245						
Met	Met	Pro	His	Leu	Glu	Arg	Ala	Ile	Phe	Pro	Trp	Gln	Asn	Ala	Cys	
1250					1255					1260						
Tyr	Pro	Ala	Asp	Arg	Val	His	Asn	Asp	Gln	Val	Thr	Pro	Trp	Ile	Glu	
1265					1270					1275					1280	
Ala	Phe	Val	Asn	Ala	Arg	Lys	Trp	Val	Glu	Glu	Lys	Lys	Lys			
1285					1290											

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Ser	Val	Val	His	Ser	Lys	Pro	Tyr	Thr	Ile	Met	Asn	Leu	Ala	Lys	Tyr
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			20					25					30		
Ile	Gly	Gly	Val	Phe	Ser	Phe	Gly	Lys	Leu	Gly	Lys	Lys	Glu	Asp	Ala
		35					40					45			
Pro	Phe	Val	Ile	Lys	Ser	Ala	Val	Ile	Met	Thr	Arg	Tyr	Pro	Gly	Ala
	50					55					60				
Glu	Pro	Ala	Glu	Val	Glu	Arg	Leu	Ile	Thr	Glu	Pro	Ile	Ser	Arg	Glu
65					70					75					80
Ile	Gln	Ser	Met	Ser	Gly	Val	Tyr	Lys	Ile	Lys	Ser	Glu	Ser	Met	Tyr
			85					90						95	
Gly	Ile	Ser	Lys	Ile	Thr	Phe	Glu	Leu	Leu	Pro	Ser	Leu	Pro	Ala	Ser
			100					105					110		
Ser	Ile	Pro	Gln	Lys	Trp	Asp	Glu	Leu	Arg	Arg	Lys	Val	Leu	Asn	Ile
		115					120					125			
Gln	Pro	Gln	Leu	Pro	Ser	Gly	Ser	Ser	Val	Pro	Thr	Val	Ser	Asp	Asp
	130					135					140				
Phe	Gly	Asp	Val	Phe	Gly	Ile	Tyr	Tyr	Gly	Leu	Thr	Ala	Asp	Asp	Gly
145					150					155					160
Phe	Ser	Tyr	Glu	Glu	Met	Arg	Asn	Trp	Ala	Glu	Arg	Ile	Lys	Thr	Gln
			165					170						175	
Val	Val	Thr	Ala	Asp	Gly	Val	Met	Lys	Val	Ala	Leu	Phe	Gly	Thr	Gln
			180					185					190		
Thr	Glu	Val	Val	Asn	Ile	Ser	Ile	Ser	Val	Asn	Lys	Leu	Ala	Gly	Met
		195				200						205			
Gly	Ile	Asp	Pro	Lys	Gln	Leu	Ala	Gly	Leu	Leu	Gln	Ser	Gln	Asn	Gln
	210					215					220				
Ile	Ile	Asn	Thr	Gly	Glu	Ile	Thr	Ala	Gly	Glu	Gln	Gln	Leu	Arg	Val
225					230					235					240
Val	Ala	Asn	Gly	Met	Tyr	Thr	Thr	Val	Asp	Asp	Ile	Arg	Asn	Gln	Val
			245						250					255	
Ile	Thr	Thr	Arg	Ala	Gly	Gln	Val	Lys	Leu	Gly	Asp	Ile	Ala	Val	Ile
			260					265					270		
Glu	Lys	Gly	Tyr	Met	Asp	Pro	Pro	Gly	Thr	Ile	Met	Arg	Val	Asn	Gly
		275					280					285			
Lys	Arg	Ala	Ile	Gly	Ile	Gly	Val	Ser	Thr	Asp	Pro	Gln	Arg	Asp	Val
	290					295					300				
Val	Leu	Thr	Gly	Glu	Met	Val	Asp	Lys	Lys	Leu	Ala	Glu	Leu	Leu	Pro
305					310					315					320
Leu	Met	Pro	Val	Gly	Leu	Asn	Leu	Glu	Ser	Leu	Tyr	Leu	Glu	Asn	Val
			325						330					335	
Ile	Ala	Lys	Glu	Ala	Asn	Asn	Gly	Phe	Ile	Ile	Asn	Leu	Ile	Glu	Ser
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Ile	Leu	Ile	Val	Ile	Val	Ile	Ile	Met	Leu	Val	Met	Gly	Met	Arg	Ala
	355							360				365			
Gly	Val	Leu	Ile	Gly	Thr	Ser	Leu	Val	Phe	Ser	Ile	Gly	Gly	Thr	Leu
	370					375					380				
Leu	Ile	Met	Ser	Phe	Met	Gly	Val	Gly	Leu	Asn	Arg	Thr	Ser	Leu	Ala
385					390					395					400
Gly	Phe	Ile	Ile	Ala	Met	Gly	Met	Leu	Val	Asp	Asn	Ala	Ile	Val	Val
				405					410					415	

GenBank accession number: U00096.1 (B.fragilis)

			885					890					895				
Met	Leu	Pro	Leu	Ile	Phe	Ile	Gly	Ile	Val	Leu	Gly	Leu	Leu	Leu	Leu	Leu	Leu
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Gly	Lys	Ser	Phe	Asp	Phe	Phe	Ala	Ile	Leu	Gly	Leu	Leu	Gly	Leu	Ile		
			915				920					925					
Gly	Met	Asn	Ile	Lys	Asn	Ala	Ile	Val	Leu	Val	Asp	Gln	Ile	Asp	Ile		
			930			935					940						
Glu	Asn	Gln	Ser	Gly	Leu	Asp	Pro	Arg	Lys	Ala	Val	Ile	Lys	Ala	Thr		
945					950					955					960		
Ile	Ser	Arg	Ile	Val	Pro	Val	Ala	Met	Ala	Ser	Gly	Thr	Thr	Ile	Leu		
				965				970						975			
Gly	Met	Leu	Pro	Leu	Leu	Phe	Asp	Ala	Met	Phe	Gly	Gly	Met	Ala	Ala		
			980					985					990				
Thr	Ile	Met	Gly	Gly	Leu	Leu	Val	Ala	Ser	Ala	Leu	Thr	Leu	Phe	Val		
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<213> B.fragilis

<400> 7536

Leu	Ile	Leu	Asn	Met	Lys	Arg	Met	Lys	Ala	Met	His	Trp	Met	Met	Tyr		
1			5					10					15				
Thr	Leu	Leu	Gly	Ile	Thr	Leu	Leu	Leu	Thr	Ala	Cys	Val	Asp	Asp	Asp		
			20					25				30					
Lys	Asp	Leu	Ser	Gln	Pro	Lys	Glu	Pro	Glu	Lys	Thr	Thr	Asp	Leu	Ile		
			35				40					45					
Ile	Pro	Asp	Asp	Ala	Asp	Trp	Thr	Thr	Thr	Arg	Ser	Val	Asn	Leu	Ser		
			50			55					60						
Ile	His	Ser	Pro	Val	Ala	Thr	Arg	Val	Ala	Ile	Tyr	Thr	Asp	Ala	Ala		
65				70					75						80		
Cys	Thr	Asp	Glu	Ser	Leu	Leu	Ala	Glu	Thr	Pro	Val	Ser	Asp	Thr	Ser		
				85				90					95				
Lys	Ser	Ile	Glu	Leu	Asp	Val	Ala	Lys	Ala	Asn	Arg	Ala	Leu	Tyr	Val		
			100					105					110				
Gln	Tyr	Pro	Ala	Gly	Lys	Gly	Lys	Glu	Val	Ile	Ser	Val	Pro	Ile	Asn		
			115				120					125					
Arg	Ala	Ser	Thr	Arg	Ala	Glu	Leu	Ser	Ile	Lys	Leu	Pro	Glu	Asn	Val		
						135					140						
Ser	Gly	Phe	Asp	Thr	Asn	Gly	Gly	Glu	Gly	Ala	Tyr	Ser	Tyr	Gln	Trp		
145					150					155					160		
Tyr	Pro	Val	Lys	Gly	Gly	Glu	Ala	Thr	Leu	Met	Met	Glu	Asp	Asn	Trp		
				165				170					175				
Pro	Glu	Thr	Gly	Asp	Tyr	Asp	Phe	Asn	Asp	Phe	Val	Ile	Gly	Tyr	Arg		
			180					185					190				
Thr	Gln	Ala	Thr	Phe	Phe	Asp	Gly	His	Gly	Gly	Ser	Lys	Lys	Asp	Tyr		
			195				200					205					
Glu	Gln	Asp	Gly	Leu	Glu	Ile	Lys	Ile	Thr	Phe	Arg	Ala	Met	Gly	Gly		
			210			215					220						
Tyr	Leu	Pro	Tyr	Arg	Leu	Gly	Leu	Gln	Leu	Asp	Lys	Thr	His	Ala	Arg		
225					230					235					240		
Tyr	Ile	Asp	Asp	Val	Ile	Glu	Ile	Glu	Gly	Asn	Asp	Leu	Val	Lys	Met		
				245				250					255				
Glu	Leu	Gln	Asn	Pro	Gly	Glu	Asp	Ala	Pro	Ala	Ile	Phe	Ile	Phe	Thr		
			260					265					270				
Gly	Thr	Glu	Gln	Leu	Arg	Lys	Arg	Asn	Asn	Gly	Gly	Thr	Phe	Tyr	Asn		

275 280 285
 Thr Glu Pro Asp His Ala Ile Ala Asn Asn Asp Leu Val Thr Ile Lys
 290 295 300
 Tyr Arg Leu Lys Ile Asn Cys Phe Lys Asn Leu Glu Lys Thr Gln Ala
 305 310 315 320
 Leu Trp Ala Ala Ala Thr Ser Glu Asn Gln Asn Phe Phe Leu Gln Lys
 325 330 335
 Glu Lys Asn Gly Gly Arg Glu Ile His Leu Arg Gly Tyr Glu Pro Thr
 340 345 350
 Ala Tyr Tyr Ser Asn Ser Tyr Ala Gly Glu Ala Gly Gly Asn Met Arg
 355 360 365
 Thr Asp Ile Lys Tyr Cys Ser Thr Asp Asn Phe Val Trp Gly Ile Lys
 370 375 380
 Ile Pro Val Ala Ile Pro His Pro Ile Glu Lys Ile Asp Ile Met Gln
 385 390 395 400
 Val Tyr Ser Lys Phe Arg Ser Trp Ile Thr Glu Pro Asn His Ser Asp
 405 410 415
 Pro Ser Ser Pro Asp Phe Asn Glu Asn Trp Phe Lys Tyr Tyr Asp Thr
 420 425 430
 Ser Lys Val Ile Gly
 435

<210> 7537
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7537
 Lys Ser Arg Asn Val Met Lys Lys Leu Met Trp Ile Val Cys Leu Leu
 1 5 10 15
 Val Val Ser Val Thr Val Gln Ala Gln Phe Glu Lys Gly Lys Trp Ile
 20 25 30
 Val Asn Pro Ser Val Thr Gly Leu Gly Leu Ser Tyr Ser Lys Ser Glu
 35 40 45
 Lys Thr Gln Phe Gly Leu Gln Ala Gln Gly Gly Ala Phe Leu Val Asp
 50 55 60
 Asn Val Ala Leu Met Leu Thr Ala Gly Ala Asn Trp Ser Lys Pro Glu
 65 70 75 80
 Asp Lys Tyr Thr Leu Gly Val Gly Gly Arg Tyr Tyr Phe Asp Lys Cys
 85 90 95
 Gly Ile Tyr Leu Gly Ala Gly Leu Lys Met Asn Arg Tyr Asn Trp Lys
 100 105 110
 Val Gly Asp Thr Thr Asp Phe Ala Phe Gly Ala Glu Ala Gly Tyr Ala
 115 120 125
 Phe Phe Leu Thr Arg Thr Val Thr Ile Glu Pro Ala Val Tyr Tyr Asp
 130 135 140
 Leu Ser Phe Lys Asp Ser Asp Leu Ser Lys Phe Gly Leu Lys Val Gly
 145 150 155 160
 Phe Gly Phe Tyr Phe
 165

<210> 7538
 <211> 354
 <212> PRT
 <213> B.fragilis

<400> 7538
 Ser Met Gly Asn Met Lys Lys Asn Tyr Gly Cys Ile Leu Ala Ala Leu
 1 5 10 15

3900

Ile Leu Leu Thr Ala Cys Gly Gln Lys Lys Glu Asp Ser Val Thr Thr
 20 25 30
 Val Arg Pro Val Lys Thr Ala Arg Val Glu Ser Arg Ser Glu Ile Arg
 35 40 45
 Lys Asp Phe Ser Gly Ile Val Glu Ala Val Asp Tyr Val Lys Leu Ala
 50 55 60
 Phe Arg Val Ser Gly Gln Ile Ile Asn Leu Pro Val Val Glu Gly Gln
 65 70 75 80
 Arg Val Lys Lys Gly Gln Leu Ile Ala Ala Ile Asp Pro Arg Asp Leu
 85 90 95
 Ala Leu Gln Tyr Ala Ala Asp Lys Ser Ala Tyr Glu Thr Ala Ala Ala
 100 105 110
 Gln Val Glu Arg Asn Lys Arg Leu Leu Ala Arg Gln Ala Ile Ser Val
 115 120 125
 Gln Glu Tyr Glu Ile Ser Val Ser Thr Phe Gln Gln Lys Lys Ser Ala
 130 135 140
 Tyr Glu Leu Ser Ser Asn Asn Met Arg Asp Thr Arg Leu Thr Ala Pro
 145 150 155 160
 Phe Asp Gly Ser Ile Glu Lys Arg Leu Val Glu Asn Tyr Gln Arg Val
 165 170 175
 Asn Ser Gly Glu Gly Ile Val Gln Leu Val Asn Thr Lys Lys Leu Arg
 180 185 190
 Ile Lys Phe Thr Ile Pro Asp Ala Tyr Leu Tyr Leu Leu Arg Ser Lys
 195 200 205
 Asp Gln Arg Phe Arg Val Glu Phe Asp Thr Tyr Arg Gly His Ile Phe
 210 215 220
 Asn Ala Lys Leu Glu Glu Tyr Leu Asp Ile Ser Thr Asp Gly Thr Gly
 225 230 235 240
 Ile Pro Val Thr Ile Thr Ile Asp Asp Pro Ala Phe Asp His Ala Leu
 245 250 255
 Tyr Glu Val Lys Pro Gly Phe Thr Cys Ser Ile Arg Phe Ser Ala Asp
 260 265 270
 Val Gly Pro Phe Leu Glu Glu Ser Met Thr Val Val Pro Leu Ser Ala
 275 280 285
 Ile Phe Gly Glu Ser Glu Gly Asn Lys Thr Tyr Val Trp Val Leu Asn
 290 295 300
 Gly Asn Gln Val Asn Arg Glu Val Thr Val Tyr Ser Pro Met Gly
 305 310 315 320
 Asp Ala Gln Ala Phe Ile Ser Lys Gly Leu Lys Ala Gly Glu Thr Val
 325 330 335
 Val Thr Ala Gly Val Thr Gln Leu Val Glu Gly Glu Thr Val Lys Glu
 340 345 350
 Leu Lys

<210> 7539

<211> 773

<212> PRT

<213> B.fragilis

<400> 7539

Lys Ala Met Lys Gln Phe Leu Lys Val Asp Glu Trp Asn Ile Ile Glu
 1 5 10 15
 Glu Gly Phe His Pro Asp Asn Met Arg Ala Ser Glu Ser Ile Phe Ser
 20 25 30
 Leu Gly Asn Gly Arg Phe Gly Gln Arg Gly Asn Phe Glu Glu Thr Tyr
 35 40 45
 Ser Ser Asp Ser Leu Gln Gly Ser Tyr Val Ala Gly Ile Thr Phe Leu
 50 55 60

Asp Arg Thr Arg Val Gly Trp Trp Lys Asn Gly Tyr Pro Arg Phe Phe
 65 70 75 80
 Ser Arg Val Pro Asn Ala Pro Asp Trp Ser Gly Ile Tyr Leu Arg Leu
 85 90 95
 Ile Asp Glu Glu Leu Asp Leu Val His Trp Asp Val Glu Ala Tyr Arg
 100 105 110
 Arg Arg Leu Asp Met Arg Glu Gly Ile Ser Tyr Arg Asp Phe Arg Val
 115 120 125
 Thr Ser Pro Lys Gly His Thr Leu Glu Val His Val Glu His Ile Asn
 130 135 140
 Ser Leu Ala Asn Gln Asn Leu Cys Leu Ile Lys Tyr Ser Val Thr Ser
 145 150 155 160
 Val Asn Tyr Glu Gly Lys Ile Ser Leu Val Pro Phe Leu Asn Gly Asp
 165 170 175
 Val Lys His Glu Asn Ser Asn Phe Asp Glu Lys Met Trp Asn Ile Leu
 180 185 190
 Arg Ala Glu Ala Thr Asn Glu Tyr Ala Tyr Leu Trp Val Gln Thr Lys
 195 200 205
 His Glu Asp Ser Gln Ile Cys Leu Gly Met Thr Tyr Arg Phe Tyr Lys
 210 215 220
 Asn Ser Lys Pro Thr His Ile Ser Pro Ile Lys Ile Glu Lys Glu Lys
 225 230 235 240
 Leu Thr Gly Phe Ser Ala Gly Ala Asp Val Lys Pro Gly Asp Arg Val
 245 250 255
 Thr Leu Glu Lys Tyr Val Ala Ile Leu Ser Ser Leu Gln Cys Asp Arg
 260 265 270
 Gln Glu Leu Val Glu Tyr Ala Val Asp Glu Ala Gln Ala Ala Lys Glu
 275 280 285
 Gln Gly Trp Glu Ala Leu Val Gly Ala His Lys Gln Gln Trp Glu Glu
 290 295 300
 Ile Trp Glu Glu Ser Asp Val Met Ile Glu Gly Asp Pro Ala Ala Gln
 305 310 315 320
 Gln Gly Ile Arg Phe Asn Ile Phe Gln Leu Asn Gln Ser Tyr Arg Gly
 325 330 335
 Asp Asp Ala Arg Leu Asn Ile Ser Pro Lys Gly Phe Thr Gly Glu Lys
 340 345 350
 Tyr Gly Gly Asn Thr Gln Trp Asn Thr Glu Leu Cys Cys Val Pro Tyr
 355 360 365
 Phe Leu Leu Ser Thr Pro Arg Glu Ile Ser Arg Lys Leu Leu Leu Tyr
 370 375 380
 Arg Tyr Asn Gln Leu Pro Lys Ala Ile Glu Asn Ala Arg Lys Leu Gly
 385 390 395 400
 Phe Gly Gly Gly Ala Ala Leu Tyr Pro Met Val Thr Ile His Gly Glu
 405 410 415
 Glu Cys His Asn Glu Trp Glu Ile Thr Phe Glu Glu Ile His Arg Asn
 420 425 430
 Asn Ile Ile Val Tyr Ala Ile Met Gln Phe Ser Arg Val Thr Gly Asn
 435 440 445
 Lys Glu Tyr Ile Ala Tyr Tyr Gly Leu Glu Val Met Ile Ala Ile Ser
 450 455 460
 Arg Phe Trp Ser Gln Arg Val Ser Phe Ser Glu Ala Arg Gln Lys Tyr
 465 470 475 480
 Val Leu Leu Gly Val Thr Gly Pro Asn Glu Tyr Glu Asn Asn Val Asn
 485 490 495
 Asn Asn Trp Tyr Thr Asn Tyr Ser Cys Val Gln Cys Leu Gln Ser Thr
 500 505 510
 Ile Glu Cys Leu Glu Met Val Ala His Glu Tyr Pro Glu Glu Tyr Asn
 515 520 525
 Arg Ile Arg Arg Ser Thr Glu Phe Arg His Ala Glu Glu Thr Ala Arg

530 535 540
 Trp Lys Glu Ile Ile Glu Lys Met Tyr Leu Pro Glu Asp Lys Glu Arg
 545 550 555 560
 Gly Ile Phe Val Gln Asp Asp Gly Tyr Pro Asp Lys Val Leu Gly Thr
 565 570 575
 Val Asp Asp Ile Pro Val Asn Glu Arg Pro Ile Asn Gln His Trp Ser
 580 585 590
 Trp Asp Arg Ile Leu Arg Ser Cys Tyr Ile Lys Gln Ser Asp Val Leu
 595 600 605
 Leu Gly Leu Phe Leu Tyr Tyr Glu His Phe Asp Arg Glu Thr Ile Arg
 610 615 620
 Arg Asn Phe Arg Phe Tyr Glu Pro Arg Thr Val His Glu Ser Ser Leu
 625 630 635 640
 Ser Pro Phe Val His Ala Ile Leu Ala Ala Trp Ile Gly Asp Thr Glu
 645 650 655
 Glu Ala Tyr Arg Leu Phe Leu His Ser Thr Arg Leu Asp Leu Asp Asp
 660 665 670
 Tyr Asn Asn Glu Val His Gln Gly Leu His Val Thr Ser Met Ala Gly
 675 680 685
 Ser Trp Gln Ile Ile Val Arg Gly Phe Ala Gly Met Lys Ile Leu Asp
 690 695 700
 Gly Gln Leu Asp Phe Thr Pro Ile Ile Pro Glu Ala Trp Asp Ser Tyr
 705 710 715 720
 Thr Phe Lys Val Asn Phe Arg Asn Cys Thr Leu Gln Met Lys Val Gly
 725 730 735
 Lys Gln Glu Ile Lys Ile Ser Leu Leu Glu Gly Tyr Glu Leu Asn Ile
 740 745 750
 Arg Ile Ser Glu Val Val Tyr Asn Leu Lys Lys Gly Lys Asp Leu Ile
 755 760 765
 Val Pro Lys Gln Asn
 770

<210> 7540
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 7540
 Gln Ile Lys Leu Cys Ala Leu Phe Ile Phe Arg Ala Ile Leu Trp Tyr
 1 5 10 15
 Glu Trp Trp Glu Met Ile Leu Asp Gln Arg Gln Val Arg Gly Asp Leu
 20 25 30
 Phe Cys His Glu Gly Ile Leu Leu Ser Leu Ala Asp Arg Gly Cys Val
 35 40 45
 Gly Leu Lys Ser Gly Ser Leu Trp Phe Lys Arg Glu Gly Thr Leu Ile
 50 55 60
 Leu Asn Gln Tyr Pro Leu Ser Phe Lys Leu Lys Ser His Ser Arg Tyr
 65 70 75 80
 Ser Cys Phe Trp Ser Thr Phe Cys Leu Ser Ala Val Tyr Phe Tyr Ala
 85 90 95
 Ser

<210> 7541
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 7541

Gly Cys Asp Cys Phe His Phe Pro Gln Gln Lys Pro Pro Thr Pro Ala
 1 5 10 15
 Ala Ile Ile Ile Gln Met Gly Glu Lys Pro Asn Asn Gln Met Ser Arg
 20 25 30
 Ala Glu Thr Thr Gly Ile Gln Arg Val Tyr Arg Leu Thr Leu Ala Asp
 35 40 45
 Phe Ala Met Leu Lys Val Gly Ala Ala Ile Ser Ala Thr Thr Ala Gly
 50 55 60
 Arg Ile Pro Leu Lys Ile Arg Ser Thr Met Gly Leu Ser Leu Lys Leu
 65 70 75 80

<210> 7542

<211> 341

<212> PRT

<213> B.fragilis

<400> 7542

Lys Pro Ile Cys Thr Met Ser Lys Pro Gln Ile Thr Ile Lys Asp Ile
 1 5 10 15
 Ala Arg Glu Leu Gly Val Ser Pro Ser Thr Val Ser Arg Ala Leu Lys
 20 25 30
 Asp Asn Pro Asp Ile Ser Gln Glu Thr Arg Asp Ala Ile His Lys Tyr
 35 40 45
 Ala Arg Glu His Asn Tyr Lys Pro Asn Val Leu Ala Leu Asn Leu Arg
 50 55 60
 Thr Ser Arg Ser Asn Thr Ile Gly Val Ile Ile Pro Gln Leu Val His
 65 70 75 80
 His Phe Phe Ser Cys Val Leu Ser Gly Ile Glu Arg Thr Ala Ala Glu
 85 90 95
 Ala Gly Tyr Asn Ile Leu Val Ala Gln Ser Asn Glu Glu Tyr Glu Arg
 100 105 110
 Glu Val Lys Ile Val His Ser Phe Leu Ala Ala Arg Val Cys Gly Val
 115 120 125
 Ile Thr Ser Leu Ala Lys Asp Thr Ser Arg Tyr Asp His Tyr Gln Glu
 130 135 140
 Leu Leu Asp Asn Asn Ile Pro Ile Val Phe Tyr Asp Arg Ile Cys Thr
 145 150 155 160
 Gly Ile Asn Thr Glu Arg Val Val Val Asp Asp Tyr Ala Gly Ser Phe
 165 170 175
 Ala Ala Val Glu Tyr Met Ile Gln Thr Gly Cys Lys Arg Ile Phe Phe
 180 185 190
 Tyr Ser Ala Ala Pro His Leu Glu Ile Ser Lys Asn Arg Arg Asn Gly
 195 200 205
 Tyr Met Asp Ala Met Lys Lys Tyr Arg Ile Pro Val Asp Gln Ser Met
 210 215 220
 Ile Lys Leu Cys Asp Ser Arg Glu Lys Ala Ile Ala Ile Thr Pro Ala
 225 230 235 240
 Leu Leu Glu Arg Pro Asp His Pro Asp Gly Phe Phe Ala Ile Asn Asp
 245 250 255
 Glu Thr Ala Ser Gly Ile Leu Tyr Ser Cys Lys Leu Thr Gly Arg Lys
 260 265 270
 Val Pro Asp Glu Val Ser Ile Cys Gly Phe Thr Asp Gly Ala Ile Ala
 275 280 285
 Gln Ser Thr Asp Pro Lys Leu Thr Thr Val Glu Gln His Gly Glu Glu
 290 295 300
 Val Gly Lys Ser Thr Ile Arg Leu Leu Ile Asp Lys Leu Glu Gly Asn
 305 310 315 320
 Asp Glu Gly Lys Ser Gly Asn Lys Ile Val Arg Thr Asn Leu Val Val
 325 330 335

Arg Gly Thr Thr Lys
340

<210> 7543
<211> 279
<212> PRT
<213> B.fragilis

<400> 7543

Lys Pro Ile Met Asn Leu Arg Lys Leu Ile Leu Leu Leu Ala Leu Phe
1 5 10 15
Leu Ala Thr Gly Val Gly Ala Gln Ile Gln Gln Gln Ser Pro Tyr Pro
20 25 30
Lys Arg Glu Phe Arg Gly Ala Trp Ile Gln Ala Val Asn Gly Gln Phe
35 40 45
Arg Gly Ile Pro Thr Glu Lys Leu Lys Gln Thr Leu Ile Asp Gln Leu
50 55 60
Asn Ser Leu Gln Gly Ala Gly Ile Asn Ala Ile Ile Phe Gln Val Arg
65 70 75 80
Pro Glu Ala Asp Ala Leu Tyr Ala Ser Gln Leu Glu Pro Trp Ser Arg
85 90 95
Phe Leu Thr Gly Val Gln Gly Gln Ala Pro Ser Pro Tyr Trp Asp Pro
100 105 110
Met Gln Phe Met Ile Asp Glu Cys His Lys Arg Gly Met Glu Phe His
115 120 125
Ala Trp Ile Asn Pro Tyr Arg Val Lys Thr Ser Leu Lys Ser Glu Leu
130 135 140
Ser Ala Asn His Leu Tyr Asn Ile His Pro Glu Trp Phe Val Thr Tyr
145 150 155 160
Asn Asn Gln Leu Phe Phe Asp Pro Ala Leu Pro Glu Ser Arg Arg His
165 170 175
Ile Cys Met Val Val Ala Asp Ile Val Ser Arg Tyr Asp Val Asp Ala
180 185 190
Ile His Met Asp Asp Tyr Phe Tyr Pro Tyr Pro Ala Lys Gly Met Asp
195 200 205
Phe Pro Asp Asp Ala Ser Phe Ala Arg Tyr Gly Gly Gly Phe Thr Asn
210 215 220
Arg Ala Asp Trp Arg Arg Ser Asn Val Asn Ile Leu Ile Gln Lys Ile
225 230 235 240
His Glu Thr Ile Arg Gly Leu Lys Pro Trp Val Lys Phe Gly Ile Ser
245 250 255
Pro Phe Gly Ile Tyr Arg Asn Gly Lys Glu Arg Ser Ala Arg Lys Gln
260 265 270
Asp Gln Arg Pro Ala Glu Leu
275

<210> 7544
<211> 937
<212> PRT
<213> B.fragilis

<400> 7544

Leu Thr Ile Phe Ala Val Gln Val Thr Lys Met Leu Met Thr Asp Ser
1 5 10 15
Lys Tyr Ile Ser Ile Lys Gly Ala Arg Val Asn Asn Leu Lys Asn Ile
20 25 30
Asp Val Asn Ile Pro Arg Asn Lys Leu Val Val Ile Thr Gly Leu Ser
35 40 45
Gly Ser Gly Lys Ser Ser Leu Ala Phe Asp Thr Leu Tyr Ala Glu Gly

50	55	60
Gln Arg Arg Tyr Val	Glu Ser Leu Ser Ser Tyr	Ala Arg Gln Phe Leu
65	70	75
Gly Arg Met Ser Lys	Pro Glu Cys Asp Phe Ile Lys Gly Ile Pro Pro	80
85	90	95
Ala Ile Ala Ile Glu Gln Lys Val Asn Ser Arg Asn Pro Arg Ser Thr		
100	105	110
Val Gly Thr Ser Thr Glu Ile Tyr Glu Tyr Leu Arg Leu Leu Tyr Ala		
115	120	125
Arg Val Gly Lys Thr Tyr Ser Pro Val Ser Gly Glu Glu Val Lys Lys		
130	135	140
His Ser Ile Glu Asp Ile Val Asn Cys Met Leu Ser Tyr Pro Glu Gly		
145	150	155
Thr Arg Tyr Thr Val Leu Thr Gln Ile Tyr Leu His Asp Gly Arg Thr		
165	170	175
Leu Glu Gln Gln Leu Glu Ile Asp Arg Lys Gln Gly Phe Asn Arg Leu		
180	185	190
Glu Val Asn Gly Glu Met Val Arg Ile Asp Glu Tyr Ala Ala Gly Lys		
195	200	205
Glu Asp Val Val Tyr Leu Leu Val Asp Arg Met Thr Ala Ala Lys Ser		
210	215	220
Lys Asp Ala Ile Ser Arg Leu Thr Asp Ser Ala Glu Thr Ala Met Tyr		
225	230	235
Glu Gly Asp Gly Met Cys Met Leu Arg Phe Tyr Gln Pro Asp Gly Thr		
245	250	255
Thr Arg Leu His Thr Phe Ser Thr Lys Phe Glu Ala Asp Gly Met Thr		
260	265	270
Phe Glu Glu Pro Asn Asp Gln Met Phe Ser Phe Asn Ser Pro Ile Gly		
275	280	285
Ala Cys Pro Val Cys Glu Gly Phe Gly Lys Val Ile Gly Ile Asp Glu		
290	295	300
His Leu Val Val Pro Asn Arg Ser Leu Ser Val Tyr Asp Gly Ala Ile		
305	310	315
Val Cys Trp Arg Gly Glu Lys Met Gly Glu Trp Arg Glu Glu Leu Ile		
325	330	335
His Asn Ala Glu Lys Phe Asn Phe Pro Ile Phe Thr Pro Tyr Tyr Glu		
340	345	350
Leu Thr Asp Glu Gln Arg Arg Val Leu Trp Glu Gly Asn Gln Tyr Phe		
355	360	365
His Gly Ile Asn Asp Phe Phe Lys Met Leu Glu Glu Asn Gln Tyr Lys		
370	375	380
Ile Gln Tyr Arg Val Met Leu Ala Arg Tyr Arg Gly Lys Thr Leu Cys		
385	390	395
Pro Lys Cys His Gly Thr Arg Leu Lys Pro Glu Ala Gly Tyr Val Arg		
405	410	415
Val Gly Gly Lys Asn Ile Ser Glu Leu Val Asp Leu Pro Ile Thr Glu		
420	425	430
Leu Gln Lys Phe Phe Asp Ser Leu Thr Leu Asn Glu His Asp Gln Ala		
435	440	445
Val Ala Arg Arg Ile Leu Thr Glu Ile Asn Ser Arg Ile Arg Phe Leu		
450	455	460
Ile Asp Val Gly Leu Gly Tyr Leu Thr Leu Asn Arg Leu Ser Asn Ser		
465	470	475
Leu Ser Gly Gly Glu Ser Gln Arg Ile Asn Leu Ala Thr Ser Leu Gly		
485	490	495
Ser Ser Leu Val Gly Ser Leu Tyr Ile Leu Asp Glu Pro Ser Ile Gly		
500	505	510
Leu His Ser Arg Asp Thr Asp Arg Leu Val His Val Leu Arg Gln Leu		
515	520	525

Gln Gln Leu Gly Asn Thr Val Val Val Val Glu His Asp Glu Glu Ile
 530 535 540
 Ile Arg Ala Ala Asp Tyr Ile Ile Asp Ile Gly Pro Asn Ala Gly Arg
 545 550 555 560
 Leu Gly Gly Gln Val Val Tyr Glu Gly Asp Met Lys Asp Leu Lys Lys
 565 570 575
 Gly Ser Asn Ser Tyr Thr Val Lys Tyr Leu Leu Gly Glu Glu Thr Ile
 580 585 590
 Pro Val Pro Glu His Arg Arg Pro Trp Asn Asn Tyr Ile Glu Ile Lys
 595 600 605
 Gly Ala Arg Glu Asn Asn Leu Lys Gly Val Asp Ala Arg Phe Pro Leu
 610 615 620
 Asn Val Met Thr Val Val Thr Gly Val Ser Gly Ser Gly Lys Ser Thr
 625 630 635 640
 Leu Val Arg Asp Ile Phe Tyr Arg Ala Leu Lys Arg Glu Leu Asp Glu
 645 650 655
 Cys Ser Glu Arg Pro Gly Glu Phe Val Ser Ile Glu Gly Asp Leu Arg
 660 665 670
 Asn Leu Arg Asn Val Glu Phe Val Asp Gln Asn Pro Ile Gly Lys Ser
 675 680 685
 Ser Arg Ser Asn Pro Val Thr Tyr Ile Lys Ala Tyr Asp Glu Ile Arg
 690 695 700
 Lys Leu Trp Ala Asp Gln Pro Leu Ala Lys Gln Met Gly Tyr Thr Ala
 705 710 715 720
 Gly His Phe Ser Phe Asn Asn Glu Gly Gly Arg Cys Glu Glu Cys Lys
 725 730 735
 Gly Asp Gly Thr Ile Thr Val Glu Met Gln Phe Met Ala Asp Leu Val
 740 745 750
 Leu Glu Cys Glu Ser Cys His Gly Lys Arg Phe Lys Ala Asp Thr Leu
 755 760 765
 Glu Val Lys Phe Gln Asp Lys Asn Ile Tyr Asp Val Leu Glu Met Thr
 770 775 780
 Val Asn Gln Ala Ile Glu Phe Phe Thr Glu His Gly Gln Lys Lys Val
 785 790 795 800
 Val Lys Lys Leu Ile Pro Leu Gln Asp Val Gly Leu Gly Tyr Ile Lys
 805 810 815
 Leu Gly Gln Ser Ser Thr Leu Ser Gly Gly Glu Asn Gln Arg Val
 820 825 830
 Lys Leu Ala Tyr Tyr Leu Ser Gln Glu Lys Ala Asp Pro Thr Leu Phe
 835 840 845
 Ile Phe Asp Glu Pro Thr Thr Gly Leu His Phe His Asp Ile Arg Lys
 850 855 860
 Leu Leu Asp Ala Phe Asp Ala Leu Ile Arg Arg Gly His Ser Ile Val
 865 870 875 880
 Ile Ile Glu His Asn Met Asp Val Ile Lys Cys Ala Asp Tyr Val Ile
 885 890 895
 Asp Leu Gly Pro Glu Gly Gly Asp Lys Gly Gly Asn Ile Val Ala Thr
 900 905 910
 Gly Thr Pro Glu Glu Val Ala Ala Cys Ala Ala Ser Tyr Thr Gly Gln
 915 920 925
 Phe Leu Gln Glu Lys Leu Asn His Leu
 930 935

<210> 7545

<211> 256

<212> PRT

<213> B.fragilis

<400> 7545

Glu Arg Gly Ile Ser Ser Ser Pro Val Val Lys Thr Pro Ile Met Phe
 1 5 10 15
 Val Ser Ile Ala Cys Gly Ala Ile Ser Gly Phe His Ala Thr Gln Ser
 20 25 30
 Pro Leu Met Ala Arg Cys Met Thr Ser Glu Arg His Gly Arg Pro Val
 35 40 45
 Phe Tyr Gly Ala Met Ile Thr Glu Gly Ile Val Ala Leu Ile Trp Ala
 50 55 60
 Ala Ala Ala Thr Tyr Phe Tyr Arg Glu His Gly Met Glu Glu Asn Asn
 65 70 75 80
 Ala Ser Val Ile Val Asp Ala Ile Thr Lys Asp Trp Leu Gly Ala Val
 85 90 95
 Gly Gly Val Leu Ala Ile Leu Gly Val Ile Ala Ala Pro Ile Thr Ser
 100 105 110
 Gly Asp Thr Ala Phe Arg Ser Ala Arg Leu Ile Val Ala Asp Phe Leu
 115 120 125
 Lys Leu Glu Gln Lys Ser Met Arg Arg Arg Leu Tyr Ile Cys Val Pro
 130 135 140
 Met Phe Ile Val Ala Ile Gly Leu Leu Leu Tyr Ser Leu Arg Asp Lys
 145 150 155 160
 Asp Gly Phe Asp Met Ile Trp Arg Tyr Phe Ala Trp Ala Asn Gln Thr
 165 170 175
 Leu Ser Val Phe Thr Leu Trp Ala Ile Thr Val Tyr Leu Ala Arg Ala
 180 185 190
 Arg Lys Trp Tyr Gly Leu Thr Leu Val Pro Ala Leu Phe Met Thr Ala
 195 200 205
 Val Cys Ser Thr Tyr Ile Cys Ile Ala Pro Glu Gly Leu Gly Leu Ser
 210 215 220
 His Trp Val Ser Tyr Val Thr Gly Gly Leu Cys Thr Leu Ile Gly Ala
 225 230 235 240
 Val Trp Phe Ile Val Trp Lys Lys Gly Ile Gly Tyr Ser Tyr Lys Lys
 245 250 255

<210> 7546

<211> 184

<212> PRT

<213> B.fragilis

<400> 7546

Asn Ile Met Ile Tyr Leu Gln Leu Phe Tyr Thr Phe Phe Lys Ile Gly
 1 5 10 15
 Leu Phe Gly Phe Gly Gly Gly Tyr Ala Met Leu Ser Met Ile Gln Gly
 20 25 30
 Glu Val Val Thr Arg Tyr Asp Trp Val Ser Thr Gln Glu Phe Thr Asp
 35 40 45
 Ile Val Ala Ile Ser Gln Ser Thr Pro Gly Pro Ile Gly Ile Asn Ala
 50 55 60
 Ala Thr Tyr Val Gly Phe Thr Ala Thr Gly Ser Ile Trp Gly Ser Val
 65 70 75 80
 Ile Ala Thr Phe Ala Val Val Leu Pro Ser Phe Ile Leu Met Leu Thr
 85 90 95
 Ile Ser Lys Phe Phe Leu Lys Tyr Gln Lys His Pro Ala Val Glu Ala
 100 105 110
 Val Phe Cys Gly Leu Arg Pro Ala Val Val Gly Leu Leu Ala Ser Ala
 115 120 125
 Ala Leu Val Leu Met Asn Val Glu Asn Phe Gly Ser Pro Thr Asp Asp
 130 135 140
 Thr Tyr Thr Phe Val Ile Ser Ile Ile Ile Phe Leu Val Ala Phe Ile
 145 150 155 160

Gly Thr Lys Lys Tyr His Ala Asn Pro Ile Leu Met Ile Ile Ala Cys
 165 170 175
 Gly Ile Ala Gly Leu Ile Leu Tyr
 180

<210> 7547
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 7547
 Lys Tyr Met Met Lys Asn Lys Leu Ile Leu Leu Phe Ala Leu Gly Leu
 1 5 10 15
 Cys Ala Gln Val Gln Ala Gln Val Pro His Leu Ser Arg Glu Thr Tyr
 20 25 30
 Arg Glu Arg Val Glu Ala Tyr Ser Gln Val Leu Lys Gln Gln His Leu
 35 40 45
 Lys Ser Met Ala Ser Thr Asp Ala Arg Lys Ile Ala Phe Thr Gly Phe
 50 55 60
 Leu Pro Lys Val Asp Ile Ser Ala Glu Gly Thr Leu Asn Leu Lys Glu
 65 70 75 80
 Met Asp Ser Trp Asp Gly Pro Ala Gly Gln Tyr Arg Asn His Thr Tyr
 85 90 95
 Gln Gly Ile Phe Val Val Ser Gln Pro Leu Tyr Thr Gly Gly Ala Leu
 100 105 110
 Gln Ala Gln Asn Arg Ile Ala Lys Ala Asp Glu Lys Leu Asp Gln Leu
 115 120 125
 Ser Glu Glu Leu Thr Arg Asp Gln Ile His Tyr Gln Ser Asp Ala Phe
 130 135 140
 Tyr Trp Asn Ala Ser Ser Ala Arg Ala Met Leu Asn Ala Ser Ala Gln
 145 150 155 160
 Tyr Gln Glu Ile Val Glu Lys Gln Tyr Glu Ile Ile Gln Asp Arg Phe
 165 170 175
 Lys Asp Gly Ala Ile Ser Arg Thr Asp Leu Leu Met Ile Ser Thr Arg
 180 185 190
 Arg Lys Glu Ala Glu Leu Gln Tyr Ile Asn Ala Arg Gln Asn Tyr Thr
 195 200 205
 Leu Ala Leu Gln Lys Leu Asn Ile Leu Met Gly Glu Glu Pro Asn Ala
 210 215 220
 Pro Val Asp Ser Leu Cys Ala Ile Gly Val Val Cys Pro Pro Val Thr
 225 230 235 240
 Leu Leu Pro Leu Asp Asp Val Leu Gln Arg Arg Ala Asp Phe Ala Ser
 245 250 255
 Thr Glu Val Asn Ile Gln Lys Ser Glu Ala Gln Arg Lys Ala Ala Leu
 260 265 270
 Ser Gln Tyr Asn Pro Gln Val Ser Met Tyr Val Thr Gly Gly Trp Ala
 275 280 285
 Thr Ala Ser Pro Asn Met Gly Tyr Asp Val Lys Phe Thr Pro Ile Val
 290 295 300
 Gly Met Ser Val Asn Ile Pro Val Leu Arg Trp Gly Ala Arg Phe Lys
 305 310 315 320
 Thr Asn Arg Gln Gln Lys Ala Tyr Thr Gly Ile Gln Lys Leu Gln Gln
 325 330 335
 Ser Tyr Val Val Asp Gln Ile Asn Gln Glu Leu Ala Ala Ala Leu Thr
 340 345 350
 Lys Leu Lys Glu Thr Glu Glu Gln Val Lys Thr Ala Glu Glu Asn Lys
 355 360 365
 Glu Leu Ala Glu Glu Asn Leu Asp Leu Ile Thr Phe Ser Tyr Asn Glu
 370 375 380

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0

Gly Lys Ala Ser Met Val Asp Val Leu Ser Ala Gln Leu Ser Trp Thr
 385 390 395 400
 Gln Ala His Thr Ser Leu Ile Asn Ala Tyr Leu Ala Glu Lys Met Ala
 405 410 415
 Val Ala Glu Tyr Arg Lys Val Ile Ser Glu
 420 425

<210> 7548
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 7548
 Ile Thr Leu Val Leu Ser Asn Glu Tyr Leu Ala Lys Phe Met Ile Val
 1 5 10 15
 Tyr Gly Phe Glu Cys Thr Thr Asp Tyr Thr Asp Phe His Arg Leu Met
 20 25 30
 Ile Tyr Ile Ile Asp Asn Lys Ile Lys Lys Ser Val Leu Ile Arg Val
 35 40 45
 Ile Cys Gly Glu Ile Asn Tyr Cys Val Glu Arg Ala Leu Leu Phe Gln
 50 55 60
 Phe Leu Tyr Arg Phe Thr Phe Tyr Gln Leu Cys His Thr Gly Cys His
 65 70 75 80
 His Ser Leu Ala Cys Phe Gln Ser Phe
 85

<210> 7549
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 7549
 Ser Ser Val Leu Val Arg Leu Val Ser Thr Val Thr Glu Lys Asn Asp
 1 5 10 15
 Pro Leu Gly Ser Lys Thr Asn Gly Leu Gln Asn Tyr Asp Asp Leu Tyr
 20 25 30
 Ala Asp Val Leu Leu Trp Ala Arg Asn Gly Trp Val Asp Tyr Asn Ile
 35 40 45
 Pro Gln Ile Tyr Trp Gln Ile Gly His Pro Ala Ala Asp Tyr Glu Thr
 50 55 60
 Leu Val Lys Trp Trp Ala Lys Asn Thr Glu Asn Arg Pro Leu Phe Ile
 65 70 75 80
 Gly Gln Ser Val Met Asn Thr Ile Gln Asn Ala Asp Pro Lys Asn Pro
 85 90 95
 Ser Met Asn Gln Leu Pro Arg Lys Met Ala Leu Glu Arg Ala Tyr Gln
 100 105 110
 Thr Ile Gly Gly Ser Cys Gln Trp Pro Ala Ser Ala Val Val Glu Asn
 115 120 125
 Ala Gly Lys Tyr Arg Asp Ala Leu Val Gln Glu Tyr His Lys Tyr Pro
 130 135 140
 Ala Leu Val Pro Val Phe Asp Phe Met Asp Asp Lys Ala Pro Gly Lys
 145 150 155 160
 Val Arg Lys Val Lys Lys Val Trp Thr Glu Asp Gly Tyr Met Leu Phe
 165 170 175
 Trp Thr Ala Pro Lys Ala Lys Asp Glu Met Asp Arg Ala Val Gln Tyr
 180 185 190
 Val Val Tyr Arg Phe Asp Asp Lys Glu Lys Val Asn Ile Asp Asp Ala
 195 200 205
 Ser His Ile Val Ala Val Thr Arg Asn Asn Phe Tyr Lys Leu Pro Tyr

3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 3997 3998 3999

210 215 220
 Lys Asp Gly Lys Asn Lys Tyr Arg Tyr Val Val Thr Ala Leu Asp Arg
 225 230 235 240
 Leu His Asn Glu Ser Lys Ser Val Ser Lys Lys Val Lys Leu
 245 250

<210> 7550
 <211> 406
 <212> PRT
 <213> B.fragilis

<400> 7550

Pro His Arg Ala Ile Gly Val Arg Glu Gly Thr Ser Tyr Ile Ile Phe
 1 5 10 15
 Thr Met Lys Ile His Ile Leu Phe Gly Met Ile Gly Phe Ile Leu Leu
 20 25 30
 Ser Gly Cys Asn Arg Ala Ala Glu Lys Asn Pro Arg Phe Tyr Asp Ala
 35 40 45
 Gly Val Ser Arg Glu Leu Ala Gly His Arg Lys Ala Gln Ile Lys Asn
 50 55 60
 Leu Lys Tyr Glu Leu Ser Phe Asn Ile Pro Arg Gln Lys Glu Ala Ala
 65 70 75 80
 Ile Glu Gly Asp Ile Thr Leu Arg Phe Asp Leu Ala Ser Arg Gln Glu
 85 90 95
 Val Leu Ile Asp Phe Arg Glu Glu Arg Glu Lys Ile Lys Glu Val Ile
 100 105 110
 Ala Asn Gly Val Pro Val Asp Lys Val Arg Phe Glu Asn Glu His Ile
 115 120 125
 Ile Leu Pro Ala Ser Ser Thr Val Glu Gly Ala Asn Gly Ile Arg Ile
 130 135 140
 Arg Phe Thr Ala Gly Asn Gln Ser Leu Asn Arg Asn Asp Glu Tyr Leu
 145 150 155 160
 Tyr Thr Leu Leu Val Pro Asp Arg Ala Arg Thr Val Phe Pro Cys Phe
 165 170 175
 Glu Gln Pro Asn Leu Lys Ala Glu Phe Thr Leu Gln Leu Glu Leu Pro
 180 185 190
 Ala Asp Trp Lys Ala Val Ser Asn Thr Tyr Ile Arg Ser Glu Thr Val
 195 200 205
 Thr Asp Asp Arg Lys Thr Val Cys Phe Ala Pro Thr Glu Pro Leu Ser
 210 215 220
 Thr Tyr Leu Phe Ser Phe Val Ala Gly Lys Leu Glu Arg Arg Glu Tyr
 225 230 235 240
 Thr Arg Asp Gly Arg Thr Ile Ala Ala Tyr Tyr Arg Glu Thr Asp Pro
 245 250 255
 Lys Lys Val Ala Gln Leu Asp Ile Val Phe Gly Gln Val Met Ala Ser
 260 265 270
 Leu His Trp Leu Glu Glu Tyr Thr Gly Ile Ala Tyr Pro Phe Ala Lys
 275 280 285
 Tyr Asp Phe Ile Val Leu Pro Gly Phe Gln Phe Gly Gly Met Glu His
 290 295 300
 Thr Gly Ala Thr Leu Tyr Asn Asp Asn Gly Ile Ile Leu Ser Glu His
 305 310 315 320
 Pro Thr Pro Asp Glu Leu Asn Arg Ala Glu Leu Ile Ala His Glu
 325 330 335
 Thr Ser His Met Trp Val Gly Asp Ser Gly Thr Met Asp Trp Phe Asp
 340 345 350
 Asp Gly Trp Thr Lys Glu Val Phe Ala Asn Tyr Ile Ala Ala Arg Ile
 355 360 365
 Val Glu Pro Leu Phe Pro Glu Ile Asn His Thr Gln Asn Lys Leu Lys

370 375 380
 Thr Phe Thr Ala Ala Ile Thr Phe Arg Gly Ser Tyr Tyr Gly Asp Glu
 385 390 395 400
 Cys His Pro Ser Thr Ala
 405

<210> 7551

<211> 522

<212> PRT

<213> B.fragilis

<400> 7551

Leu Pro Met Lys Arg Arg Thr Cys Gly Leu Ala Ile Arg Val Pro Trp
 1 5 10 15
 Ile Gly Leu Thr Thr Asp Gly Leu Lys Lys Phe Leu Pro Thr Ile Leu
 20 25 30
 Gln Pro Gly Leu Ser Asn Pro Cys Phe Arg Arg Ser Ile Thr Pro Arg
 35 40 45
 Ile Ser Ser Arg Pro Leu Arg Gln Leu Ser Leu Ser Glu Asp Arg Thr
 50 55 60
 Met Gly Thr Asn Ala Ile Arg Gln Pro Leu Asp Asn Leu Arg Asn Ala
 65 70 75 80
 Gly Leu Ile Tyr Gly Gln Ile Ile Tyr Asn Lys Ala Pro Val Met Met
 85 90 95
 Glu Lys Leu Val Asp Lys Met Gly Glu Ala Asn Phe Arg Ser Gly Ile
 100 105 110
 Gln Glu Tyr Leu Lys Thr Tyr Ser Tyr Gly Asn Ala Thr Trp Asp Asp
 115 120 125
 Leu Ile Arg Ile Leu Asp Ser Lys Thr Thr Glu Asp Leu Ala Ala Phe
 130 135 140
 Ser Asp Val Trp Val Asn Arg Lys Gly Met Pro Thr Leu Thr Phe Arg
 145 150 155 160
 Thr Asp Gly Gln Glu Leu Glu Ile Arg Gln His Asp Pro Tyr Asn Arg
 165 170 175
 Gly Leu Leu Trp Pro Gln Arg Phe Ala Val Thr Leu Cys Gly Glu Arg
 180 185 190
 Asp Ser Val Ile Arg Val Asn Met Thr Asp Thr Leu Phe Arg Met Gln
 195 200 205
 Leu Pro Phe Val Pro Ser Arg Val Leu Pro Asn Thr Asp Gly Arg Gly
 210 215 220
 Tyr Gly Val Phe Val Pro Asp Glu Pro Ala Leu His Trp Leu Ala Ala
 225 230 235 240
 His Trp Trp Glu Ile Glu Asp Asp Thr Ala Arg Gln Ser Leu Leu Met
 245 250 255
 Val Leu Tyr Glu Asn Tyr Leu Ala Lys His Ile Ser Ala Asp Asp Trp
 260 265 270
 Val Asn Ser Leu Ile Thr Gly Leu Pro Ala Glu Lys Asn Ala Leu Val
 275 280 285
 Ala Ser Thr Ala Ser Gly Tyr Leu Ala Asn Val Met Trp Glu Ile Ala
 290 295 300
 Pro Ala Asn Arg Ala Glu Val Glu Ala Arg Ile Tyr Thr Met Thr Gln
 305 310 315 320
 Asn His Pro Leu Pro Ser Cys Arg Ile Gln Leu Met Arg Leu Phe Met
 325 330 335
 Gln Asn Ala Ile Ser Glu Pro Met Val Lys Lys Leu Tyr Ile Leu Trp
 340 345 350
 Gln Gln Gln Ser Asp Lys His Leu Asn Arg Gln Asp Tyr Thr Thr Leu
 355 360 365
 Ala Tyr Glu Leu Ala Ile Arg Met Pro Leu Glu Ser Glu Gln Ile Leu

370 375 380
 Arg Thr Gln Arg Ala Arg Ile Asp Asp Pro Asp Arg Leu Arg Gln Phe
 385 390 395 400
 Asp Phe Ile Ser Arg Ala Ala Val Ser Asp Thr Ala Arg Leu Asp Thr
 405 410 415
 Leu Phe Asn Ser Leu Leu Ala Ala Glu Asn Arg Arg Ile Glu Pro Trp
 420 425 430
 Thr Thr Ala Val Ile Arg Tyr Leu Asn His Pro Leu Arg Glu Asp Gln
 435 440 445
 Ser Val Lys Tyr Ile Arg Pro Gly Leu Glu Val Leu Glu Glu Val Gln
 450 455 460
 Arg Thr Gly Asp Ile Phe Phe Pro Lys Asn Trp Ala Ala Ala Leu Leu
 465 470 475 480
 Gly Asn His Leu Ser Ser Ser Ala Tyr Glu Glu Val Val Arg Phe Leu
 485 490 495
 Asn Glu Arg Pro Asp Tyr Ser Pro Leu Leu Lys Asn Lys Ile Leu Gln
 500 505 510
 Ala Ala Tyr Pro Leu Tyr Arg Ala Asn Asn
 515 520

<210> 7552

<211> 415

<212> PRT

<213> B.fragilis

<400> 7552

Ser Arg Met Lys Glu Phe Val Ile Ser Glu Ala Lys Val Glu Thr Ala
 1 5 10 15
 Val Leu Val Gly Leu Ile Thr Gln Thr Gln Asp Glu Arg Lys Thr Asn
 20 25 30
 Glu Tyr Leu Asp Glu Leu Ala Phe Leu Ala Glu Thr Ala Gly Ala Glu
 35 40 45
 Val Val Lys Arg Phe Thr Gln Lys Leu Pro Thr Ala Asn Ser Val Thr
 50 55 60
 Tyr Val Gly Lys Gly Lys Leu Glu Glu Ile Lys Glu Tyr Ile Arg Ile
 65 70 75 80
 Glu Ala Glu Glu Asp Arg Glu Val Gly Met Val Ile Phe Asp Asp Glu
 85 90 95
 Leu Ser Ala Lys Gln Ile Arg Asn Ile Glu Ala Glu Leu Lys Val Lys
 100 105 110
 Ile Leu Asp Arg Thr Ser Leu Ile Leu Asp Ile Phe Ala Met Arg Ala
 115 120 125
 Gln Thr Ala Asn Ala Lys Thr Gln Val Glu Leu Ala Gln Tyr Lys Tyr
 130 135 140
 Met Leu Pro Arg Leu Gln Arg Leu Trp Thr His Leu Glu Arg Gln Gly
 145 150 155 160
 Gly Gly Ser Gly Ser Gly Lys Gly Gly Ser Val Gly Leu Arg Gly Pro
 165 170 175
 Gly Glu Thr Gln Leu Glu Met Asp Arg Arg Ile Ile Leu Asn Arg Met
 180 185 190
 Ser Leu Leu Lys Glu Arg Leu Ala Glu Ile Asp Lys Gln Lys Ser Thr
 195 200 205
 Gln Arg Lys Asn Arg Gly Arg Met Ile Arg Val Ala Leu Val Gly Tyr
 210 215 220
 Thr Asn Val Gly Lys Ser Thr Met Met Asn Leu Leu Ala Lys Ser Glu
 225 230 235 240
 Val Phe Ala Glu Asn Lys Leu Phe Ala Thr Leu Asp Thr Thr Val Arg
 245 250 255
 Lys Val Ile Ile Asp Asn Leu Pro Phe Leu Leu Ser Asp Thr Val Gly


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<210> 7553
<211> 470
<212> PRT
<213> B.fragilis
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Gln 1	Ile	Lys	Glu	Thr 5	Thr	Met	Lys	Lys	Ile 10	Ile	Leu	Phe	Ser	Thr 15	Leu
Cys	Ala	Ser	Leu 20	Phe	Leu	Gly	Ser	Cys 25	Ser	Ser	Ser	Phe	Leu 30	Asp	Gln
Glu	Pro	Pro 35	Leu	Tyr	Val	Asn 40	Glu	Asn	Asp	Ile	Phe	Thr 45	Ser	Pro	Thr
Arg 50	Ile	Glu	Ala	Thr	Leu	Asn 55	Gly	Leu	Tyr	Ala	Ala	Ile 60	Lys	Asn	Thr
Gly 65	Thr	Lys	Ser	Leu 70	Met	Gly	Gly	Lys	Ser	Tyr 75	Leu	Val	Phe	Asp	Asn
Arg	Gly	Asp	Asp 85	Val	Ile	Asn	Ile	Ser	Asn 90	Asn	Leu	Val	Thr 95	Leu	Phe
Asn	Thr	Tyr 100	Asn	Met	Asn	Val	Gly	Ile 105	Thr	Asp	Ala	Glu 110	Asn	Ala	Asp
Thr	Trp	Thr 115	Tyr	Ala	Tyr	Leu	Ala 120	Ile	Asn	Lys	Val	Asn 125	Thr	Phe	Leu
Gln	Ser 130	Leu	Glu	Gly	Ala	Arg 135	Glu	Val	Ala	Gly	Glu 140	Asn	Tyr	Asp	Arg
Tyr 145	Val	Gln	Glu	Ala 150	Lys	Phe	Val	Arg	Ala	Leu 155	Ala	Tyr	Tyr	Tyr	Leu
Asn	Asn	Leu	Tyr 165	Pro	Thr	Pro	Tyr	Ser 170	Val	Asn	Pro	Asp 175	Ala	Lys	Ser
Val	Pro	Leu 180	Arg	Leu	Thr	Ala	Glu 185	Ala	Gly	Thr	Glu	Asn 190	Asn	Asn	Met
Pro	Arg 195	Ser	Thr	Val	Lys	Gln	Ile 200	Tyr	Glu	His	Ile 205	Leu	Ser	Asp	Leu
Glu 210	Asn	Ile	Ser	Ala	Leu	Asp 215	Thr	Glu	Val	Asn 220	Thr	Tyr	Thr	Gly	Val
Thr 225	His	Ala	Thr	Gln 230	Ala	Ala	Asn	Met	Leu 235	Lys	Met	Arg	Val	Tyr	240
Met	Ala	Met	Asn 245	Glu	Trp	Asp	Lys	Ala 250	Ile	Thr	Ala	Gly 255	Glu	Leu	Val
Thr	Gly	Tyr	Ser	Leu	Pro	Glu	Asp	Val	Thr	Leu	Ile	Tyr	Lys	Ala	Pro

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<210> 7554
<211> 468
<212> PRT
<213> B.fragilis
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<400> 7554
Phe Val Val Cys Asn Lys Arg Ser Met Gly Lys Thr Tyr Arg Arg Leu
1          5          10          15
Thr Glu Asp Glu Val Leu His Leu Lys Ser Gln Ser Cys Leu Ala Asp
          20          25          30
Asp Trp Asn Lys Val Ala Val Ala Glu Glu Phe Thr Thr Glu Phe Val
          35          40          45
His His Thr Arg Phe Ser Gly Glu Val Lys Leu Gly Val Phe His Ser
          50          55          60
Asp Phe Ile Leu Pro Gly Gly Ile Lys Lys His Ser Gly Leu Arg His
65          70          75          80
Val Thr Leu His Asn Val Thr Val Gly Asp Asn Cys Cys Ile Glu Asn
          85          90          95
Ile Gln Asn Tyr Ile Ala Asn Tyr Glu Ile Gly Asn Asn Thr Phe Ile
          100          105          110
Glu Asn Val Asp Ile Ile Leu Val Asp Gly Leu Thr Gln Phe Gly Asn
          115          120          125
Gly Val Glu Thr Ala Val Leu Asn Glu Thr Gly Gly Arg Glu Val Leu
          130          135          140
Ile Asn Asp Lys Leu Ser Ala His Gln Ala Tyr Ile Leu Ala Leu Tyr
145          150          155          160
Arg His Arg Pro Glu Leu Ile Ser Arg Met Lys Glu Ile Thr Asp Tyr
          165          170          175
Tyr Ser Asn Lys His Ala Ser Ala Val Gly Thr Ile Gly Asn His Val
          180          185          190
Met Ile Leu Asn Thr Gly Ser Ile Lys Asn Val Arg Ile Gly Asp Phe

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<210> 7555
<211> 227
<212> PRT
<213> B.fragilis
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<400> 7555															
Arg	Gly	Cys	Arg	Ala	Arg	Leu	Arg	Lys	Ser	Thr	Leu	Ile	Arg	Val	Pro
1				5					10					15	
Lys	Ile	Lys	Asn	Ser	Ser	Leu	Asn	Ser	Gly	Ile	Arg	Tyr	Tyr	Glu	Ile
			20					25					30		
Ala	Ile	His	Lys	Phe	Leu	Gly	Asn	Ser	Ile	Ile	Lys	Arg	Leu	Glu	Gly
		35					40					45			
Ile	Asn	Phe	Lys	Asp	Asn	Glu	Glu	Ile	Arg	Arg	Arg	Leu	Lys	Pro	Asp
	50					55				60					
Thr	Glu	Ile	Gly	Val	Gly	Glu	Trp	Val	Asp	Ile	Ala	Gly	Leu	Ile	Ala
65					70					75					80
Pro	Lys	Ser	Glu	Val	Glu	Lys	Leu	Ile	Asp	Gly	Ile	Glu	Ser	Gly	Glu
				85					90					95	
Ile	Asn	Arg	Leu	Lys	Ser	Met	Asn	Ala	Cys	Phe	Ala	Ala	Met	His	Asp
			100					105					110		
Asn	Tyr	Tyr	Thr	Tyr	Glu	Trp	Thr	Trp	Ala	Tyr	His	Lys	Ile	Gln	Glu
		115					120					125			
Phe	Tyr	Gly	Leu	Asn	Pro	Glu	Thr	Ile	Thr	Ala	Lys	Asp	Ile	Ile	Ala

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      130              135              140
Ile Val Arg Ala Trp Arg Glu Ala Val Val Gly Leu Asp Arg Met Val
145              150              155              160
Tyr Asp Asp Ala Arg Lys Glu Phe Ser Leu Ser Ser Met Thr Gly Phe
      165              170              175
Gly Ala Asp Gly Ser Arg Asp Glu Met Lys Leu Asp Phe Gly Gln Val
      180              185              190
Arg Gly Asp Phe Glu Ser Asn Pro Phe Val Thr Ala Val Leu Lys His
      195              200              205
Ile Asp Asp Lys Thr Ala Leu Gly Glu Glu Leu Ile Asn Arg Ile Gly
      210              215              220
Gln Leu Ala
225

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<210> 7556
<211> 982
<212> PRT
<213> B.fragilis

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<400> 7556
Tyr Asn Cys Ser Ser Ala Lys Thr Leu Gln Ile Ser Tyr Ile Gly Met
1      5      10      15
Gln Thr Ala Glu Val Ala Ile Ala Pro Val Ile Lys Val Ile Leu Lys
      20      25      30
Thr Asp Ser Lys Ala Leu Asp Glu Val Val Val Val Ala Tyr Gly Thr
      35      40      45
Gln Ser Ala Arg Thr Val Thr Ala Ser Val Ser Thr Val Arg Ala Asp
      50      55      60
Ala Leu Lys Asp Val Pro Ser Val Ser Phe Asp Gln Met Leu Gln Gly
      65      70      75      80
Arg Ala Ser Gly Val Ser Ile Thr Thr Pro Ser Ala Gly Val Gly Gln
      85      90      95
Ala Pro Ile Val Arg Val Arg Gly Val Asn Ser Ile Thr Ser Gly Thr
      100      105      110
Ser Pro Leu Tyr Val Val Asp Gly Val Pro Ile Glu Ser Gly Asn Leu
      115      120      125
Ser Tyr Leu Ala Asn Ala Asn Ala Leu Ala Asp Ile Asn Pro Ala Asp
      130      135      140
Ile Val Ser Met Asp Val Leu Lys Asp Ala Ala Ala Ala Leu Tyr
      145      150      155      160
Gly Ser Arg Ala Ala Asn Gly Val Ile Leu Ile Thr Thr Lys Gln Gly
      165      170      175
Gln Ser Gly Lys Val Lys Val Ser Tyr Asp Gly Phe Val Gly Phe Ser
      180      185      190
Asn Ala Thr Asp Phe Tyr Glu Met Met Asn Ala Gln Glu Tyr Val Asp
      195      200      205
Phe Lys Asn Leu Ala Val Lys Asn Arg Tyr Gly Thr Asp Glu Leu Ser
      210      215      220
Leu Thr Thr Gly Tyr Val Ser Pro Tyr Gly Asn Lys Ala Phe Asn Met
      225      230      235      240
Met Lys Asp Ala Asn Gly Asn Tyr Val Asp Thr Asp Trp Lys Asp Ala
      245      250      255
Ala Phe Gln Asn Gly Leu Ser Gln Ser His Ser Val Ala Val Ser Gly
      260      265      270
Gly Ser Asp Lys Val Arg Tyr Tyr Leu Ser Gly Asn Tyr Thr Thr Gln
      275      280      285
Glu Gly Ile Val Lys Gly Asp Lys Tyr Asp Arg Leu Gly Val Lys Ala
      290      295      300
Asn Ile Asn Val Gln Ala Thr Asp Trp Leu Lys Val Gly Met Asn Thr

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305					310					315				320
Asn	Val	Thr	Thr	Gly	Thr	Thr	Ser	Tyr	Val	Asp	Ala	Ala	Arg	Arg
				325					330					335
Ser	Asn	Phe	Ala	Val	Gly	Gly	Phe	Pro	Arg	Leu	Ala	Leu	Ile	Asn
			340					345					350	
Pro	Asn	Leu	Pro	Met	Tyr	Asn	Glu	Asp	Gly	Thr	Pro	Tyr	Tyr	Leu
		355					360					365		
Gln	Gly	Leu	Gly	Tyr	Gly	Gly	Asn	Thr	Val	Phe	Ser	Thr	Phe	Ser
	370					375					380			Asn
Pro	Ala	Ala	Ile	Leu	Ser	Leu	Gly	Asn	Gly	Leu	Ser	Ser	Asp	Val
385					390					395				400
Arg	Phe	Ile	Gly	Val	Phe	Tyr	Ala	Glu	Ala	Thr	Pro	Leu	Lys	Gly
			405						410					415
Ser	Leu	Lys	Thr	Gln	Tyr	Gly	Val	Asp	Tyr	Ala	Arg	Ile	Glu	Glu
			420					425				430		
Arg	Phe	Trp	Ser	Pro	Leu	His	Gly	Asp	Gly	Val	Asn	Ser	Lys	Gly
		435					440					445		Leu
Ala	Asn	Ala	Tyr	Asn	Thr	Lys	Asn	Asn	Arg	Trp	Thr	Trp	Thr	Asn
	450					455					460			Thr
Ala	Thr	Tyr	Asn	Phe	Ser	Leu	Gly	Gln	Asn	Asn	Phe	Asn	Leu	Leu
465					470					475				480
Gly	Thr	Glu	Ala	Ser	Glu	Arg	Asn	Asn	Ser	Arg	Trp	Thr	Ala	Gln
			485						490					495
Lys	Asp	Leu	Gln	Asp	Asp	Lys	Phe	Val	Val	Phe	Gln	Gly	Pro	Phe
		500						505					510	Gly
Ser	Ala	Thr	Ala	Gly	Gly	Ser	Leu	Ser	Asn	Asn	Thr	Met	Val	Ser
		515					520					525		Tyr
Phe	Gly	Arg	Ile	Asn	Tyr	Asp	Tyr	Ala	Ser	Lys	Tyr	Ile	Val	Ser
	530					535					540			Leu
Asn	Tyr	Arg	Arg	Asp	Gly	Tyr	Ser	Ala	Leu	Ser	Glu	Lys	Asn	Arg
545					550					555				Trp
Gly	Asn	Phe	Gly	Gly	Val	Ser	Ala	Ala	Trp	Arg	Val	Ser	Glu	Glu
			565						570					575
Phe	Phe	Lys	Pro	Leu	Arg	Asn	Val	Val	Asp	Asp	Leu	Lys	Ile	Lys
		580						585					590	Gly
Ser	Tyr	Gly	Val	Val	Gly	Asn	Thr	Asp	Ile	Tyr	Asp	Tyr	Ala	Ser
	595					600					605			Lys
Ser	Phe	Tyr	Ser	Ser	Tyr	Asn	Tyr	Gly	Ile	Asn	Gly	Thr	Tyr	Gly
	610					615					620			Leu
Ala	Gln	Ile	Ala	Asp	Pro	Asn	Leu	Lys	Trp	Glu	Ser	Ser	Glu	Lys
625					630					635				Tyr
Ser	Ile	Gly	Phe	Asn	Ala	Arg	Leu	Leu	Asp	Arg	Ile	Ser	Val	Asp
			645						650					655
Asp	Tyr	Tyr	Tyr	Thr	Lys	Ser	Ser	Asp	Leu	Ile	Leu	Asp	Val	Pro
			660					665					670	Gln
Ser	Pro	Ser	Lys	Gly	Ile	Pro	Gly	Asn	Ile	Ile	Thr	Thr	Asn	Ala
		675					680						685	Gly
Lys	Met	Lys	Asn	Ser	Gly	Ile	Glu	Leu	Thr	Val	Ser	Ala	Asp	Val
	690					695					700			Ile
Arg	Asn	Ser	Gln	Phe	Thr	Trp	Glu	Thr	Ser	Phe	Asn	Ile	Thr	Thr
705					710					715				Asn
Lys	Asn	Lys	Val	Ile	Ser	Leu	Ala	Asp	Gly	Val	Glu	Asn	Ile	Leu
			725						730					Lys
Gly	Asp	Asn	Gly	Gly	Leu	Glu	Ile	Thr	Asn	Ile	Thr	Val	Pro	Gly
			740					745					750	Lys
Ser	Ile	Gly	Arg	Leu	Tyr	Leu	Tyr	Pro	Thr	Ala	Gly	Val	Asp	Pro
		755					760					765		Lys
Ser	Gly	Arg	Arg	Val	Phe	Ile	Thr	Pro	Glu	Gly	Asp	Arg	Thr	Leu
	770					775					780			Leu

Met Phe Glu Lys Gly Gly Trp Phe Tyr Glu Asp Gly Ile Glu Tyr Ala
 785 790 795 800
 Gly Glu Phe Glu Pro Val Asp Cys Gly Asn Thr Leu Pro Thr Trp Tyr
 805 810 815
 Gly Gly Trp Thr Asn Asn Phe Lys Tyr Lys Gly Phe Asp Leu Ser Leu
 820 825 830
 Phe Phe Gln Phe Ser Gly Gly Asn Lys Ile Tyr Asn Gly Thr Lys Ala
 835 840 845
 Ser Val Ser Asp Met Arg Tyr Trp Asn Asn Ser Lys Asp Val Tyr Lys
 850 855 860
 Lys Tyr Trp Thr Pro Glu Arg Thr His Ala Glu Tyr Pro Met Pro Ile
 865 870 875 880
 Tyr Gly Asp Asn Tyr Ser Asn Gly Ser Ala Leu Pro Ile Ser Asp Leu
 885 890 895
 Val Glu Arg Gly Asp Tyr Leu Arg Leu Lys Asn Val Ser Leu Gly Tyr
 900 905 910
 Thr Phe Asn Thr Lys Asn Trp Ser Lys Ala Val Gly Ile Ser Ala Leu
 915 920 925
 Arg Leu Tyr Val Gln Ala Gln Asn Leu Phe Val Ile Thr Gly Tyr Ser
 930 935 940
 Gly Met Asp Pro Glu Thr Leu Thr Asn Val Glu Ser Ala Thr Leu Ser
 945 950 955 960
 Gly Gly Thr Asp Lys Asn Thr Leu Pro Gln Ala Arg Thr Tyr Thr Ile
 965 970 975
 Gly Val Asn Leu Thr Phe
 980

<210> 7557

<211> 433

<212> PRT

<213> B.fragilis

<400> 7557

His Tyr Val Ile Lys Leu Arg Asp Met Ala Thr Pro Pro Phe Lys Tyr
 1 5 10 15
 Gln Pro Met Phe Glu His Gly Glu Asp Lys Thr Glu Tyr Tyr Leu Leu
 20 25 30
 Thr Lys Asp Tyr Val Ser Val Ser Glu Phe Glu Gly Thr Pro Val Leu
 35 40 45
 Lys Val Gln Lys Glu Gly Leu Thr Ala Met Ala Asn Thr Ala Phe Arg
 50 55 60
 Asp Val Ser Phe Met Leu Arg Arg Ala His Asn Glu Gln Val Ala Lys
 65 70 75 80
 Ile Leu Ser Asp Pro Glu Ala Ser Glu Asn Asp Lys Tyr Val Ala Leu
 85 90 95
 Thr Phe Leu Arg Asn Ala Glu Val Ala Ala Lys Gly Ile Leu Pro Phe
 100 105 110
 Cys Gln Asp Thr Gly Thr Ala Ile Ile His Gly Glu Lys Gly Gln Gln
 115 120 125
 Val Trp Thr Gly Tyr Cys Asp Glu Glu Ala Leu Ser Leu Gly Val Tyr
 130 135 140
 Lys Thr Tyr Thr Glu Glu Asn Leu Arg Tyr Ser Gln Asn Ala Pro Leu
 145 150 155 160
 Asn Met Tyr Asp Glu Val Asn Thr Lys Cys Asn Leu Pro Ala Gln Ile
 165 170 175
 Asp Ile Glu Ala Thr Glu Gly Met Glu Tyr Lys Phe Leu Cys Val Thr
 180 185 190
 Lys Gly Gly Gly Ser Ala Asn Lys Thr Tyr Leu Tyr Gln Glu Thr Lys
 195 200 205

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<210> 7558
<211> 178
<212> PRT
<213> B.fragilis
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Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
1				5						10					15	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				20					25						30	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				35					40						45	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				50					55						60	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
65					70					75						80
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				85						90						95
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				100						105						110
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				115						120						125
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				130						135						140
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
145					150						155					160
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				165						170						175

Lys Met

<210> 7559
 <211> 179
 <212> PRT
 <213> B.fragilis

<400> 7559
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 20 25 30
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 35 40 45
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 50 55 60
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 65 70 75 80
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 85 90 95
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 100 105 110
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 115 120 125
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 130 135 140
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 145 150 155 160
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Ser Leu His Ala
 165 170 175
 Lys Cys Lys

<210> 7560
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 <212> PRT
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<400> 7560
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
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 20 25 30
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 35 40 45
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 50 55 60
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 65 70 75 80
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 85 90 95
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 100 105 110
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 115 120 125
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 130 135 140
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys

145 150 155 160
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Asn Pro Tyr Met Gln
 165 170 175
 Asn Val Asn Asp Leu Ile Gly Cys Leu Leu Asn Thr
 180 185

<210> 7561
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7561
 Ser Asn Asn Met Asp Asn Arg Thr Glu Gln Tyr Ser Leu Arg Glu Leu
 1 5 10 15
 Leu Glu Ser Ile Thr Glu Asn Ile Lys Thr Lys Arg Leu Ala Asp Val
 20 25 30
 Phe Arg Phe Ile Ser Phe His Pro Gly Glu Met Tyr Gly Pro His Gln
 35 40 45
 His Leu Arg Ile Glu Ile Asn Tyr Val Lys Lys Gly Ser Cys Ile Leu
 50 55 60
 His Pro Asp His Glu Ser Ile Ser Leu His His Gly Ala Gly Arg Ile
 65 70 75 80
 Ser Gly Ala Phe Val Lys Lys Lys Lys Ser Thr Asn Gly Gly Ser Asp
 85 90 95
 Ile Asn Lys Lys Asn Arg Ala Pro
 100

<210> 7562
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 7562
 Ser Gly Lys Ser Lys Asp Met Asp Gln Leu Lys Thr Ile Lys Glu Leu
 1 5 10 15
 Ile Asn Gln Gly Asp Ile Glu Asn Ala Leu Gln Ala Leu Glu Phe
 20 25 30
 Leu Gln Thr Glu Pro Val Gly Lys Asp Glu Ala Tyr Tyr Leu Met Gly
 35 40 45
 Asn Ala Tyr Arg Lys Leu Gly Asp Trp Gln Lys Ala Leu Asn Asn Tyr
 50 55 60
 Gln Ser Ala Ile Glu Leu Asn Pro Asp Ser Pro Ala Leu Gln Ala Arg
 65 70 75 80
 Lys Met Val Met Asp Ile Leu Asn Phe Tyr Asn Lys Asp Met Tyr Asn
 85 90 95
 Gln

<210> 7563
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 7563
 Glu Thr Arg Ser Leu Lys Arg Asn Lys Met Glu His Lys Tyr Leu Phe
 1 5 10 15
 Val Ala Val Asp Ala Ala Leu Lys Ala Gly Glu Glu Ile Leu Ser Ile
 20 25 30
 Tyr Thr Asp Pro Ala Ser Asp Phe Glu Ile Glu Arg Lys Ala Asp His

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<210> 7564
<211> 159
<212> PRT
<213> B.fragilis
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<400>	7564														
Leu	Phe	Ser	Pro	Gln	Gly	Gly	Gly	Ser	Ser	Pro	Leu	Ser	Ser	Pro	Gln
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Gln	Ser	Gly	Ser	Leu	Pro	Lys	Pro	Glu	Glu	Val	Ile	Lys	Asp	Ala	Thr
			20					25					30		
Val	Lys	Lys	Ala	Leu	Glu	Glu	Ala	Trp	Ser	Asp	Met	Leu	Lys	Arg	Ser
		35					40					45			
Thr	Glu	Val	Gln	Arg	Gln	Glu	Val	Gly	Phe	Trp	Ile	Tyr	Tyr	Asp	Pro
	50					55					60				
Val	Lys	Lys	Gln	Tyr	Tyr	Ile	Gly	Lys	Lys	Arg	Tyr	Gly	Met	Ala	Val
65					70					75					80
Lys	Asn	Asp	Gly	Lys	Ala	Arg	Gly	Asn	Ile	Ser	Leu	Gly	Asp	Lys	Ser
			85						90					95	
Pro	Ser	Ile	Asn	Gly	Val	Pro	Ala	Thr	Ala	Lys	Val	Val	Ala	Ser	Phe
			100					105					110		
His	Thr	His	Thr	Pro	Met	Thr	Glu	Ile	Lys	Gly	Lys	Lys	Arg	Lys	Ala
		115					120					125			
Gly	Pro	Ser	Lys	Glu	Asp	Lys	Glu	Asn	Ala	Asp	Lys	Asn	Lys	Ile	Pro
	130					135					140				
Ile	Asp	Ile	Leu	Val	Phe	Arg	Cys	Ile	Leu	Glu	Ile	Val	Ile	Tyr	
145					150					155					

<210> 7565
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 <212> PRT
 <213> B.fragilis

<400> 7565

Leu	Phe	Ala	Phe	Met	Thr	Phe	Glu	Ile	Ala	Phe	Val	Leu	Leu	Ser	Leu
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Leu	Gly	Met	Val	Ile	Ala	Leu	Ile	Leu	Asp	Lys	Met	Arg	Pro	Gly	Met
			20					25					30		
Ile	Leu	Phe	Ser	Val	Val	Val	Leu	Phe	Leu	Cys	Ala	Gly	Ile	Leu	Thr
		35					40					45			
Pro	Lys	Glu	Met	Leu	Glu	Gly	Phe	Ser	Asn	Lys	Gly	Met	Ile	Thr	Val
	50					55					60				
Ala	Leu	Leu	Phe	Leu	Val	Ser	Glu	Gly	Ile	Arg	Gln	Ser	Gly	Ala	Leu
65					70					75					80
Gly	Gln	Val	Val	Lys	Lys	Leu	Leu	Pro	Gln	Lys	Arg	Thr	Thr	Val	Phe
				85					90					95	
Arg	Ala	Gln	Leu	Arg	Leu	Leu	Pro	Ala	Val	Ala	Phe	Ile	Ser	Ala	Phe
			100					105					110		
Leu	Asn	Asn	Thr	Pro	Val	Val	Val	Ile	Phe	Ala	Pro	Ile	Ile	Lys	Arg
	115						120					125			
Trp	Ala	Arg	Thr	Val	His	Leu	Pro	Ala	Thr	Lys	Phe	Leu	Ile	Pro	Leu
	130					135					140				
Ser	Tyr	Val	Thr	Ile	Leu	Gly	Gly	Ile	Cys	Thr	Leu	Ile	Gly	Thr	Ser
145					150					155					160
Thr	Asn	Leu	Val	Val	His	Gly	Met	Ile	Leu	Glu	Ser	Gly	His	Glu	Gly
				165					170					175	
Phe	Thr	Met	Phe	Glu	Leu	Gly	Lys	Val	Gly	Leu	Phe	Ile	Ala	Ile	Ala
			180						185				190		
Gly	Ile	Ile	Tyr	Leu	Phe	Ala	Phe	Ser	Lys	Lys	Leu	Leu	Pro	Asp	Ala
	195						200					205			
Arg	Pro	Asp	Thr	Ala	Val	Pro	Asp	Glu	Glu	Val	Glu	Glu	Gly	Asp	Lys
	210					215					220				
Leu	His	Arg	Val	Glu	Ala	Val	Leu	Gly	Ala	Arg	Phe	Pro	Gly	Ile	Asn
225					230					235					240
Lys	Thr	Leu	Gly	Glu	Phe	Asn	Phe	Lys	Arg	His	Tyr	Gly	Ala	Glu	Val
			245						250					255	
Lys	Glu	Ile	Lys	Lys	Arg	Asn	Gly	Gln	Arg	Phe	Ile	Asn	Asn	Leu	Glu
			260					265					270		
Glu	Val	Ile	Leu	Arg	Glu	Gly	Asp	Thr	Leu	Val	Val	Met	Ala	Asp	Asp
	275						280					285			
Thr	Phe	Ile	Pro	Thr	Trp	Gly	Glu	Ser	Ser	Val	Phe	Val	Leu	Leu	Ala
	290					295					300				
Asn	Gly	Asn	Asp	Asn	Glu	Pro	Ile	Pro	Gly	Lys	Gly	Lys	Arg	Trp	Phe
305					310					315					320
Ala	Leu	Ile	Leu	Leu	Ile	Leu	Met	Ile	Ala	Gly	Ala	Thr	Ile	Gly	Glu
			325						330					335	
Leu	Pro	Val	Val	Lys	Glu	Met	Phe	Pro	Asp	Met	Lys	Leu	Asp	Met	Phe
			340					345					350		
Phe	Phe	Val	Ser	Val	Thr	Thr	Ile	Met	Ala	Trp	Thr	Lys	Ile	Phe	
	355						360				365				
Pro	Ala	Arg	Lys	Tyr	Thr	Lys	Tyr	Ile	Ser	Trp	Asp	Ile	Leu	Ile	Thr
	370					375					380				
Ile	Ala	Cys	Ala	Phe	Ala	Ile	Ser	Lys	Ala	Met	Val	Asn	Ser	Gly	Val
385					390					395					400
Ala	Asp	Lys	Val	Ala	Gly	Phe	Ile	Ile	Gly	Met	Ser	His	Asp	Tyr	Gly
				405					410					415	
Pro	His	Val	Leu	Leu	Ala	Val	Leu	Phe	Ile	Ile	Thr	Asn	Leu	Phe	Thr

420 425 430
 Glu Leu Ile Thr Asn Asn Ala Ala Ala Leu Ala Phe Pro Leu Ala
 435 440 445
 Leu Ser Leu Ser Val Gln Leu Gly Val Asp Pro Thr Pro Phe Phe Val
 450 455 460
 Val Ile Cys Met Ala Ala Ser Ala Ser Phe Ser Thr Pro Ile Gly Tyr
 465 470 475 480
 Gln Thr Asn Leu Ile Val Gln Gly Ile Gly Asn Tyr Lys Phe Met Asp
 485 490 495
 Phe Val Arg Ile Gly Leu Pro Leu Asn Leu Ile Thr Phe Leu Ile Ser
 500 505 510
 Ile Phe Leu Ile Pro Leu Ile Trp Pro Phe
 515 520

<210> 7566
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 7566
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 Lys Cys Tyr Arg Leu Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp
 20 25 30
 Leu Asp Leu Trp Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn
 35 40 45
 Asp Tyr Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg
 50 55 60
 Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp
 65 70 75 80
 Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu
 85 90 95
 Leu Thr Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu
 100 105 110
 Asp Thr Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe
 115 120 125
 Val Phe Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg
 130 135 140
 Gln Tyr Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro
 145 150 155 160
 Phe Lys Thr Glu Phe Gly
 165

<210> 7567
 <211> 272
 <212> PRT
 <213> B.fragilis

<400> 7567
 Arg Met Tyr Thr Val Asn Leu Lys Arg Ile Phe Ile Val Ser Leu Phe
 1 5 10 15
 Ile Ala Ile Pro Phe Met Leu Ser Ala Gln Leu Thr Tyr Gly Thr Thr
 20 25 30
 Gly Leu Leu His Ala Pro Ser Ala Glu Met Gln Lys Asp Lys Thr Val
 35 40 45
 Met Leu Gly Ala Asn Phe Met Asn Lys Glu Ile Thr Pro Pro Thr Trp
 50 55 60
 Tyr Tyr His Thr Tyr Asn Tyr Tyr Leu Asn Val Thr Ile Leu Pro Trp
 65 70 75 80

Met Glu Val Ala Tyr Thr Cys Thr Leu Phe Lys Ala Glu Ala Leu Gly
85 90 95
Leu Lys Pro Tyr Gly Tyr Ser Gly Phe Thr Asn Gln Asp Arg Tyr Phe
100 105 110
Ser Leu Arg Leu Arg Ala Leu Lys Glu Gly Gln Phe Trp Lys Tyr Met
115 120 125
Pro Ala Val Val Val Gly Thr Ser Asp Pro Phe Thr Ser Ser Gly Asn
130 135 140
Gly Val Val Ala Pro Thr Glu Gly Asn Gly Tyr Phe Ser Arg Phe Tyr
145 150 155 160
Ile Ala Ala Thr Arg His Val Gln Leu Gly Arg Glu Thr Val Gly Val
165 170 175
His Leu Ser Tyr Leu Tyr Asn Lys Arg Ile Glu Tyr Lys Leu Asn Gly
180 185 190
Ile Ala Ala Gly Ile Ser Tyr Asn Pro Ser Phe His Pro Gln Leu Arg
195 200 205
Leu Ile Ala Glu Tyr Asp Ser Lys Asp Phe Ala Leu Gly Ala Thr Tyr
210 215 220
Leu Leu Phe Asn His Leu His Ala Gln Val Glu Leu Gln Arg Met Lys
225 230 235 240
Tyr Phe Thr Gly Gly Leu Thr Phe Gln Phe Arg Leu Ser Gly Lys Asp
245 250 255
Gly Met Lys Lys Gln Lys Arg Asn Lys Glu Leu Lys Gln Lys Met Lys
260 265 270

<210> 7568

<211> 391

<212> PRT

<213> B.fragilis

<400> 7568

Leu Phe Asn Thr Lys Thr Ile Met Asp Ile Glu His Val Arg Ser Arg
1 5 10 15
Phe Ile Lys His Phe Asp Gly Thr Thr Gly Phe Val Tyr Ala Ser Pro
20 25 30
Gly Arg Ile Asn Leu Ile Gly Glu His Thr Asp Tyr Asn Gly Gly Phe
35 40 45
Val Phe Pro Gly Ala Ile Asp Lys Gly Met Ile Ala Glu Ile Lys Pro
50 55 60
Asn Gly Thr Asp Lys Val Asn Ala Tyr Ser Ile Asp Leu Lys Asp Tyr
65 70 75 80
Val Thr Phe Gly Leu Asn Glu Glu Asp Ala Pro Arg Ala Ser Trp Ala
85 90 95
Arg Tyr Ile Phe Gly Val Cys Arg Glu Met Ile Lys Arg Gly Val Asp
100 105 110
Val Lys Gly Phe Asn Thr Ala Phe Ser Gly Asp Val Pro Leu Gly Ala
115 120 125
Gly Met Ser Ser Ser Ala Ala Leu Glu Ser Thr Tyr Ala Phe Ala Leu
130 135 140
Asn Asp Leu Phe Gly Glu Asn Lys Ile Asp Lys Phe Glu Leu Ala Lys
145 150 155 160
Ile Gly Gln Ala Thr Glu His Asn Tyr Cys Gly Val Asn Cys Gly Ile
165 170 175
Met Asp Gln Phe Ala Ser Val Phe Gly Lys Glu Gly Ser Leu Ile Arg
180 185 190
Leu Asp Cys Arg Ser Leu Glu Tyr Gln Tyr Phe Pro Phe Lys Pro Glu
195 200 205
Gly Tyr Arg Leu Val Leu Leu Asp Ser Val Val Lys His Glu Leu Ala
210 215 220

Ser Ser Ala Tyr Asn Lys Arg Arg Gln Ser Cys Glu Ala Ala Val Ala
 225 230 235 240
 Ala Ile Gln Lys Lys His Pro His Val Glu Phe Leu Arg Asp Cys Thr
 245 250 255
 Met Asp Met Leu Ala Glu Ala Lys Ala Asp Ile Ser Glu Glu Asp Tyr
 260 265 270
 Met Arg Ala Glu Tyr Val Ile Glu Glu Ile Gln Arg Val Leu Asp Val
 275 280 285
 Cys Asp Ala Leu Glu Arg Gly Asp Tyr Glu Thr Val Gly Gln Lys Met
 290 295 300
 Tyr Glu Thr His His Gly Met Ser Lys Leu Tyr Glu Val Ser Cys Glu
 305 310 315 320
 Glu Leu Asp Phe Leu Asn Asp Cys Ala Lys Glu Cys Gly Val Thr Gly
 325 330 335
 Ser Arg Val Met Gly Gly Gly Phe Gly Gly Cys Thr Ile Asn Leu Val
 340 345 350
 Lys Asp Glu Leu Tyr Asp Asn Phe Ile Glu Lys Ala Lys Glu Ser Phe
 355 360 365
 Lys Ala Lys Phe Gly Arg Ser Pro Lys Val Tyr Asp Val Val Ile Ser
 370 375 380
 Asp Gly Ser Arg Arg Leu Val
 385 390

<210> 7569

<211> 376

<212> PRT

<213> B.fragilis

<400> 7569

Lys Gln Lys Thr Met Lys Ser Lys Leu Val Ile Leu Ser Leu Leu Leu
 1 5 10 15
 Ala Gly Ala Thr Ala Ala Thr Ala Gln Thr Lys Glu Thr Phe Tyr Ser
 20 25 30
 Glu Ser Phe Lys Asp Asn Ile Phe Val Ser Val Gly Val Gly Ala Gln
 35 40 45
 Gly Cys Val Asn Pro Asp Asn Phe Asp Tyr Gly Phe Gly Lys Ala Ile
 50 55 60
 Thr Pro Leu Ile Asn Val Ser Val Gly Lys Leu Phe Asn Pro Val Trp
 65 70 75 80
 Gly Ile Arg Gly Gln Val Ala Gly Ala Trp Thr Thr Leu Tyr Ser Asn
 85 90 95
 Tyr Gly Gln Pro Ala Asp Thr Tyr Ile Lys Ser Lys Asn Lys His Tyr
 100 105 110
 Phe Thr Met Arg Ala Asp Gly Met Phe Asn Leu Ser Asn Ala Ile Gly
 115 120 125
 Gly Tyr Asn Pro Asp Arg Leu Phe Thr Val Ser Val Phe Ala Gly Pro
 130 135 140
 Gly Leu Thr Phe Ala Lys Ala Tyr Gly Asp Gln Asp Lys Val Asn Ala
 145 150 155 160
 Leu Ile Asn Gly Ser Val Gly Leu Ala Gly Gln Phe Asn Ile Asn Lys
 165 170 175
 Tyr Leu Asp Ile Asn Ile Glu Ala Arg Gly Glu Val Ser Pro Ser Pro
 180 185 190
 Phe Gly Asn Ile Ser Ser Ala His Thr Asp Gly Ala Val Ser Leu Thr
 195 200 205
 Ala Gly Val Thr Tyr Thr Phe Gly Gly Lys Arg Phe Val Ser Cys Gly
 210 215 220
 Ser Gln Val Asp Gln Asn Ala Ile Asn Glu Glu Leu Asn Arg Tyr Arg
 225 230 235 240

Ser Glu Leu Ala Lys Ala Gln Ser Asp Leu Ala Asp Ala Lys Asn Ala
 245 250 255
 Leu Ala Asn Val Lys Pro Val Thr Lys Glu Val Val Lys Glu Ile Glu
 260 265 270
 Val Ala Gly Pro Arg Ala Ile Phe Phe Gln Ile Gly Lys Ser Lys Ile
 275 280 285
 Asp Asp Tyr Gly Met Val Asn Ile Gln Leu Ala Ala Lys Ile Leu Lys
 290 295 300
 Ala Asn Pro Asp Lys Lys Tyr Lys Val Ala Gly Tyr Ala Asp Lys Ala
 305 310 315 320
 Thr Gly Ser Ala Lys Trp Asn Gln Lys Leu Ser Glu Ala Arg Ala Gln
 325 330 335
 Ala Val Tyr Asp Ala Leu Ile Lys Glu Gly Val Ser Lys Asp Gln Leu
 340 345 350
 Glu Leu Val Gly Phe Gly Gly Thr Ala Asn Met Phe Gly Lys Asn Phe
 355 360 365
 Leu Asn Arg Val Val Ile Leu Glu
 370 375

<210> 7570

<211> 280

<212> PRT

<213> B.fragilis

<400> 7570

Thr Asn Leu Ala Ala Met Lys Ser Asn Trp Lys Pro Lys Tyr Leu Lys
 1 5 10 15
 Tyr Val Val Leu Gly Leu Ile Ser Ala Leu Val Val Thr Cys Trp Pro
 20 25 30
 Arg Lys Glu Lys Pro Gln Gly His Pro Arg Asp Tyr Ala Glu Ile Lys
 35 40 45
 Glu Ser Gly Ile Leu His Ala Ala Thr Glu Tyr Asn Ser Ile Ser Phe
 50 55 60
 Tyr Val Asp Gly Asp Thr Val Ser Gly Phe His Tyr Glu Leu Ile Glu
 65 70 75 80
 Ala Phe Ala Arg Asp Lys Gly Leu Gln Val Gln Val Ser Pro Val Met
 85 90 95
 Ser Phe Asn Gln Arg Leu Glu Gly Leu Ala Asp Gly Thr Tyr Asp Val
 100 105 110
 Val Ala Tyr Gly Ile Pro Ala Thr Ser Glu Leu Lys Asp Ser Leu Leu
 115 120 125
 Leu Thr Ser Pro Ile Ile Leu Ser Lys Gln Val Leu Val Gln Arg Lys
 130 135 140
 Val Gly Glu Asn Asp Ser Leu Ala Ile Arg Ser Gln Leu Asp Leu Ala
 145 150 155 160
 Gly Lys Thr Leu Asn Val Val Lys Gly Ser Pro Ser Ile Leu Arg Ile
 165 170 175
 Arg Asn Leu Ser Asn Glu Ile Gly Asp Thr Ile Tyr Val Asn Glu Ile
 180 185 190
 Glu Lys Tyr Gly Ser Glu Gln Leu Ile Ala Met Val Ala His Gly Asp
 195 200 205
 Ile Asp Tyr Ala Val Cys Asp Glu Gly Ile Ala Arg Met Ala Val Asp
 210 215 220
 Ser Leu Pro Gln Leu Asp Ile Asn Thr Ala Ile Ser Phe Thr Gln Phe
 225 230 235 240
 Tyr Ser Trp Gly Val Ser Lys Gln Ser Pro Ala Leu Leu Asp Ser Leu
 245 250 255
 Asn Thr Trp Leu Ser Asp Phe Arg Lys Lys Gly Glu Tyr Gln Ser Val
 260 265 270

Tyr Arg Lys Tyr Tyr Gly Lys Gln
 275 280

<210> 7571
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 7571
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Leu
 65 70 75 80
 Val Ser Ser Tyr Pro Ser Tyr Met Gln Leu
 85 90

<210> 7572
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7572
 Lys Asn Leu Phe Gly Asn Phe Gly Ser Asp Gly Cys Cys Leu Pro Val
 1 5 10 15
 Lys Lys Val Ser Cys Glu Gly Cys Leu Leu Phe Cys Phe Thr Thr Trp
 20 25 30
 Val Asp Thr Leu Phe Ile Asp Asn Ile Lys Thr Gly Ser Gln Asn Ile
 35 40 45
 Met Tyr Leu Cys Gly Met Thr Asn Thr Leu Arg Ser Asp Leu Val Leu
 50 55 60

<210> 7573
 <211> 364
 <212> PRT
 <213> B.fragilis

<400> 7573
 Ile Phe Asn Phe Ile Glu Met Lys Met Lys Ser Lys Phe Phe Gly Asn
 1 5 10 15
 Gly Ala Lys Leu Ala Leu Ala Val Leu Ala Val Cys Gly Thr Leu Phe
 20 25 30
 Thr Ser Cys Tyr Glu Lys Ala Glu Val Asp Gln Ala Thr Lys Pro Ala
 35 40 45
 Glu Ala Lys Tyr Tyr Ile Ala Gly Thr Ile Thr Asp Ala Thr Thr Gly
 50 55 60
 Gln Glu Leu Thr Thr Ala Lys Val Thr Leu Gly Asp Lys Ser Val Thr
 65 70 75 80
 Ser Ser Phe Asn Glu Gln Val Asn Tyr Lys Ala Glu Gly Tyr Ala Leu
 85 90 95
 Val Val Ser Ala Asp Gly Tyr Tyr Pro Val Lys Arg Gln Val Tyr Leu
 100 105 110
 Asn Gln Val Ser Asp Gly Gln Thr Ser Val Ala Thr Val Asn Val Ala
 115 120 125

Leu Val Ser Val Glu Ala Ala Val Ile Pro Pro Val Val Pro Pro Thr
 130 135 140
 Asp Pro Glu Thr Asp Ile Asn Glu Gly Glu Ala Thr Lys Val Ala Asp
 145 150 155 160
 Lys Ala Val Glu Val Ala Lys Pro Ser Glu Ser Thr Val Thr Asp Met
 165 170 175
 Leu Ala Gly Thr Thr Ala Thr Pro Glu Glu Lys Lys Ala Leu Asp Glu
 180 185 190
 Thr Leu Glu Met Ala Gly Gly Met Lys Val Gly Glu Thr Thr Pro Glu
 195 200 205
 Val Leu Ala Asp Gly Ser Ile Leu Ala Ile Thr Pro Val Lys Phe Thr
 210 215 220
 Asn Pro Ile Gln Asp Ala Pro Ala Met Val Pro Tyr Phe Tyr Asn Glu
 225 230 235 240
 Gly Cys Glu Leu Thr Gly Asp Val Lys Glu Val Ala Ala Pro Val Thr
 245 250 255
 Arg Ala Asp Gly Ala Val Ala Ala Asp Ile Gln Lys Ala Phe Leu Ser
 260 265 270
 Asn Ala Ala Lys Ala Leu Asn Met Asn Ala Gly Phe Val Gln Lys Ile
 275 280 285
 Gly Tyr Thr Arg Ile Ser Val Leu Asn Gly Tyr Ser Ile Leu Gly Tyr
 290 295 300
 Thr Ile Lys Gly Gln Leu Val Ser Lys Lys Leu Thr Phe Leu Ile Ser
 305 310 315 320
 Gly Lys Tyr Tyr Glu Gly Ile Val Ser Tyr Gln Lys Ser Val Met Ile
 325 330 335
 Tyr Pro Asn Tyr Tyr Ser His Asp Ser His Asp Ser His
 340 345 350
 Gly Phe Asn Pro Asn Ala Gly Gly Gly Ser Asn Asp
 355 360

<210> 7574

<211> 522

<212> PRT

<213> B.fragilis

<400> 7574

Ile Phe Asn Phe Ile Glu Met Lys Met Lys Ser Lys Leu Phe Gly Asn
 1 5 10 15
 Gly Ala Lys Leu Ala Leu Thr Leu Leu Ala Met Cys Gly Met Phe Ala
 20 25 30
 Ser Cys Tyr Glu Lys Asp Glu Ile Asp Val Pro Lys Val Thr Asp Pro
 35 40 45
 Thr Ala Thr Thr Tyr Gln Val Ala Gly Ile Val Thr Asp Ala Glu Ser
 50 55 60
 Asn Ala Val Met Asp Gly Val Thr Val Thr Asn Val Thr Asn Ser Lys
 65 70 75 80
 Ser Met Thr Thr Ala Ala Asp Gly Lys Tyr Val Leu Glu Ala Lys Val
 85 90 95
 Gly Glu Thr Asn Val Val Thr Phe Ala Lys Ser Gly Tyr Lys Thr Val
 100 105 110
 Thr Ser Ser Val Phe Val Thr Lys Gln Glu Asn Gly Ser Ile Val Ala
 115 120 125
 Tyr Thr Ile Asp Ala Lys Met Glu Lys Gly Lys Glu Thr Lys Pro Thr
 130 135 140
 Lys Asp Val Glu Tyr Gln Ile Glu Gly Ser Val Phe Asp Ala Glu Ser
 145 150 155 160
 Gly Glu Pro Val Ala Ile Lys Thr Ala Thr Met Pro Gly Ile Leu Thr
 165 170 175

Ala Thr Ile Gln Asn Gly Asn Glu Phe Thr Met Ser Asn Val Gly Leu
 180 185 190
 Gly Gln His Thr Ile Tyr Ile Thr Ala Asp Gly Tyr Lys Pro Ala Thr
 195 200 205
 Ala Asp Val Val Ile Ser Glu Val Ala Gly Pro Glu Gly Glu Gly Ile
 210 215 220
 Phe Ile Ala Lys Thr Ser Val Thr Val Ala Met Gln Lys Lys Glu Val
 225 230 235 240
 Glu Val Ala Pro Lys Tyr Tyr Leu Ala Gly Asn Ile Tyr Asn Gln Asp
 245 250 255
 Gly Gly Met Val Thr Lys Ala Glu Val Thr Leu Asn Met Ser Gly Tyr
 260 265 270
 Glu Val Thr Thr Thr Ala Ser Asn Gly Phe Tyr Lys Phe Glu Ile Pro
 275 280 285
 Ala Asp Lys Val Lys Gly Leu Thr Lys Ala Thr Val Thr Ile Arg His
 290 295 300
 Asn Ser Tyr Lys Ile Tyr Val Tyr Thr Ala Phe Ile Ala Pro Val Asp
 305 310 315 320
 Asn Gly Gln Val Ser Asn Thr Thr Val Asn Val Thr Leu Ile Leu Lys
 325 330 335
 Pro Asp Thr Glu Lys Pro Asn Asp Asp Asp Asn Val Phe Ile Gly Gly
 340 345 350
 Asn Val Glu Ile Glu Val Pro Thr Glu Asn Ala Val Glu Ala Ala Pro
 355 360 365
 Glu Lys Ala Glu Gly Glu Lys Val Pro Ser Lys Ser Ala Val Glu Glu
 370 375 380
 Ser Ile Asn Lys Val Leu Glu Ala Ala Gly Ser Asp Ile Lys Ile Thr
 385 390 395 400
 Pro Ala Gln Ala Glu Gln Val Val Asn Thr Met Glu Lys Tyr Val Ala
 405 410 415
 Asn Gly Thr Leu Thr Glu Ile Asp Lys Val Ala Val Leu Pro Ile Glu
 420 425 430
 Lys Glu Thr Thr Phe Lys Leu Glu Ser Lys Val Ile Asp Thr Asn Asn
 435 440 445
 Asp Lys Glu Glu Thr Val Ile Asp Glu Ile Val Leu Arg Ala Asn Thr
 450 455 460
 Ile Ile Ile Phe Thr Ser Gly Val Ala Ser Thr Leu Asn Ile Ser Arg
 465 470 475 480
 Thr Asp Glu Val Lys Glu Gly Ala Phe Cys Arg Glu Tyr Asp Gly Thr
 485 490 495
 Pro Thr Gly Thr Ser Phe Arg Asn Ser Asp Gly Ser Glu Ile Tyr Ser
 500 505 510
 Cys Cys Cys Arg Ser Ser Arg Arg Asn Ser
 515 520

<210> 7575

<211> 63

<212> PRT

<213> B.fragilis

<400> 7575

Ser Asn Asn Tyr Ser Thr Met Asn Pro Asp Lys Ile Arg Asn Val Leu
 1 5 10 15
 Asn Ile Leu Phe Met Ile Leu Ala Leu Ala Ala Ile Ile Thr Tyr Phe
 20 25 30
 Val Ala Lys Asp Asp Phe Lys Val Phe Ile Tyr Val Cys Gly Ala Ala
 35 40 45
 Ile Phe Val Lys Leu Met Glu Phe Phe Ile Arg Phe Thr Asn Arg
 50 55 60

<210> 7576
 <211> 131
 <212> PRT
 <213> B.fragilis

<400> 7576
 Leu Asn Glu Gln Asp Gln Asn Arg Ala Ile Met Phe Thr Asp Asp Lys
 1 5 10 15
 Ser Ile Glu Asn Ile Gln Gln Leu Phe Ala Glu Phe Lys Lys Phe Leu
 20 25 30
 Val Leu Gln Lys Glu Tyr Thr Lys Leu Glu Leu Thr Glu Lys Leu Thr
 35 40 45
 Ile Leu Leu Ser Thr Leu Ile Met Ile Leu Val Leu Thr Ile Leu Gly
 50 55 60
 Met Val Ala Leu Phe Tyr Leu Leu Phe Ala Leu Ala Tyr Ile Leu Glu
 65 70 75 80
 Pro Leu Val Gly Gly Leu Met Val Ser Phe Gly Ile Ile Ala Gly Ile
 85 90 95
 Asn Val Leu Leu Ile Ala Ile Ile Tyr Phe Phe Arg Arg Gln Leu Ile
 100 105 110
 Ile Ser Pro Met Val Asn Phe Leu Ala Asn Leu Phe Leu Asn Asp Ser
 115 120 125
 Asn Lys Lys
 130

<210> 7577
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 7577
 Ile Ser Leu Gln Thr Tyr Phe Ser Thr Thr Pro Ile Lys Asn Glu Ala
 1 5 10 15
 Met Asn Asn Ser Thr Pro Thr Pro Lys Lys Ile Thr Leu Glu Asp Ile
 20 25 30
 Ala Gln Arg Lys Gln Glu Val Leu Gln Glu Ile Cys Asp Gln Lys Gln
 35 40 45
 Ala Met Ala Asp Thr Thr Arg Arg Ile Phe Ala Pro Leu Ala Pro Ala
 50 55 60
 Ala Ser Gly Gly Asn Ala Leu Met Arg Ser Phe Ser Thr Gly Met Ala
 65 70 75 80
 Ile Phe Asp Gly Val Met Leu Gly Met Lys Met Ile Arg Lys Val Arg
 85 90 95
 Gly Leu Phe Arg Lys Arg Tyr
 100

<210> 7578
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7578
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45

Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 7579
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 7579
 Lys Lys Thr Lys His Tyr Lys Asn Met Lys His Ile Tyr Leu Leu Leu
 1 5 10 15
 Phe Met Leu Ile Pro Met Thr Gly Met Ala Gln Glu Gly Ile Ser Gln
 20 25 30
 Asp Thr Thr Leu Tyr Val Asn Gly Arg Lys Ile Leu Ile Lys Glu Asn
 35 40 45
 Glu Gly Lys Ile Lys Val Lys Leu Tyr Glu Gln Ser Ser His Gly Asp
 50 55 60
 Thr Ile Glu Asn Asp Gln Ile Phe Glu Gly Ile Tyr Thr Asp Gly Gln
 65 70 75 80
 Thr Thr Glu Arg Arg Thr Ala Phe Thr Val Pro Phe Val Lys Arg Lys
 85 90 95
 Asn His Tyr Arg Phe Asp Pro His Ile Ala Gly Phe Tyr Met Gly Tyr
 100 105 110
 Thr Arg Leu Ser Asp Gly Ile Asn Phe Asn Thr Pro Asp Gly Leu Asn
 115 120 125
 Ile Asn Ala Asn Lys Ser Trp Glu Ile Gly Phe Asn Leu Phe Gln Gly
 130 135 140
 Ser Leu Thr Leu Ser Arg Asp Arg Gln Trp Gly Ile Thr Thr Gly Leu
 145 150 155 160
 Gly Trp Gly Tyr Arg Ser Phe Arg Leu Gly Asn Asn Tyr Ala Phe Arg
 165 170 175
 Gln Ile Asp Gly Val Thr Gly Ile Val Pro Gly Val Pro Asp Glu Glu
 180 185 190
 Val Tyr Thr Lys Ser Arg Leu Arg Tyr Phe Tyr Phe Arg Ile Pro Val
 195 200 205
 Ala Leu Glu Trp Gln Lys Arg Phe Ser His Ser Asn Ala His Gly Pro
 210 215 220
 Leu Phe Phe Ser Ala Gly Leu Glu Ala Glu Ile Arg His Gly Ala Lys
 225 230 235 240
 Ser Lys Ala Lys Val Asn Gly His Lys Lys Asn Leu Asp Ser Gly Leu
 245 250 255
 Asn Val His Pro Val Gly Ile Asn Leu Leu Ala Gln Ala Gly Tyr Gly
 260 265 270
 Asp Ile Gly Val Tyr Leu Arg Tyr Ser Thr Tyr Ser Leu Phe Glu His
 275 280 285
 Lys Lys Gly Pro Glu Leu Tyr Pro Tyr Ser Phe Gly Leu Cys Trp Tyr
 290 295 300
 Trp
 305

<210> 7580
 <211> 460
 <212> PRT
 <213> B.fragilis

<400> 7580

Lys	Ile	Asn	Lys	Glu	Ile	Thr	Asn	Leu	Ile	Phe	Ile	Thr	Asn	Asn	Phe	1	5	10	15
Leu	Lys	Thr	Met	Thr	Gln	Gln	Lys	Lys	Asn	Tyr	Val	Leu	Pro	Ile	Ala	20	25	30	
Met	Met	Phe	Ala	Leu	Phe	Ala	Met	Ile	Ser	Phe	Val	Thr	Gly	Leu	Thr	35	40	45	
Asn	Pro	Leu	Gly	Leu	Ile	Val	Lys	Glu	Gln	Phe	Gln	Ala	Ala	Asn	Trp	50	55	60	
Met	Thr	Gln	Leu	Gly	Asn	Ala	Ala	Asn	Phe	Ile	Ala	Tyr	Ala	Phe	Met	65	70	75	80
Gly	Leu	Pro	Ala	Gly	Met	Met	Leu	Lys	Arg	Ile	Gly	Tyr	Lys	Lys	Thr	85	90	95	
Ala	Leu	Thr	Ala	Val	Ala	Val	Gly	Phe	Ile	Gly	Val	Gly	Ile	Gln	Val	100	105	110	
Leu	Ser	Gly	Gln	Met	Asp	Tyr	Gln	Pro	Gly	Glu	Leu	Thr	Val	Phe	Trp	115	120	125	
Ile	Tyr	Leu	Thr	Gly	Ala	Phe	Val	Ser	Gly	Phe	Ser	Met	Cys	Met	Leu	130	135	140	
Asn	Ala	Val	Val	Asn	Pro	Leu	Leu	Asn	Thr	Leu	Ala	Gly	Gly	Gly	Lys	145	150	155	160
Lys	Gly	Asn	Gln	Leu	Ile	Gln	Phe	Gly	Gly	Ser	Leu	Asn	Ser	Ile	Ser	165	170	175	
Ala	Thr	Ile	Val	Pro	Val	Leu	Gly	Gly	Tyr	Leu	Ile	Gly	Thr	Ile	Ser	180	185	190	
Gln	Asp	Thr	Arg	Ile	Ser	Asp	Ala	Asn	Pro	Ala	Leu	Phe	Ile	Ala	Met	195	200	205	
Gly	Ile	Phe	Ala	Val	Val	Phe	Ile	Val	Leu	Ala	Ile	Met	Asp	Ile	Pro	210	215	220	
Glu	Pro	His	Lys	Glu	Ser	Ala	Ser	Asp	His	Lys	Val	Lys	Asp	Thr	His	225	230	235	240
Ser	Pro	Leu	Ser	Phe	Arg	His	Phe	Val	Leu	Gly	Thr	Val	Ala	Ile	Phe	245	250	255	
Val	Tyr	Val	Gly	Val	Glu	Val	Gly	Ile	Pro	Asn	Phe	Ile	Asn	Leu	Phe	260	265	270	
Leu	Thr	Thr	Ser	Pro	Asp	Ala	Ala	Gly	Ala	Lys	Gly	Phe	Gly	Met	Asp	275	280	285	
Thr	Ala	Met	Ala	Gly	Ser	Ile	Val	Gly	Thr	Tyr	Trp	Phe	Leu	Met	Met	290	295	300	
Ile	Gly	Arg	Leu	Cys	Gly	Gly	Ala	Leu	Gly	Ala	Lys	Phe	Ser	Ser	Lys	305	310	315	320
Thr	Gln	Leu	Thr	Val	Val	Ser	Ser	Leu	Ala	Leu	Ile	Phe	Leu	Leu	Ile	325	330	335	
Gly	Met	Phe	Ala	Pro	Ser	Ala	Thr	Thr	Val	Ala	Met	Pro	Val	Phe	Lys	340	345	350	
Gly	Gly	Ala	Ser	Ile	Gly	Phe	Gly	Met	Glu	Thr	Val	Pro	Val	Gly	Ile	355	360	365	
Met	Phe	Phe	Ala	Leu	Cys	Gly	Leu	Cys	Thr	Ser	Ile	Met	Trp	Gly	Gly	370	375	380	
Ile	Phe	Asn	Leu	Ala	Val	Glu	Gly	Leu	Gly	Lys	Tyr	Thr	Ala	Met	Ala	385	390	395	400
Ser	Gly	Ile	Phe	Met	Val	Met	Val	Cys	Gly	Gly	Gly	Ile	Leu	Pro	Leu	405	410	415	
Ile	Gln	Gly	Ala	Val	Ala	Asp	Val	Thr	Ser	Ser	Tyr	Ile	Ala	Ser	Tyr	420	425	430	
Trp	Val	Ile	Phe	Ala	Ala	Val	Ala	Tyr	Met	Leu	Tyr	Tyr	Ala	Leu	Val	435	440	445	
Gly	Cys	Lys	Asn	Val	Asn	Lys	Asp	Ile	Pro	Val	Glu	450	455	460					

<210> 7581
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7581
 Pro Asp Ser Asn Ile Ile Pro Cys Thr Thr Arg Leu Val Asp Val Pro
 1 5 10 15
 Ile Lys Val Gln Ile Pro Pro Asn Ile Val Thr Tyr Glu Arg Gly Ile
 20 25 30
 Arg Asn Leu Val Ala Gly Lys Trp Thr Val Arg Ala His Arg Leu Ile
 35 40 45
 Ile Gly Ala Lys Met Thr Thr Thr Gly Val Leu Phe Arg Lys Ala Glu
 50 55 60
 Ile Lys Ala Thr Ala Gly Asn Lys Arg Asn Cys Ala Arg Lys Thr Val
 65 70 75 80
 Val Arg Phe

<210> 7582
 <211> 279
 <212> PRT
 <213> B.fragilis

<400> 7582
 Ser Ala Cys Asn Ala Glu Ser Ile Thr Met Leu Phe Val Tyr Ala Lys
 1 5 10 15
 Tyr Ile Lys Ile Met Ser Asn Glu Asn Lys Thr Ile His Asp Phe Glu
 20 25 30
 Leu Asn Leu Ile Cys Asp Phe Phe Ser Asn Met Glu Arg Gln Gly Pro
 35 40 45
 Gly Ser Pro Glu Val Thr Leu Lys Ala Leu Ser Phe Ile Asp Asn Leu
 50 55 60
 Thr Glu Lys Ser Leu Ile Ala Asp Ile Gly Cys Gly Thr Gly Gly Gln
 65 70 75 80
 Thr Met Val Leu Ala Gly His Val Thr Gly Gln Val Thr Gly Leu Asp
 85 90 95
 Phe Leu Ser Gly Phe Ile Asp Ile Phe Asn Arg Asn Ala Arg Gln Ser
 100 105 110
 Gly Leu Gln Asn Arg Val Thr Gly Ile Val Gly Ser Met Asp Asp Leu
 115 120 125
 Pro Phe Arg Asn Glu Glu Leu Asp Leu Ile Trp Ser Glu Gly Ala Ile
 130 135 140
 Tyr Asn Ile Gly Phe Glu Arg Gly Leu Asn Glu Trp Arg Lys Tyr Leu
 145 150 155 160
 Lys Lys Gly Gly Tyr Leu Ala Val Ser Glu Cys Ser Trp Phe Thr Asp
 165 170 175
 Glu Arg Pro Ala Glu Ile Asn Asp Phe Trp Met Asp Ala Tyr Pro Glu
 180 185 190
 Ile Asp Thr Ile Pro Asn Gln Val Ala Lys Ile His Lys Ala Gly Tyr
 195 200 205
 Leu Pro Val Ala Thr Phe Ile Leu Pro Glu Asn Cys Trp Thr Asp His
 210 215 220
 Tyr Phe Thr Pro Lys Val Ala Ala Gln Lys Ile Phe Leu Thr Lys Tyr
 225 230 235 240
 Ala Gly Asn Lys Ile Ala Glu Glu Phe Ser Met Leu Gln Ser Ile Glu
 245 250 255
 Glu Glu Leu Tyr His Lys Tyr Lys Glu Tyr Tyr Gly Tyr Thr Phe Phe

Ile Ala Lys Lys Ile Gly Leu
275

265

270

<210> 7583
<211> 396
<212> PRT
<213> B.fragilis

<400> 7583

Thr	Phe	Leu	Asn	Arg	Arg	Thr	Asp	Leu	Gln	Arg	Ile	Ile	Trp	Glu	Asn
1			5						10					15	
Glu	Arg	Ile	Ser	Leu	Tyr	Leu	Gln	Glu	Ile	Leu	Ile	Ile	Pro	Asp	Met
			20					25					30		
Ile	Asn	Thr	Phe	Pro	Thr	Glu	Gly	Asn	Leu	Ser	Gly	Leu	Ser	Arg	Lys
		35					40					45			
Asp	Phe	Gln	Lys	Asp	Ile	Asn	Asp	Lys	Lys	Thr	Asp	Leu	Phe	Ile	Leu
	50					55					60				
Lys	Asn	Lys	Lys	Gly	Met	Glu	Val	Ala	Val	Thr	Asn	Tyr	Gly	Cys	Ala
65					70					75					80
Ile	Leu	Ser	Ile	Met	Val	Pro	Asp	Lys	Asp	Gly	Lys	Tyr	Ala	Asn	Val
			85						90					95	
Val	Leu	Ser	Tyr	Gly	Thr	Leu	Asp	Ala	Leu	Met	His	Gly	Pro	Glu	Pro
		100						105					110		
Phe	Leu	Ser	Thr	Thr	Ile	Gly	Arg	Tyr	Gly	Asn	Arg	Ile	Ala	Lys	Gly
		115					120					125			
Lys	Phe	Thr	Leu	Tyr	Gly	Glu	Glu	His	Ser	Leu	Thr	Ile	Asn	Asn	Gly
	130					135						140			
Pro	Asn	Ser	Leu	His	Gly	Gly	Pro	Thr	Gly	Phe	His	Ala	Arg	Val	Trp
145					150					155					160
Asp	Ala	Glu	Gln	Leu	Glu	Glu	Gly	Val	Ile	Arg	Phe	Asn	Tyr	Thr	Ser
			165						170					175	
Ala	Asp	Gly	Glu	Glu	Gly	Phe	Pro	Gly	Asn	Leu	Glu	Val	Glu	Met	Thr
		180						185					190		
Tyr	Arg	Leu	Glu	Glu	Glu	Glu	Asn	Ala	Ile	Val	Ile	Glu	Tyr	Arg	Ala
		195					200						205		
Thr	Thr	Asp	Lys	Ala	Thr	Val	Val	Asn	Leu	Thr	Asn	His	Gly	Phe	Phe
	210					215						220			
Asn	Leu	Ala	Gly	Thr	Ala	Asn	Pro	Thr	Pro	Thr	Val	Glu	Asn	Asn	Ile
225					230					235					240
Val	Thr	Ile	Asn	Ala	Asp	Phe	Tyr	Thr	Pro	Ile	Asp	Glu	Val	Ser	Ile
			245						250					255	
Pro	Thr	Gly	Glu	Ile	Ala	Lys	Val	Glu	Gly	Thr	Pro	Met	Asp	Phe	Arg
		260						265					270		
Thr	Pro	His	Thr	Val	Gly	Glu	Arg	Ile	Asn	Asp	Lys	Phe	Gln	Gln	Leu
		275					280					285			
Ile	Tyr	Gly	Ala	Gly	Tyr	Asp	His	Cys	Tyr	Val	Leu	Asn	Lys	Ala	Glu
	290				295						300				
Thr	Gly	Ser	Leu	Asp	Leu	Ala	Ala	Thr	Cys	Lys	Glu	Pro	Asn	Ser	Gly
305					310					315					320
Arg	Thr	Met	Glu	Val	Tyr	Thr	Thr	Glu	Ala	Gly	Val	Gln	Leu	Tyr	Thr
			325						330					335	
Gly	Asn	Trp	Leu	Gly	Gly	Phe	Glu	Gly	Thr	Asn	Gly	Ala	Thr	Phe	Pro
		340						345					350		
Ala	Arg	Ser	Ala	Ile	Cys	Phe	Glu	Ala	Gln	Cys	Phe	Pro	Asp	Thr	Pro
		355					360						365		
Asn	Lys	Ala	His	Phe	Pro	Ser	Ala	Thr	Leu	Leu	Pro	Gly	Asp	Glu	Tyr
	370					375					380				
Gln	Gln	Val	Thr	Ile	Tyr	Lys	Phe	Gly	Val	Glu	Lys				

385

390

395

<210> 7584

<211> 173

<212> PRT

<213> B.fragilis

<400> 7584

Met	Glu	Leu	Lys	Gln	Phe	Lys	Ile	Ala	Val	Leu	Pro	Leu	Arg	Asp	Lys
1				5					10					15	
Leu	Leu	Ser	Tyr	Ala	Arg	Lys	Leu	Thr	Asp	Asp	His	Ser	Asp	Ala	Glu
			20					25					30		
Asp	Ala	Val	Gln	Glu	Val	Met	Leu	Lys	Leu	Trp	Lys	Leu	Arg	Pro	Lys
		35					40					45			
Leu	Asp	Glu	Tyr	His	Ser	Ile	Glu	Ala	Leu	Ala	Met	Thr	Met	Thr	His
	50					55					60				
His	Thr	Cys	Met	Asp	Ile	Leu	Arg	Gly	Lys	His	Pro	Asp	Asn	Leu	Ser
65					70					75				80	
Leu	Asp	Ser	Val	Gln	Ala	Ala	Ser	Pro	Val	Ala	Thr	Pro	Glu	Arg	Leu
			85						90					95	
Leu	Glu	Glu	Lys	Asp	Glu	Phe	Ser	Leu	Met	Arg	His	Ile	Ile	Ser	Thr
			100					105					110		
Leu	Pro	Pro	Leu	Gln	Gln	Thr	Ile	Leu	Arg	Met	Lys	Asp	Val	Glu	Glu
		115					120					125			
Tyr	Glu	Thr	Glu	Glu	Ile	Ala	Glu	Ile	Thr	Gly	Cys	Ser	Ser	Glu	Ala
	130					135					140				
Ile	Arg	Ser	Asn	Leu	Ser	Arg	Ala	Arg	Lys	Lys	Val	Arg	Asp	Ile	Tyr
145					150					155					160
Leu	Gln	Thr	Ile	Gln	Gln	Arg	Lys	Arg	Arg	Asn	Glu	Ala			
				165					170						

<210> 7585

<211> 209

<212> PRT

<213> B.fragilis

<400> 7585

Arg	Leu	Ile	Asn	Leu	Pro	Leu	Ile	Val	Tyr	Trp	Met	Ile	Val	Ala	Asp
1				5					10					15	
Phe	Arg	Ile	Glu	Lys	Leu	Leu	Lys	Cys	His	Leu	Ile	Asn	Asn	Asn	Ile
			20					25					30		
Met	Lys	Lys	Leu	Leu	Leu	Leu	Ser	Val	Leu	Ser	Ile	Phe	Met	Ile	Ala
		35					40					45			
Cys	His	Gln	Pro	Asp	Thr	Pro	Pro	Tyr	Ser	Tyr	Ser	Met	Asn	Ile	Asp
	50					55					60				
Met	Gln	Ile	Ile	Ser	Ser	Leu	Glu	Thr	Thr	Tyr	Pro	Leu	Asp	Asn	Leu
65					70					75					80
Glu	Thr	Val	Ile	Ile	Asn	Ser	Arg	Leu	Glu	Leu	Ala	Ser	Ser	Ser	Tyr
			85						90					95	
Arg	Ile	Lys	Thr	Leu	Ile	Ser	Ser	Asn	Asp	Leu	Gln	Glu	Ser	Trp	Leu
			100					105					110		
Glu	Arg	Pro	Ile	Val	Met	Leu	Gly	Arg	Glu	Gly	His	Arg	Tyr	Leu	Ser
		115					120					125			
Leu	Pro	Ile	Thr	Phe	Asn	Glu	Glu	Lys	Asp	Arg	Tyr	Asn	Val	Lys	Ile
	130					135					140				
Glu	Phe	Tyr	Cys	Pro	Glu	Ile	Phe	Lys	Asp	Asp	Lys	Tyr	His	Thr	Ile
145					150					155					160
Asn	Ile	Val	Tyr	Ser	Ile	Val	Lys	Gly	Lys	Tyr	Leu	Tyr	Asn	Leu	Glu
				165					170					175	

Ser Phe Thr Leu Asp Ser Tyr Ala Gly Glu Ile Glu Asn Gln Gly Glu
 180 185 190
 Asn Asn Ala Pro Ile Ile Val Phe Ser Ile Asn Thr Ala Glu Lys Lys
 195 200 205
 Glu

<210> 7586
 <211> 480
 <212> PRT
 <213> B.fragilis

<400> 7586
 Tyr Lys Ile Asn Arg Glu Ile Pro Ile Ile Val Trp Gly Lys Ser Ile
 1 5 10 15
 Arg Gln Arg Glu Tyr Leu Ala Tyr Leu Cys Asn Val Asn Lys Lys Ile
 20 25 30
 Lys Lys Pro Ile Asn His Gly Asn Met Lys Lys Ile Val Leu Leu Ser
 35 40 45
 Leu Phe Ala Leu Cys Leu Pro Leu Leu Val Met Ala Gln Ser Asn Asn
 50 55 60
 Asp Asp Leu Tyr Phe Val Pro Ser Lys Glu Lys Lys Gln Glu Ala Lys
 65 70 75 80
 Lys Thr Pro Val Lys Lys Glu Pro Glu Lys Lys Val Val Thr Thr Asn
 85 90 95
 Ile Tyr Thr Ser Pro Gly Thr Thr Val Val Val Gln Asp Arg Lys Gly
 100 105 110
 Asn Lys Arg Asp Met Arg Asp Val Asp Glu Tyr Asn Arg Arg Tyr Asp
 115 120 125
 Val Lys Asp Asn Glu Phe Ala Met Glu Asp Asp Thr Leu Tyr Val Lys
 130 135 140
 Glu Lys Ala Val Ser Asp Pro Asp Gly Glu Trp Val Asn Gly Phe Asn
 145 150 155 160
 Gly Ser Gln Asp Asp Tyr Glu Tyr Ala Glu Arg Ile Ile Arg Phe Arg
 165 170 175
 Asn Pro Arg Phe Ala Val Ser Ile Ser Ser Pro Leu Tyr Trp Asp Ile
 180 185 190
 Val Tyr Gly Thr Asn Ser Trp Asp Trp Asn Val Tyr Thr Asp Gly Phe
 195 200 205
 Tyr Ala Tyr Ala Phe Pro Thr Phe Thr Asn Arg Leu Trp Trp Asp Trp
 210 215 220
 Arg Tyr Asn Ser Tyr Gly Ser Gly Trp Gly Trp Gly Trp Gly Trp Ser
 225 230 235 240
 Ser Pro Tyr Tyr Ala Trp Gly Gly Tyr Tyr Pro Gly Tyr Trp Gly Gly
 245 250 255
 Tyr Trp Gly Gly Tyr Trp Gly Gly Trp Tyr Gly Gly Gly Tyr Trp Gly
 260 265 270
 His His His His Tyr His Pro Gly Trp Gly Gly Gly Gly His Tyr Trp
 275 280 285
 Ala Ser His Asn Thr Tyr Thr Asn Arg Arg Ser Tyr Gly Pro Ser Arg
 290 295 300
 Val Ser Thr Ser Ser Arg Val Asn Ala Ser Ser Ile Arg Arg Thr Asp
 305 310 315 320
 Ser Tyr Thr Arg Ser Gly Asn Asn Ile Ser Pro Ser Arg Gly Gly Asp
 325 330 335
 Ser Arg Met Asn Tyr Gly Ser Arg Arg Val Ile Ser Val Arg Asp Thr
 340 345 350
 Glu Arg Pro Asp Ala Thr Thr Arg Thr Asp Ala Ser Ser Ser Arg Arg
 355 360 365

Ser Thr Tyr Thr Arg Pro Ser Ser Thr Arg Ser Ser Ser Ser Tyr Asn
 370 375 380
 Ser Asn Val His Pro Asn Arg Ser Thr Asn Ser Gly Thr Tyr Ser Arg
 385 390 395 400
 Ser Thr Ser Arg Ser Ser Ser Thr Tyr Thr Arg Gly Ser Ser Thr Thr
 405 410 415
 Thr Pro Ser Arg Ser Tyr Ser Asn Glu Gly Thr Arg Arg Ser Tyr Gly
 420 425 430
 Ser Ser Ser Ser Ser Arg Ser Tyr Ser Ser Gly Ser Ser Thr Arg Ser
 435 440 445
 Ser Ser Ser Tyr Ser Ser Gly Ser Arg Ser Ser Gly Ser Ser Ser Arg
 450 455 460
 Ser Thr Ser Gly Gly Gly Ser Tyr Ser Arg Ser Ser Gly Gly Arg Arg
 465 470 475 480

<210> 7587
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7587
 Asn Tyr Ser Lys Pro Ser Ile Ile Thr Asn His Asn Pro Tyr His Asn
 1 5 10 15
 Glu Glu Lys Tyr Tyr Ser Val Ile His Gln Phe Thr Phe Ile Pro Ala
 20 25 30
 Met His Lys Gly Thr Ser Thr Arg Ile Leu His Cys Arg Ile Phe Pro
 35 40 45
 Ala Gly Arg Leu Arg Thr Arg Arg Leu Phe His Glu Ser Cys Met Ala
 50 55 60
 Phe Leu
 65

<210> 7588
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 7588
 Ile Met Ala Lys Ile Lys Gly Ala Ile Val Val Asp Thr Glu Arg Cys
 1 5 10 15
 Lys Gly Cys Asn Leu Cys Val Val Ala Cys Pro Leu Asn Val Ile Ser
 20 25 30
 Leu Ala Lys Glu Val Asn Val Lys Gly Tyr Asn Tyr Ala Gln Gln Ile
 35 40 45
 Leu Glu Asp Thr Cys Asn Gly Cys Ser Ser Cys Ala Thr Val Cys Pro
 50 55 60
 Asp Gly Cys Ile Ser Val Tyr Lys Val Lys Val Glu
 65 70 75

<210> 7589
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 7589
 His Ile Lys Lys Asp Met Lys Lys Ile Gly Ile Cys Cys Asp His Ala
 1 5 10 15
 Gly Phe Glu Leu Lys Glu Tyr Val Arg Gly Trp Leu Glu Ala Lys Gly
 20 25 30

Trp Glu Tyr Lys Asp Phe Gly Thr Tyr Ser Thr Asp Ser Cys Asp Tyr
 35 40 45
 Pro Asp Phe Ala His Pro Leu Ala Leu Ala Val Glu Ala Ser Glu Cys
 50 55 60
 Tyr Pro Gly Ile Ala Ile Cys Gly Ser Gly Asn Gly Ile Ser Met Thr
 65 70 75 80
 Leu Asn Lys His Gln Gly Ile Arg Ala Ala Leu Cys Trp Thr Ala Glu
 85 90 95
 Ile Ala His Met Ala Arg Leu His Asn Asp Ala Asn Val Leu Val Met
 100 105 110
 Pro Gly Arg Tyr Ile Ser Thr Glu Glu Ala Asp Met Ile Met Thr Glu
 115 120 125
 Phe Phe Ser Thr Glu Phe Glu Gly Gly Arg His Gln Lys Arg Ile Asp
 130 135 140
 Lys Ile Pro Val Lys
 145

<210> 7590
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 7590
 Ile Met Lys Lys Leu Val Val Leu Gly Met Gly Val Cys Val Ala Leu
 1 5 10 15
 Ala Phe Ala Ser Cys Lys Ser Ser Glu Ser Ala Tyr Lys Lys Ala Tyr
 20 25 30
 Glu Lys Ala Lys Gln Gln Glu Leu Ala Glu Pro Gln Val Glu Ala Pro
 35 40 45
 Val Glu Val Thr Pro Val Val Ala Ala Pro Val Glu Thr Lys Lys Ala
 50 55 60
 Val Asp Asn Ala Ala Gly Val Arg Gln Glu Lys Val Thr Val Val Ser
 65 70 75 80
 Gly Ala Asp Gly Leu Lys Asp Tyr Ser Val Val Cys Gly Ser Phe Gly
 85 90 95
 Leu Lys Ala Asn Ala Glu Gly Leu Lys Asp Phe Leu Asp Lys Glu Gly
 100 105 110
 Tyr Asn Ala Thr Ile Ala Phe Asn Ala Glu Thr Ala Met Tyr Arg Val
 115 120 125
 Ile Val Asn Thr Phe Ala Asp Arg Ala Ser Ala Ala Gln Ala Arg Asp
 130 135 140
 Ala Phe Lys Ala Lys Tyr Pro Ser Arg Lys Asp Phe Gln Gly Ala Trp
 145 150 155 160
 Leu Leu Tyr Arg Ile Tyr
 165

<210> 7591
 <211> 528
 <212> PRT
 <213> B.fragilis

<400> 7591
 Asp Met Lys Lys Ile Ile Ile Val Ser Ala Leu Val Leu Leu Trp Thr
 1 5 10 15
 Ala Gly Ala Asn Ala Gln Thr Ala Tyr Asp Ala Ala Lys Leu Val Ser
 20 25 30
 Lys Asp Leu Asn Gly Thr Ala Arg Phe Val Gly Met Gly Gly Ala Met
 35 40 45
 Gly Ala Leu Gly Gly Asp Ile Ser Thr Met Gly Thr Asn Pro Ala Gly

50		55		60
Ile Gly Ile Tyr Arg Ser Asn Asp Val Met Thr Ser Phe Ser Phe Ser				
65	70	75	80	
Thr Tyr Gly Thr Glu Ser Lys Tyr Gly Gly Lys Thr Phe Asp Asn Asn				
	85	90	95	
Asn Asn Arg Trp Ser Tyr Asp Asn Ile Gly Ile Val Phe Ala Ser Lys				
100	105	110		
Ile Gly Asn His Thr Pro Leu Arg Tyr Val Asn Phe Gly Phe Asn Tyr				
115	120	125		
His Arg Ala Lys Ser Phe Tyr Lys Asn Met Phe Met Glu Gly Ala Leu				
130	135	140		
Asn Tyr Ser Gln Ile Asp Tyr Met Thr Gly Gln Ala Asn Gly Met Leu				
145	150	155	160	
Ala Asn Gly Val Ser Leu Lys Glu Leu Ser Asp Asn Lys Leu Asn Pro				
165	170	175		
Tyr Ser Asp Asn Gly Val Gly Trp Leu Gly Ala Leu Gly Trp Asp Gly				
180	185	190		
Leu Leu Phe Asp Phe Lys Asn Gly Glu Tyr Ile Gly Val Leu Pro Gln				
195	200	205		
Thr Pro Tyr Ser Thr Phe Arg Ser Arg Glu Lys Gly Gly Ile Asp Gln				
210	215	220		
Tyr Asp Phe Asn Ile Ala Phe Asn Ile Ser Asp Arg Val Tyr Leu Gly				
225	230	235	240	
Leu Thr Ile Gly Ala Tyr Asp Val Asp Tyr Thr Lys Ser Tyr Tyr Tyr				
245	250	255		
Ser Glu Asp Tyr Gly Asp Lys Gln Asn Tyr Asn Ile Gly Ser Met Asn				
260	265	270		
Arg Ile Ser Gly Ser Gly Phe Asp Phe Lys Met Gly Ala Ile Ile Arg				
275	280	285		
Pro Phe Glu Asp Ser Pro Phe Arg Ile Gly Leu Ala Val His Thr Pro				
290	295	300		
Thr Phe Tyr Arg Leu Thr Tyr Thr Thr Ser Ala Tyr Leu Glu Ser Asn				
305	310	315	320	
Ile Trp Met His Asn Asn Asp Thr Gly Lys Asp Glu Leu Leu Asn Ser				
325	330	335		
Tyr Phe Asp Thr Tyr Lys Glu Leu Lys Asp Met Asn Gln Asn Arg Glu				
340	345	350		
Phe Arg Leu Lys Thr Pro Trp Lys Tyr Asn Val Ser Leu Gly Tyr Thr				
355	360	365		
Val Gly Gln Asn Leu Ala Ile Gly Ala Glu Tyr Glu Tyr Glu Asp Tyr				
370	375	380		
Ser Ser Val Lys Phe Arg Tyr Pro Glu Gly Asp Lys Met Glu Phe Glu				
385	390	395	400	
Thr Asn Ala Ala Lys Met Val Met Lys Gly Val Asn Thr Phe Arg Ile				
405	410	415		
Gly Ala Glu Tyr Lys Val Ile Pro Gln Phe Ala Phe Arg Leu Gly Tyr				
420	425	430		
Asn Tyr Ser Ser Ser Ile Phe Lys Asn Gly Ala Ile Lys Tyr Leu Pro				
435	440	445		
Tyr Asn Ser Val Asn Thr Asp Thr Asp Phe Ala Asn Ser Lys Ser Leu				
450	455	460		
Ser Asn Tyr Thr Leu Gly Ile Gly Tyr Arg Gly Thr Met Ile Tyr Ala				
465	470	475	480	
Asp Leu Ala Tyr Lys Phe Ser Ser Tyr Lys Glu Asp Phe Tyr Pro Phe				
485	490	495		
Tyr Asn Glu Phe Asn Asp Arg Gly Ile Val Thr Pro Asn Val Thr Lys				
500	505	510		
Ile Thr Asn Thr Arg Ser Gln Val Leu Phe Thr Leu Gly Met Arg Phe				
515	520	525		

<210> 7592
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 7592

Asn	Asn	Met	Lys	Ser	Lys	Ile	Ala	Ile	Leu	Ser	Leu	Leu	Leu	Thr	Gly
1			5						10					15	
Ala	Ala	Val	Ser	Ala	Ser	Ala	Gln	Thr	Lys	Glu	His	Tyr	Tyr	Ser	Glu
			20					25					30		
Lys	Ala	Lys	Asp	Asn	Ile	Phe	Ile	Ser	Val	Gly	Val	Gly	Ala	Gln	Gly
		35				40						45			
Cys	Val	Asn	Pro	Asp	Asn	Phe	Asp	Tyr	Gly	Phe	Gly	His	Ala	Ile	Thr
	50					55					60				
Pro	Leu	Ile	His	Ala	Ser	Val	Gly	Lys	Leu	Phe	Asn	Pro	Ile	Trp	Gly
65					70					75					80
Ile	Arg	Gly	Gln	Val	Ala	Gly	Cys	Trp	Ser	Thr	Leu	Tyr	Ser	Glu	Tyr
			85						90					95	
Gly	Met	Pro	Glu	Gly	Glu	Tyr	Lys	Lys	Met	Lys	Asn	Lys	Lys	Tyr	Phe
		100						105					110		
Thr	Leu	Arg	Ala	Asp	Gly	Leu	Phe	Asn	Leu	Ser	Asn	Ala	Ile	Gly	Gly
		115					120						125		
Tyr	Asn	Pro	Asp	Arg	Leu	Phe	Thr	Val	Ser	Val	Phe	Ala	Gly	Pro	Gly
	130					135					140				
Leu	Thr	Phe	Ala	Lys	Ala	Tyr	Gly	Asn	Gln	Asp	Lys	Leu	Asn	Ala	Leu
145				150						155					160
Ile	Asn	Gly	Ser	Val	Gly	Leu	Met	Gly	Gln	Phe	Asn	Ile	Asn	Lys	Tyr
			165						170					175	
Leu	Asp	Ile	Asn	Val	Glu	Ala	Arg	Gly	Glu	Val	Ser	Pro	Ser	Val	Phe
			180					185					190		
Gly	His	Tyr	Ser	Ser	Ala	Arg	Thr	Asp	Gly	Ala	Val	Ser	Leu	Thr	Ala
	195						200					205			
Gly	Val	Thr	Tyr	Thr	Phe	Gly	Gly	Lys	Arg	Phe	Val	Ser	Cys	Gly	Ala
	210					215					220				
Gln	Val	Asp	Gln	Asn	Ala	Ile	Asn	Glu	Glu	Leu	Asn	Arg	Tyr	Arg	Ser
225				230						235					240
Glu	Leu	Ser	Lys	Ala	Gln	Ser	Asp	Leu	Ala	Asp	Ala	Lys	Asn	Ala	Leu
			245						250					255	
Ala	Asn	Val	Lys	Pro	Val	Thr	Lys	Glu	Val	Val	Lys	Glu	Ile	Glu	Val
		260						265					270		
Ala	Gly	Pro	Arg	Ala	Val	Phe	Phe	Gln	Ile	Gly	Lys	Ser	Lys	Ile	Asp
		275				280						285			
Asp	Tyr	Gly	Met	Val	Asn	Ile	Gln	Leu	Ala	Ala	Lys	Ile	Leu	Lys	Ala
	290					295					300				
Asn	Pro	Asp	Lys	Lys	Tyr	Lys	Ile	Ala	Gly	Tyr	Ala	Asp	Lys	Ala	Thr
305				310							315				320
Gly	Ser	Ala	Lys	Trp	Asn	Gln	Lys	Leu	Ser	Glu	Ala	Arg	Ala	Gln	Ala
			325						330					335	
Val	Tyr	Asp	Ala	Leu	Ile	Lys	Glu	Gly	Val	Ser	Lys	Asp	Gln	Leu	Glu
		340					345						350		
Leu	Val	Gly	Phe	Gly	Gly	Thr	Ala	Asn	Met	Phe	Gly	Lys	Asn	Phe	Leu
		355				360						365			
Asn	Arg	Val	Val	Ile	Leu	Glu									
	370					375									

<210> 7593
 <211> 258
 <212> PRT

<213> B.fragilis

<400> 7593

Glu Glu Met Lys Gly Lys Ile Val Phe Ile Thr Gly Ala Ser Ser Gly
 1 5 10 15
 Ile Gly Glu Gly Cys Ala Arg Lys Phe Ala Ser Gln Gly Ser Asp Leu
 20 25 30
 Ile Leu Asn Ala Arg Asn Val Ala Lys Leu Glu Glu Leu Lys Val Glu
 35 40 45
 Leu Glu Ala Lys Tyr Gly Val Arg Ile Cys Leu Leu Pro Phe Asp Val
 50 55 60
 Arg Asp Arg Asn Ala Ala Thr Met Ala Leu Ala Ser Leu Pro Glu Glu
 65 70 75 80
 Trp Lys Arg Ile Asp Val Leu Val Asn Asn Ala Gly Leu Val Ile Gly
 85 90 95
 Val Asp Lys Glu Phe Glu Gly Asn Leu Asp Glu Trp Asp Ile Val Ile
 100 105 110
 Asp Thr Asn Ile Lys Ala Leu Leu Ala Met Thr Arg Ile Val Val Pro
 115 120 125
 Gly Met Val Glu Arg Gly His Gly His Ile Ile Asn Ile Gly Ser Ile
 130 135 140
 Ala Gly Asp Ala Ala Tyr Pro Gly Gly Ser Val Tyr Cys Ala Thr Lys
 145 150 155 160
 Ala Ala Val Lys Ala Leu Ser Asp Gly Leu Arg Ile Asp Leu Val Asp
 165 170 175
 Thr Pro Leu Arg Val Thr Asn Ile Lys Pro Gly Met Val Glu Thr Asn
 180 185 190
 Phe Thr Val Val Arg Tyr Arg Gly Asp Lys Asp Ala Ala Asp Ala Phe
 195 200 205
 Tyr Lys Gly Ile Arg Pro Leu Thr Gly Asp Asp Ile Ala Glu Thr Val
 210 215 220
 Tyr Tyr Ala Ala Ser Ala Pro Glu His Ile Gln Ile Ala Glu Val Leu
 225 230 235 240
 Val Met Pro Thr Tyr Gln Ala Thr Gly Thr Ile Ser Tyr Lys Lys Lys
 245 250 255
 Asp Cys

<210> 7594

<211> 293

<212> PRT

<213> B.fragilis

<400> 7594

Lys Asn Ser Lys Pro Ser Pro Ser Ile Leu Ser Ala Lys Trp Arg Arg
 1 5 10 15
 Glu Leu Arg Ile Arg Ser Cys Cys Ile Ala Ser Gly Arg Ile Leu Ser
 20 25 30
 Leu Trp Tyr Gly Leu Ala Glu Lys Ser Phe Tyr Pro Gly Lys Val Pro
 35 40 45
 Val Pro Leu Met His Ile Asp Ser Lys Trp Lys Phe Lys Glu Met Ile
 50 55 60
 Gln Phe Arg Asp Glu Tyr Ala Lys Lys Tyr Gly Trp Asn Leu Ile Val
 65 70 75 80
 Glu Ser Asn Met Glu Ala Phe His Ala Gly Val Gly Pro Phe Thr His
 85 90 95
 Gly Ser Lys Val His Thr Asp Leu Met Lys Thr Gln Ala Leu Leu Arg
 100 105 110
 Ala Leu Asp Lys Tyr Lys Phe Asp Ala Ala Phe Gly Gly Ala Arg Arg

115	120	125
Asp Glu Glu Lys Ser Arg Ala Lys Glu Arg Ile Phe Ser Phe Arg Asp		
130	135	140
Lys Phe His Gln Trp Asp Pro Lys Asn Gln Arg Pro Glu Leu Trp Asp		
145	150	155
Ile Tyr Asn Ala Arg Val His Lys Gly Glu Ser Ile Arg Val Phe Pro		
165	170	175
Leu Ser Asn Trp Thr Glu Leu Asp Ile Trp Gln Tyr Ile Arg Leu Glu		
180	185	190
Asn Ile Pro Ile Val Pro Leu Tyr Tyr Ala Lys Glu Arg Pro Val Val		
195	200	205
Gln Met Asp Gly Asn Leu Ile Met Ala Asp Asp Glu Arg Leu Pro Glu		
210	215	220
Lys Tyr Arg Asp Gln Ile Glu Met Lys Met Val Arg Phe Arg Thr Leu		
225	230	235
Gly Cys Trp Pro Leu Thr Gly Ala Val Glu Ser Glu Ala Asp Thr Ile		
245	250	255
Glu Lys Ile Val Glu Glu Met Met Thr Thr Thr Lys Ser Glu Arg Thr		
260	265	270
Thr Arg Val Ile Asp Phe Asp Gln Glu Gly Ser Met Glu Gln Lys Lys		
275	280	285
Arg Glu Gly Tyr Phe		
290		

<210> 7595
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 7595
Asn Ile Gly Lys Asp Leu Ile Met Asn Asp Glu Arg Ser Thr Ile Asn
1 5 10 15
Asp Arg Asp Arg Leu Thr Ser His Tyr Ile Pro Pro Val Arg Thr Leu
20 25 30
Leu Ile Val Asp Arg Ser Ser Phe Phe Tyr Leu Phe His Val Thr Phe
35 40 45
Ser Phe Leu Leu Arg Leu Ala Tyr Val Asn Gly Thr Lys Thr Ile Gln
50 55 60
Asn Ser Arg Ser Ser Thr Pro Arg Gln Thr Ala
65 70 75

<210> 7596
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 7596
Asn Ile Asp Glu Glu Ile Ile Ile Lys Met Lys Glu Glu Tyr Lys Leu
1 5 10 15
Ser His Leu Lys Glu Leu Glu Ala Glu Ser Ile His Ile Ile Arg Glu
20 25 30
Val Ala Ala Gly Val Glu Asn Pro Val Met Leu Tyr Ser Ile Gly Lys
35 40 45
Asp Ser Phe Val Met Val Arg Pro Cys Arg Lys Lys Leu Leu Ser Gly
50 55 60
Gln Ser Thr Gly Ser Phe Asp Ala Tyr Arg Phe Lys Val Glu Ile
65 70 75

<210> 7597

<211> 84
 <212> PRT
 <213> B.fragilis

<400> 7597

Ile	Lys	Phe	Glu	Ile	Val	Asn	Cys	Phe	Ile	Phe	Val	Thr	His	Tyr	Leu
1			5					10					15		
Asn	Ile	Phe	Arg	Ile	His	Glu	Lys	His	Ser	Asn	Thr	Phe	Ser	Ile	Ala
		20						25					30		
Cys	Arg	Leu	Asn	Leu	Asn	Tyr	Asn	Asn	Lys	Glu	Leu	Leu	Pro	Lys	Arg
		35					40				45				
Val	Phe	Arg	Glu	Lys	Thr	Lys	Gly	Gln	Ser	Val	Ala	Lys	Lys	Gln	Ile
	50					55				60					
Val	Tyr	Lys	Thr	Lys	Ser	Asp	Leu	Arg	Val	Phe	Val	Met	Pro	Gln	Arg
65					70				75					80	
Tyr	Ile	Ile	Phe												

<210> 7598

<211> 491

<212> PRT

<213> B.fragilis

<400> 7598

His	Gly	Thr	Glu	Glu	Thr	Arg	Arg	Ile	Phe	Leu	Asn	Ile	Thr	Thr	Met
1			5					10					15		
Ala	Asp	Lys	Leu	Asp	Ile	Lys	Ala	Phe	Leu	Asp	Lys	Asp	Glu	Gln	Lys
		20						25					30		
Asp	Leu	Leu	Arg	Leu	Leu	Thr	Ala	Gly	Ser	Val	Asp	Asp	Gly	Lys	Ser
	35						40					45			
Thr	Leu	Ile	Gly	Arg	Leu	Leu	Phe	Asp	Ser	Lys	Lys	Leu	Tyr	Glu	Asp
	50					55					60				
Gln	Leu	Asp	Ala	Leu	Glu	Arg	Asp	Ser	Lys	Arg	Leu	Gly	Asn	Ala	Gly
65					70				75					80	
Glu	His	Ile	Asp	Tyr	Ala	Leu	Leu	Leu	Asp	Gly	Leu	Lys	Ala	Glu	Arg
			85						90				95		
Glu	Gln	Gly	Ile	Thr	Ile	Asp	Val	Ala	Tyr	Arg	Tyr	Phe	Ser	Thr	Asn
		100						105					110		
Asn	Arg	Lys	Phe	Ile	Ile	Ala	Asp	Thr	Pro	Gly	His	Glu	Gln	Tyr	Thr
		115					120					125			
Arg	Asn	Met	Ile	Thr	Gly	Gly	Ser	Thr	Ala	Asn	Leu	Ala	Ile	Ile	Leu
	130					135					140				
Val	Asp	Ala	Arg	Met	Gly	Val	Ile	Thr	Gln	Thr	Arg	Arg	His	Thr	Phe
145					150					155				160	
Leu	Val	Ser	Leu	Leu	Gly	Ile	Lys	His	Val	Val	Leu	Ala	Val	Asn	Lys
					165					170				175	
Met	Asp	Leu	Val	Asp	Phe	Ser	Glu	Glu	Arg	Phe	Asn	Glu	Ile	Val	Ala
		180						185					190		
Glu	Tyr	Lys	Lys	Phe	Val	Ala	Pro	Leu	Gly	Ile	Pro	Asp	Val	Thr	Cys
	195						200					205			
Ile	Pro	Leu	Ser	Ala	Leu	Asp	Gly	Asp	Asn	Val	Val	Asp	Lys	Ser	Glu
	210					215						220			
Arg	Thr	Pro	Trp	Tyr	Glu	Gly	Leu	Ser	Leu	Leu	Asp	Phe	Leu	Glu	Thr
225					230						235			240	
Val	His	Ile	Asp	Ser	Asp	Asn	Asn	Phe	Ser	Asp	Phe	Arg	Phe	Pro	Val
				245						250				255	
Gln	Tyr	Val	Leu	Arg	Pro	Asn	Leu	Asp	Phe	Arg	Gly	Phe	Cys	Gly	Lys
		260						265					270		
Val	Ala	Ser	Gly	Ile	Ile	Arg	Lys	Gly	Asp	Lys	Val	Met	Ala	Leu	Pro

275 280 285
 Ser Gly Lys Val Ser His Val Lys Ser Ile Val Thr Phe Asp Gly Glu
 290 295 300
 Leu Asp Tyr Ala Phe Pro Pro Gln Ser Val Thr Leu Thr Leu Glu Asp
 305 310 315 320
 Glu Ile Asp Val Ser Arg Gly Glu Met Leu Val His Pro Asp Asn Leu
 325 330 335
 Pro Val Val Asp Arg Asn Phe Glu Ala Met Leu Val Trp Met Asp Glu
 340 345 350
 Glu Pro Met Asp Ile Asn Lys Ser Phe Phe Ile Lys Gln Thr Thr Asn
 355 360 365
 Val Ser Arg Thr Arg Ile Asp Ser Ile Lys Tyr Lys Val Asp Val Asn
 370 375 380
 Thr Met Glu His Ser Ser Val Pro Phe Leu Ser Leu Asn Glu Ile Ala
 385 390 395 400
 Arg Val Val Phe Thr Thr Ala Lys Glu Leu Phe Phe Asp Pro Tyr Arg
 405 410 415
 Lys Asn Lys Ser Cys Gly Ser Phe Ile Leu Ile Asp Pro Ile Thr Asn
 420 425 430
 Asn Thr Ser Ala Val Gly Met Ile Ile Asp Arg Val Glu Lys Lys Asp
 435 440 445
 Met Asn Ile Ala Asp Asp Phe Pro Val Leu Asn Leu Pro Glu Leu Gly
 450 455 460
 Ile Ala Pro Glu His Tyr Glu Ala Ile Glu Lys Ala Val Lys Ser Leu
 465 470 475 480
 Ser Glu Gln Gly Phe Glu Val Arg Ile Glu Lys
 485 490

<210> 7599
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 7599
 Tyr Val Lys Asp Asp Leu Phe Gly Ala Val Phe Ser Leu Pro Glu Val
 1 5 10 15
 Thr Val Ile Gly Arg Arg Pro Thr Ser Ser Glu Asn Pro Phe Lys Trp
 20 25 30
 Pro Phe Gly Asp Met Pro Ser Glu Ser Pro Lys Ala Leu Pro Gly Leu
 35 40 45
 Asp Asp Phe Phe Leu Leu Lys Glu Ala Val His Leu Arg Tyr Leu His
 50 55 60
 His Ser Asn Gln Ala Leu Cys Leu Asn Leu Lys Lys Ser Leu Arg Met
 65 70 75 80
 Gln Leu

<210> 7600
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 7600
 Ser Tyr Phe Cys Asn Pro Asn Met Ser Arg Ile Val Ala Ile Asp Tyr
 1 5 10 15
 Gly Arg Lys Arg Thr Gly Ile Ala Val Ser Asp Thr Met Gln Ile Ile
 20 25 30
 Ala Asn Gly Leu Thr Thr Val Pro Thr His Glu Leu Leu Asp Phe Ile
 35 40 45

Thr Asn Tyr Val Lys Gln Glu Ser Val Glu Arg Ile Ile Ile Gly Leu
 50 55 60
 Pro Lys Gln Met Asn Asn Glu Val Ser Glu Asn Met Lys Asn Ile Glu
 65 70 75 80
 Pro Phe Val Arg Ser Leu Lys Lys Arg Leu Pro Asp Met Pro Val Glu
 85 90 95
 Tyr Val Asp Glu Arg Phe Thr Ser Val Leu Ala His Arg Thr Met Leu
 100 105 110
 Glu Ala Gly Leu Lys Lys Lys Asp Arg Gln Asn Lys Ala Leu Val Asp
 115 120 125
 Glu Ile Ser Ala Thr Ile Ile Leu Gln Ser Tyr Leu Glu Thr Lys Arg
 130 135 140
 Leu
 145

<210> 7601

<211> 356

<212> PRT

<213> B.fragilis

<400> 7601

Cys Ala Ile Cys Ser Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp
 1 5 10 15
 Thr Ile Leu Arg Ala Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr
 20 25 30
 Thr Ser Asp Gln Gly Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu
 35 40 45
 Asn Thr Leu Leu Ile Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu
 50 55 60
 Ile Glu Glu Tyr Asp Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu
 65 70 75 80
 Lys Tyr Asp Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro
 85 90 95
 Gly Val Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp
 100 105 110
 Gly Asn Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe
 115 120 125
 Phe Ala Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala
 130 135 140
 Asp Cys Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His
 145 150 155 160
 Cys Lys His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn
 165 170 175
 Asp Ile Phe Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile
 180 185 190
 Gln Phe Glu Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys
 195 200 205
 Tyr Arg Leu Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp
 210 215 220
 Leu Trp Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr
 225 230 235 240
 Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly
 245 250 255
 Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg
 260 265 270
 Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu Thr
 275 280 285
 Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr
 290 295 300

Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe
 305 310 315 320
 Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr
 325 330 335
 Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys
 340 345 350
 Thr Glu Phe Gly
 355

<210> 7602

<211> 185

<212> PRT

<213> B.fragilis

<400> 7602

Phe Leu Cys Arg Lys Lys Gln Ser Ile Val His Ile Val Tyr Ile Cys
 1 5 10 15
 Lys Lys Arg Ile Thr Ile Leu Thr Ile Asp Phe Leu Tyr His Met Thr
 20 25 30
 Lys Glu Glu Leu Met Arg Lys Ala Ile Glu Leu Ser Arg Glu Asn Val
 35 40 45
 Ala Asn Gly Gly Gly Pro Phe Gly Ala Val Ile Ala Lys Asn Gly Glu
 50 55 60
 Ile Val Ala Thr Gly Val Asn Arg Val Thr Ala Ser Cys Asp Pro Thr
 65 70 75 80
 Ala His Ala Glu Val Ser Ala Ile Arg Ala Ala Ala Ser Lys Leu Gly
 85 90 95
 Thr Phe Asn Leu Ser Gly Tyr Glu Ile Tyr Thr Ser Cys Glu Pro Cys
 100 105 110
 Pro Met Cys Leu Gly Ala Ile Tyr Trp Ala Arg Leu Asp Lys Met Tyr
 115 120 125
 Tyr Gly Asn Asn Lys Thr Asp Ala Lys Asn Ile Gly Phe Asp Asp Ser
 130 135 140
 Phe Ile Tyr Asp Glu Leu Glu Leu Lys Pro Glu Asn Arg Lys Leu Pro
 145 150 155 160
 Ser Glu Val Leu Leu His Asp Glu Ala Ile Lys Ala Phe Glu Glu Trp
 165 170 175
 Met Glu Lys Glu Asp Lys Ile Glu Tyr
 180 185

<210> 7603

<211> 216

<212> PRT

<213> B.fragilis

<400> 7603

Arg Glu Arg Arg Ile Gln Pro Asp Ala Thr Tyr His Gln Tyr Thr Ser
 1 5 10 15
 Thr Ser Ala Thr Asp His Pro Pro Asp Glu Arg Cys Arg Arg Val Arg
 20 25 30
 Asn Arg Arg Asn Arg Arg Asp Asn Arg Met Gln Leu Arg Ser His Pro
 35 40 45
 Gln Gln Phe Ile Gln Gly Thr Glu Lys Ser Lys Arg His Leu Pro Ala
 50 55 60
 Asn His Thr Thr Lys Lys Lys Glu Lys Arg Ser Met Asn Ile Glu Glu
 65 70 75 80
 Leu Leu Asn Lys Tyr Phe Glu Gly Glu Thr Thr Cys Glu Glu Glu Arg
 85 90 95
 Glu Leu Arg Arg Phe Phe Thr Arg Gly Ile Val Pro Glu His Leu Gln

Met	Tyr	Arg	100	Met	Phe	Ala	105	Phe	Leu	Asn	Glu	Glu	110	Asn	Arg	Gln	Ser
		115					120						125				
Lys	Thr	Ala	Val	Pro	Glu	Val	Pro	Lys	Thr	Ser	Val	Pro	Leu	Arg	Arg		
	130					135					140						
Arg	Leu	Leu	Tyr	Ile	Phe	Ser	Gly	Met	Ala	Ala	Gly	Ile	Leu	Leu	Ile		
145					150					155					160		
Leu	Gly	Ile	Ala	Gly	Leu	Asn	Arg	His	Phe	Asn	Thr	Ser	Thr	Ala	Asn		
			165					170						175			
Tyr	Val	Ile	Ile	Asp	Gly	Lys	Cys	Tyr	Thr	Asp	Ala	Lys	Leu	Val	Arg		
		180					185						190				
Glu	Gln	Ala	Met	Ile	Ala	Phe	Arg	Asp	Val	Ser	Ile	Ser	Glu	Glu	Glu		
	195						200					205					
Val	Phe	Ala	Thr	Leu	Phe	Ser	Glu										
	210					215											

<210> 7604

<211> 659

<212> PRT

<213> B.fragilis

<400> 7604

Val	Ser	Leu	Arg	Leu	Ile	Met	Arg	Arg	Ile	Leu	Leu	Thr	Tyr	Ile	Leu		
1				5					10					15			
Leu	Val	Val	Gly	Leu	Leu	Thr	Ala	Gln	Ala	Gln	Phe	Asn	Pro	Thr	Gln		
			20					25					30				
Gln	Val	Asp	Pro	Arg	Thr	Gly	Arg	Asp	Ala	Asn	Gly	Asn	Gln	Ile	Asp		
		35					40					45					
Pro	Ala	Met	Arg	Val	Gln	Glu	Asp	Ser	Thr	Asp	Val	Glu	Ile	Gln	Gly		
	50					55					60						
Leu	Pro	Pro	Thr	Leu	Tyr	Met	Trp	His	Val	Ser	Glu	Asn	Leu	Gly	Thr		
65					70					75					80		
Ile	Gln	Arg	Ile	Pro	Ala	Asp	Thr	Ala	Thr	His	Met	Phe	Gln	Asn	Thr		
			85						90					95			
Asn	Leu	Val	Glu	Gly	Leu	Thr	Gly	His	Tyr	Asn	Tyr	Leu	Gly	Asn	Leu		
		100					105						110				
Gly	Ser	Pro	Arg	Leu	Ser	Arg	Leu	Phe	Phe	Glu	Arg	Arg	Asp	Ala	Glu		
	115						120					125					
Pro	Thr	Ile	Phe	Met	Glu	Pro	Phe	Ser	Ser	Phe	Phe	Ile	Arg	Pro	Asp		
	130					135						140					
Glu	Phe	Asn	Phe	Thr	Asn	Ser	Asn	Val	Pro	Phe	Thr	Asn	Leu	Thr	Tyr		
145					150					155					160		
Tyr	Lys	Ala	Gly	Asn	Lys	Ile	Asn	Gly	Glu	Glu	Arg	Phe	Lys	Ser	Tyr		
			165						170					175			
Phe	Ser	Val	Asn	Val	Asn	Lys	Arg	Leu	Ala	Phe	Gly	Phe	Asn	Phe	Asp		
		180						185					190				
Tyr	Leu	Tyr	Gly	Arg	Gly	Tyr	Tyr	Asn	Asn	Gln	Asn	Thr	Ser	Tyr	Phe		
	195					200						205					
Asn	Ala	Ala	Leu	Phe	Gly	Ser	Tyr	Ile	Gly	Asp	Arg	Tyr	Glu	Ala	Thr		
	210				215						220						
Leu	Leu	Tyr	Ser	Asn	Asn	Tyr	Leu	Lys	Met	Asn	Glu	Asn	Gly	Gly	Ile		
225				230						235					240		
Thr	Asp	Asp	Arg	Tyr	Ile	Thr	Arg	Pro	Glu	Glu	Met	Ala	Glu	Gly	Lys		
			245						250				255				
Lys	Glu	Tyr	Glu	Ser	Gln	Asn	Ile	Pro	Thr	Leu	Leu	Ser	Lys	Ser	Ala		
		260					265						270				
Asn	Arg	Asn	Lys	Asp	Phe	Tyr	Ile	Phe	Leu	Thr	Gln	Arg	Tyr	Lys	Leu		
	275						280					285					
Gly	Phe	Thr	Arg	Glu	Val	Glu	Lys	Ala	Lys	Asp	Asp	Thr	Thr	Asn	Thr		

290 295 300
 Gln Lys Thr Glu Phe Val Pro Val Thr Ser Phe Ile His Thr Met Lys
 305 310 315 320
 Val Glu Arg Ser Arg His Gln Phe Thr Ser Glu Asp Glu Leu Tyr Lys
 325 330 335
 Ile Tyr Pro Glu Ala Tyr Ile Gln Pro Gly Asn Lys Leu Val Asn Asp
 340 345 350
 Ser Thr Ser Tyr Ile Gly Val Lys Asn Thr Leu Gly Ile Ala Leu Leu
 355 360 365
 Glu Gly Phe Asn Lys Tyr Ala Lys Ala Gly Leu Thr Ala Phe Ile Ser
 370 375 380
 His Lys Leu Ser Asn Tyr Arg Leu Met Asp Arg Asp Ser Val Ser Val
 385 390 395 400
 Asp Lys Tyr Ser Glu His Glu Val Phe Val Gly Gly Glu Leu Ala Lys
 405 410 415
 Arg Gln Gly Lys Thr Leu His Tyr Arg Ala Met Gly Glu Val Gly Ile
 420 425 430
 Leu Asp Lys Ala Ile Gly Gln Phe Arg Val Asn Ala Asn Leu Asp Leu
 435 440 445
 Asn Phe Arg Leu Trp Lys Asp Thr Val Ser Phe Ile Ala Arg Gly Ser
 450 455 460
 Ile Ser Asn Thr Leu Pro Ala Phe Tyr Met Arg His Tyr His Ser Lys
 465 470 475 480
 Tyr Phe Tyr Trp Asp Asn Asp Asn Met Glu Lys Glu Phe Arg Thr Arg
 485 490 495
 Leu Glu Gly Glu Leu Asn Ile Glu His Trp Gln Thr Asn Leu Lys Ala
 500 505 510
 Gly Val Glu Asn Ile Lys Asn Tyr Thr Tyr Phe Asn Gln Lys Ala Leu
 515 520 525
 Pro Gln Gln Asn Gly Gly Asn Ile Gln Val Leu Ser Ala Thr Leu Ser
 530 535 540
 Gln Asn Phe Arg Leu Gly Ile Leu His Leu Asp Asn Glu Val Thr Trp
 545 550 555 560
 Gln Lys Ser Ser Asn Asn Thr Val Leu Pro Leu Pro Glu Leu Ser Leu
 565 570 575
 Tyr His Asn Leu Tyr Ile Gln Thr Thr Leu Ala Lys Lys Val Leu His
 580 585 590
 Val Gln Leu Gly Ala Asp Val Arg Tyr Phe Thr Lys Tyr Tyr Ala Pro
 595 600 605
 Ala Tyr Thr Pro Ala Ile Gln Gln Phe His Leu Gln Pro Glu Asp Asp
 610 615 620
 Gln Val Lys Ile Gly Gly Tyr Pro Ile Ile Asn Val Tyr Ala Asn Leu
 625 630 635 640
 Gln Leu Lys Arg Thr Arg Leu Phe Ala Met Met Tyr His Val Asn Gln
 645 650 655
 Gly Asn Gly

<210> 7605

<211> 369

<212> PRT

<213> B.fragilis

<400> 7605

Ser Lys Ser Arg Ile Lys Glu Lys Asn Met Ala Glu Glu Val Val Leu
 1 5 10 15
 Met Lys Gly Asn Glu Ala Ile Ala His Ala Ala Ile Arg Cys Gly Ala
 20 25 30
 Asp Gly Tyr Phe Gly Tyr Pro Ile Thr Pro Gln Ser Glu Val Leu Glu

35 40 45
 Thr Leu Ala Glu Leu Arg Pro Trp Glu Thr Thr Gly Met Val Val Leu
 50 55 60
 Gln Ala Glu Ser Glu Val Ala Ala Ile Asn Met Val Tyr Gly Gly Ala
 65 70 75 80
 Gly Ser Gly Lys Met Val Met Thr Ser Ser Ser Pro Gly Val Ser
 85 90 95
 Leu Lys Gln Glu Gly Ile Ser Tyr Leu Ala Gly Ala Glu Leu Pro Cys
 100 105 110
 Leu Ile Val Asn Val Met Arg Gly Gly Pro Gly Leu Gly Thr Ile Gln
 115 120 125
 Pro Ser Gln Ala Asp Tyr Phe Gln Thr Val Lys Gly Gly Gly His Gly
 130 135 140
 Asp Tyr Lys Leu Ile Ala Leu Ala Pro Ala Ser Val Gln Glu Met Ala
 145 150 155 160
 Asp Phe Val Gly Leu Ala Phe Glu Leu Ala Phe Lys Tyr Arg Asn Pro
 165 170 175
 Ala Ile Ile Leu Ala Asp Gly Val Ile Gly Gln Met Met Glu Lys Val
 180 185 190
 Val Leu Pro Pro Ala Lys Ala Arg Arg Thr Asp Ala Glu Val Ile Ala
 195 200 205
 Gln Cys Pro Trp Ala Ser Thr Gly Lys Thr Lys Asp Arg Lys Pro Asn
 210 215 220
 Ile Ile Thr Ser Leu Glu Leu Arg Pro Glu Glu Met Glu Lys Asn Asn
 225 230 235 240
 Leu Arg Phe Gln Ala Lys Tyr Arg Val Ile Glu Glu Asn Glu Val Arg
 245 250 255
 Phe Glu Glu Ile Asp Cys Glu Asp Ala Glu Tyr Leu Ile Val Ala Phe
 260 265 270
 Gly Ser Met Ala Arg Ile Gly Gln Lys Ala Met Glu Leu Ala Arg Glu
 275 280 285
 Glu Gly Ile Lys Val Gly Met Leu Arg Pro Ile Thr Leu Trp Pro Phe
 290 295 300
 Pro Thr Lys Ala Ile Ala Glu Tyr Ala Asn Lys Val Lys Gly Met Leu
 305 310 315 320
 Val Thr Glu Leu Asn Ala Gly Gln Met Val Glu Asp Val Arg Leu Ala
 325 330 335
 Val Asn Gly Arg Val Lys Val Glu His Phe Gly Arg Leu Gly Gly Ile
 340 345 350
 Val Pro Asp Pro Asp Glu Ile Val Thr Ala Leu Lys Glu Gln Leu Ile
 355 360 365
 Lys

<210> 7606

<211> 332

<212> PRT

<213> B.fragilis

<400> 7606

Leu Pro Glu Arg Lys Pro Cys Arg Ile Ile Val Leu Asn Asn Asn Val
 1 5 10 15
 Pro Gln Ile Ser Leu Tyr Tyr Gln Pro Ser Phe Lys Asp Ser Thr Val
 20 25 30
 Asn Ile Ser Arg Gln Asp Trp Glu Val Ser Tyr Asn Leu Gly Asn Ser
 35 40 45
 Trp Asn Lys Val Lys Arg Asn Lys Lys Ala Asn Ser Ser Leu Tyr Lys
 50 55 60
 Val Asp Ile Thr Ile Tyr Pro Glu Leu Ser Leu Lys Asn Leu Val Ile

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65              70              75              80
Thr Gln Ile Tyr Gln Val Leu Phe Asn Leu Ser Pro Ala Ile Glu Val
      85              90              95
Ser Phe Trp Lys Gly Met Lys Phe Thr Ala Gln Met Val Ile Pro Val
      100             105             110
Tyr Asn Asp Gly Tyr Ala Ser Arg Tyr Asp Lys Leu His Pro Gly Phe
      115             120             125
Leu Glu Leu Ser Gln Thr Val Arg Leu Pro Tyr Asn Phe Trp Ala Thr
      130             135             140
Leu Ala Ile Gly Ser Phe Asn Asn Ser Arg Tyr Gly Ile Asp Phe Asn
      145             150             155             160
Leu Ile His His Phe Lys Asp Glu Arg Phe Ser Ile Glu Gly Arg Ile
      165             170             175
Gly Tyr Thr Gly Thr Gly Tyr Trp Glu Gly Phe Thr Met His Tyr Gly
      180             185             190
Thr Lys Met Arg Ala Thr Trp Ser Leu Gly Gly Ser Phe Tyr Trp Pro
      195             200             205
Arg Tyr Asn Val Glu Leu Asn Ala Arg Val Glu Gln Tyr Leu Leu Lys
      210             215             220
Glu Lys Ala Val Arg Val Glu Ala Ile Arg His Phe Arg Tyr Ala Ser
      225             230             235             240
Ile Gly Phe Tyr Ala Met Lys Ala Lys Asp Val Lys Ala Asn Gly Gly
      245             250             255
Phe Arg Phe Gln Ile Ala Leu Pro Pro Tyr Arg Tyr Lys Arg Lys Gly
      260             265             270
Tyr Ile Pro Arg Ile Thr Pro Ser Asn Asn Met Gly Met Ser Tyr Asn
      275             280             285
Ala Gly Asn Glu Gln Tyr Tyr Tyr Lys Thr Tyr Arg Ser Ala Pro Asp
      290             295             300
Asp Asn Ile Met Lys Asn Asn Ser Phe Asn Pro Tyr Phe Thr Leu Ile
      305             310             315             320
Pro Gln His Tyr Asn Leu Thr Leu Phe Ile Ser Ser
      325             330

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<210> 7607

<211> 153

<212> PRT

<213> B.fragilis

<400> 7607

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Lys Lys Arg Ser Met Asn Lys Val Ile Arg Thr Thr Trp Ile Ile Leu
1      5      10      15
Leu Leu Thr Val Ala Ser Gly Met Ala Arg Ala Gln Gln Gly Leu Gln
      20      25      30
Ile Ala Ser Val Phe Gln Lys Tyr Gly Lys Gln Lys Gly Val Thr Met
      35      40      45
Val Glu Leu Ser Asn Glu Met Leu Glu Thr Tyr Gln Met Thr Leu Tyr
      50      55      60
Lys Ser Leu Val Phe Lys Asp Val Glu Glu Ala Leu Pro Thr Ile Leu
      65      70      75      80
Asn Cys Leu Asp Ala Asp Lys Lys Lys Ala Lys Lys Val Lys Glu Val
      85      90      95
Val Ala Gly Gly Gln Ile Gln Ser Gly Tyr Tyr Gln Leu Pro Gln Leu
      100     105     110
Lys Glu Asp Val Asn Arg Phe Ile Leu Phe Lys Thr Gly Lys Lys Gly
      115     120     125
Ser Ala Thr Leu Ile Tyr Ile Glu Gly Glu Leu Asp Ala Asp Asp Leu
      130     135     140
Val Thr Met Leu Phe Met Lys Lys Asn

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145

150

<210> 7608
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7608

Lys	Asp	Met	Ser	Asn	Lys	Ile	Ile	Lys	Trp	Gly	Phe	Ile	Gly	Cys	Gly
1				5					10					15	
Glu	Val	Thr	Lys	Tyr	Lys	Ser	Gly	Pro	Ala	Phe	Gln	Lys	Val	Glu	Gly
			20					25					30		
Ser	Lys	Val	Val	Ala	Val	Met	Ser	Arg	Asp	Gly	Lys	Lys	Ala	Lys	Ala
		35					40					45			
Tyr	Ala	Lys	Glu	Arg	Asn	Ile	Pro	Lys	Trp	Tyr	Asp	Asp	Ala	Gln	Glu
	50				55						60				
Leu	Ile	Asp	Asp	Pro	Glu	Val	Asn	Ala	Val	Tyr	Ile	Ala	Thr	Pro	Pro
65					70					75					80
Ser	Ser	His	Ala	Thr	Tyr	Ala	Ile	Met	Ser	Met	Lys	Ala	Gly	Lys	Pro
				85					90					95	
Val	Tyr	Ile	Glu	Lys	Pro	Met	Ala	Gln	Thr	Tyr	Glu	Glu	Cys	Ala	Arg
			100					105					110		
Ile	Asn	Arg	Ile	Ser	Gln	Glu	Thr	Gly	Val	Pro	Cys	Phe	Val	Ala	Tyr
	115						120					125			
Tyr	Arg	Arg	Tyr	Leu	Pro	Tyr	Phe	Met	Lys	Val	Lys	Glu	Leu	Val	Asp
	130					135					140				
Lys	Gly	Thr	Ile	Gly	Asn	Val	Ile	Asn	Val	Gln	Ile	Arg	Phe	Ala	Gln
145					150					155					160
Pro	Pro	Arg	Asp	Leu	Asp	Tyr	Asn	Arg	Glu	Asn	Leu	Pro	Trp	Arg	Val
				165					170					175	
Gln	Ala	Asp	Ile	Ala	Gly	Gly	Gly	Tyr	Phe	Tyr	Asp	Leu	Ala	Pro	His
			180					185					190		
Gln	Ile	Asp	Leu	Leu	Gln	Glu	Met	Phe	Gly	Cys	Ile	Leu	Glu	Ala	Ser
		195					200					205			
Gly	Tyr	Lys	Ser	Asn	Arg	Gly	Gly	Leu	Tyr	Pro	Ala	Glu	Asp	Thr	Leu
	210					215					220				
Ser	Ala	Cys	Phe	Gln	Phe	Asp	Asn	Gly	Leu	Val	Gly	Ser	Gly	Ser	Trp
225					230					235					240
Cys	Phe	Val	Ala	His	Asp	Ser	Ala	Arg	Glu	Asp	Arg	Ile	Glu	Ile	Ile
				245					250					255	
Gly	Asp	Lys	Gly	Met	Ile	Cys	Phe	Ser	Val	Phe	Thr	Tyr	Asp	Pro	Ile
			260					265					270		
Ala	Leu	His	Thr	Glu	Arg	Gly	Arg	Glu	Glu	Ile	Met	Val	Glu	Asn	Pro
		275					280					285			
Glu	His	Val	Gln	Gln	Pro	Leu	Ile	Gln	Ala	Val	Val	Asp	His	Leu	Leu
		290				295					300				
Gly	Lys	Ser	Thr	Cys	Ser	Cys	Asp	Gly	Glu	Ser	Ala	Thr	Thr	Thr	Asn
305					310					315					320
Trp	Val	Met	Asp	Lys	Ile	Leu	Gly	Lys	Ile						
				325					330						

<210> 7609
 <211> 376
 <212> PRT
 <213> B.fragilis

<400> 7609

Leu	Phe	Trp	Ser	Met	Lys	Lys	Leu	Gly	Leu	Leu	Leu	Met	Leu	Phe	Thr
1				5					10					15	

Phe Ala Ala Cys Thr Asn Asp Asp Phe Ser Val Leu Gln Glu Asn Glu
 20 25 30
 Glu Ile Thr Leu Pro Thr Ala Val Thr Arg Ala Ser Gly Asp Lys Leu
 35 40 45
 Tyr Asp Leu Leu Gly Tyr Gly Tyr Asp Val Thr Gly Leu Tyr Phe Thr
 50 55 60
 Ser Ala Ser Ala Lys Ser Lys Ile Ile Asp Ile Val Ala Leu Arg Lys
 65 70 75 80
 Asp Tyr Glu Glu Arg Val Asp Ile Gly Ala Val Pro Ser Asn Tyr Ala
 85 90 95
 Arg Met Thr Ser Gly Thr Thr Ala Gln Asp Tyr Thr Arg Asn Val Thr
 100 105 110
 Ser Lys Val Lys Leu Gly Gly Ala Leu Ser Leu Phe Ser Gly Ser Leu
 115 120 125
 Ser Ser Ser Phe Ser Ser Thr Gln His Tyr Thr Ser Lys Tyr Ser Ile
 130 135 140
 Ala Asp Tyr Thr Ser Phe Ile Arg Arg Arg Arg Leu Phe Leu Thr Ala
 145 150 155 160
 Ser Thr Glu Leu Leu Ser Lys Tyr Leu Thr Lys Met Phe Val Asp Asp
 165 170 175
 Leu Ser Lys Gln Ser Pro Ser Phe Ile Ile Gln His Tyr Gly Thr His
 180 185 190
 Val Leu Thr Asp Ile Thr Leu Gly Arg Ile Thr Val Leu Tyr Arg
 195 200 205
 Ser Ser Ile Asn Thr Ser Lys Lys Thr Ala Thr Val Glu Ala Gly Cys
 210 215 220
 Ala Ser Gly Ile Lys Asn Met Phe Asn Leu Ser Val Asp Gly His Tyr
 225 230 235 240
 Asp Gln Thr Leu Val Lys Asp Asn Ser Glu Gln Glu Ile Val Tyr Arg
 245 250 255
 Thr Glu Gly Gly Asp Pro Ser Arg Ala Leu Ile Gly Gln Leu Asn Tyr
 260 265 270
 Asp Ser Lys Asn Pro Ser Val Ile Asp Ile Ser Ser Trp Gln Gln Ser
 275 280 285
 Cys Asp Asp Asn Asn Met Thr Leu Val Asp Ala Glu Pro Gly Ser Leu
 290 295 300
 Ile Pro Ile Tyr Asp Leu Val Ser Asp Met Gly Lys Lys Glu Gln Leu
 305 310 315 320
 Lys Leu Ala Val Glu Asn Tyr Leu Lys Glu His Ser Tyr Val Asp Ile
 325 330 335
 Asp Asp Ser Ser Lys Gly Gly Ala Val Arg Asn Asn Ser Arg Gly His
 340 345 350
 Asn Thr Ser Ser Tyr Gly Asn Ser Thr Arg Val Ile Gly Ala Asn Gly
 355 360 365
 Asn Arg Ser Thr Tyr Arg Arg Pro
 370 375

<210> 7610

<211> 325

<212> PRT

<213> B.fragilis

<400> 7610

Lys Lys Gly Gly Lys Met Ile Gln Lys Thr Tyr Arg Leu Trp Val Ala
 1 5 10 15
 Ser Leu Leu Thr Leu Cys Ser Ala Ser Ala Ala Ala Gln Gln Lys Val
 20 25 30
 Glu Ile Leu Pro Phe Gly Asn Met Asp Gln Trp Val Thr Arg Glu Ile
 35 40 45

Lys Glu Ser Gly Ile Ile Gly Gly Asn Thr Lys Lys Val Tyr Ala Ile
 50 55 60
 Gly Pro Thr Glu Thr Ile Val Gly Ala Lys Pro Tyr Thr Asn Lys Gly
 65 70 75 80
 Gly Ser Pro Trp Gly Thr Ser Asn Val Met Ala Arg Val Ser Gly Ile
 85 90 95
 Thr Lys Thr Asn Thr Ser Val Phe Pro Glu Thr Arg Gly Asp Gly Phe
 100 105 110
 Cys Ala Arg Leu Asp Thr Arg Met Glu Ser Val Lys Val Leu Gly Ile
 115 120 125
 Val Asp Ile Thr Val Leu Ala Ala Gly Ser Met Phe Leu Gly Thr Val
 130 135 140
 His Glu Pro Ile Lys Ser Thr Lys Asn Pro Asn Lys Met Leu Gln Met
 145 150 155 160
 Gly Ile Pro Phe Thr Glu Arg Pro Ser Ala Ile Gln Phe Asp Tyr Lys
 165 170 175
 Val Lys Met Ser Asp Arg Glu Asn Arg Ile Arg Ala Thr Gly Phe Ser
 180 185 190
 Lys Ile Thr Asp Val Pro Gly Lys Asp Phe Pro Ala Val Ile Leu Leu
 195 200 205
 Leu Gln Lys Arg Trp Glu Asp Ala Lys Gly Asn Val Tyr Ala Lys Arg
 210 215 220
 Ile Gly Thr Met Val Asn Tyr Tyr Tyr His Ser Thr Asp Trp Lys Asn
 225 230 235 240
 Gly Ser Lys Tyr Asp Ile Met Tyr Gly Asp Ile Thr Lys Asp Pro Ala
 245 250 255
 Tyr Lys Ala His Met Met Arg Leu Gln Ala Ser Glu Tyr Phe Thr Val
 260 265 270
 Asn Ser Lys Gly Glu Ser Val Pro Ile His Glu Val Ala Trp Gly Glu
 275 280 285
 Ala Asp Asp Val Pro Thr His Met Ile Leu Gln Phe Thr Ser Ser His
 290 295 300
 Gly Gly Ala Tyr Ile Gly Ser Pro Gly Asn Ser Leu Tyr Ile Asp Asn
 305 310 315 320
 Val Lys Leu Ile Tyr
 325

<210> 7611

<211> 411

<212> PRT

<213> B.fragilis

<400> 7611

Asp Lys Arg Gly Tyr Thr Ser Pro Thr Pro Ile Gln Glu Gln Ser Ile
 1 5 10 15
 Pro Ile Leu Leu Gln Gly Lys Asp Leu Leu Gly Cys Ala Gln Thr Gly
 20 25 30
 Thr Gly Lys Thr Ala Ala Phe Ser Ile Pro Ile Leu Gln Lys Leu Tyr
 35 40 45
 Lys Thr Asp His Arg Lys Gly Ile Lys Ala Leu Val Leu Thr Pro Thr
 50 55 60
 Arg Glu Leu Ala Ile Gln Ile Gly Glu Ser Phe Glu Ala Tyr Gly Arg
 65 70 75 80
 Tyr Thr Gly Leu Lys His Ala Val Ile Phe Gly Gly Val Gly Gln Lys
 85 90 95
 Pro Gln Thr Asp Ala Leu Arg Ser Gly Ile Gln Ile Leu Val Ala Thr
 100 105 110
 Pro Gly Arg Leu Leu Asp Leu Ile Ser Gln Gly Phe Ile Ser Leu Asn
 115 120 125

Ser Leu Asp Phe Phe Val Leu Asp Glu Ala Asp Arg Met Leu Asp Met
 130 135 140
 Gly Phe Ile His Asp Ile Lys Arg Ile Leu Lys Leu Leu Pro Ala Arg
 145 150 155 160
 Arg Gln Thr Leu Phe Phe Ser Ala Thr Met Pro Pro Glu Ile Glu Thr
 165 170 175
 Leu Ala Asn Ser Met Leu Thr Lys Pro Glu Lys Val Glu Val Thr Pro
 180 185 190
 Ala Ser Ser Thr Val Asp Ile Ile Ser Gln Gln Val Tyr Phe Val Glu
 195 200 205
 Lys Lys Glu Lys Lys Asp Leu Leu Ile His Leu Leu Lys Asp Thr Ser
 210 215 220
 Ile Glu Ser Val Leu Ile Phe Thr Arg Thr Lys Tyr Gly Ala Asp Lys
 225 230 235 240
 Leu Ala Arg Val Leu Thr Lys Ala Gly Ile Gly Ala Glu Ala Ile His
 245 250 255
 Gly Asn Lys Thr Gln Asn Ala Arg Gln Arg Ala Leu Thr Asn Phe Lys
 260 265 270
 Asn His Thr Leu Arg Ala Leu Ile Ala Thr Asp Ile Ala Ala Arg Gly
 275 280 285
 Ile Asp Val Asp Gln Leu Ser His Val Ile Asn Tyr Glu Leu Pro Asn
 290 295 300
 Val Pro Glu Thr Tyr Val His Arg Ile Gly Arg Thr Gly Arg Ala Gly
 305 310 315 320
 His Glu Gly Val Ala Ile Ser Phe Cys Glu Ser Glu Glu Leu Pro Tyr
 325 330 335
 Leu Lys Asp Ile Gln Lys Leu Ile Gly Lys Asn Ile Pro Val Val Lys
 340 345 350
 Asp His Pro Phe Val Thr Thr Glu Gly Ile Lys Ala Gln Glu Glu Lys
 355 360 365
 Gln Glu Glu Ile Lys Val Lys Ala Lys Ala Asn Lys Thr Tyr Arg Gly
 370 375 380
 Ser Arg Ala Asn Gly Asp Phe Trp Arg Arg Lys Lys Gln Lys Thr Asn
 385 390 395 400
 Gln Pro Ser Ser Thr Lys Gln Glu Lys Arg Lys
 405 410

<210> 7612
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 7612
 Ser Lys Phe Ile Thr Arg Lys Thr Lys Met Tyr Pro Leu Lys Phe Glu
 1 5 10 15
 Pro Ile Leu Lys Gln Thr Leu Trp Gly Gly Asp Lys Ile Ile Pro Phe
 20 25 30
 Lys His Leu Asn Asp Asp Leu Lys Gly Val Gly Glu Ser Trp Glu Ile
 35 40 45
 Ser Gly Val Glu Asn Asn Glu Ser Val Val Ala Asn Gly Pro Asp Lys
 50 55 60
 Gly Leu Thr Leu Thr Asp Met Val Lys Lys Tyr Arg Glu Glu Leu Val
 65 70 75 80
 Gly Glu Ala Asn Tyr Ala Arg Phe Gly Asn Glu Phe Pro Leu Leu Ile
 85 90 95
 Lys Phe Ile Asp Ala Lys Gln Asp Leu Ser Ile Gln Val His Pro Thr
 100 105 110
 Asp Glu Leu Ala Lys Lys Arg His Asn Ser Lys Gly Lys Thr Glu Met
 115 120 125

Trp Tyr Val Val Gly Ala Asp Glu Gly Ala Lys Leu Arg Ser Gly Phe
 130 135 140
 Ser Glu Gln Ile Thr Pro Lys Glu Tyr Lys Asp Arg Val His Asn Asn
 145 150 155 160
 Thr Ile Thr Asp Val Leu Gln Glu Tyr Glu Ile His Pro Gly Asp Val
 165 170 175
 Phe Phe Leu Pro Ala Gly Arg Ile His Ser Ile Gly Ala Gly Ala Phe
 180 185 190
 Ile Ala Glu Ile Gln Gln Thr Ser Asp Ile Thr Tyr Arg Ile Tyr Asp
 195 200 205
 Phe Asn Arg Lys Asp Ala Asn Gly Lys Thr Arg Glu Leu His Thr Ser
 210 215 220
 Gln Ala Leu Asp Ala Ile Asn Tyr Glu Val Leu Asp Asp Tyr Arg Thr
 225 230 235 240
 Lys Tyr Glu Pro Leu Lys Asp Glu Pro Val Glu Leu Val Ala Cys Pro
 245 250 255
 Tyr Phe Thr Thr Ser Val Tyr Asp Met Ser Glu Gln Ile Ser Cys Asp
 260 265 270
 Tyr Ser Glu Leu Asp Ser Phe Val Ile Phe Ile Cys Ile Glu Gly Ser
 275 280 285
 Cys Leu Met Thr Asp Asn Glu Gly Asn Glu Val Arg Leu Gly Ala Gly
 290 295 300
 Glu Thr Val Leu Leu Pro Ala Thr Thr Gln Glu Leu Thr Ile Val Pro
 305 310 315 320
 Gln Glu Gly Asn Val Lys Leu Leu Glu Thr Tyr Val
 325 330

<210> 7613
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 7613
 Val Asn Ile Ile Lys Met Lys Glu Glu Ile Ile Ile Ala Gly Phe Gly
 1 5 10 15
 Gly Gln Gly Val Leu Ser Met Gly Lys Ile Leu Ala Tyr Ser Gly Leu
 20 25 30
 Met Glu Gly Lys Glu Val Thr Trp Met Pro Ala Tyr Gly Pro Glu Gln
 35 40 45
 Arg Gly Gly Thr Ala Asn Val Thr Val Ile Val Ser Asp Asp Lys Ile
 50 55 60
 Ser Ser Pro Ile Leu Ser Lys Tyr Asp Thr Ala Ile Ile Leu Asn Gln
 65 70 75 80
 Pro Ser Leu Glu Lys Phe Glu Ser Arg Val Lys Pro Gly Gly Ile Leu
 85 90 95
 Ile Tyr Asp Gly Tyr Gly Ile Ile Asn Pro Pro Thr Arg Lys Asp Ile
 100 105 110
 Lys Val Tyr Arg Ile Asp Ala Met Asp Ala Ala Asn Glu Met Asn Asn
 115 120 125
 Ala Lys Ala Phe Asn Met Ile Val Leu Gly Gly Leu Leu Lys Leu Arg
 130 135 140
 Pro Ile Val Thr Leu Glu Asn Val Val Lys Gly Leu Lys Lys Thr Leu
 145 150 155 160
 Pro Glu Arg His His His Leu Ile Pro Met Asn Glu Glu Ala Ile Lys
 165 170 175
 Lys Gly Met Glu Leu Ile Arg Glu Ala
 180 185

<210> 7614

<211> 185
 <212> PRT
 <213> B.fragilis

<400> 7614

Asp	Met	Ile	Leu	Pro	Ile	Tyr	Val	Tyr	Gly	Gln	Pro	Val	Leu	Arg	Gln
1				5					10					15	
Val	Ala	Glu	Asp	Ile	Thr	Val	Asp	Tyr	Pro	Asn	Leu	Lys	Glu	Leu	Ile
			20					25					30		
Glu	Asn	Met	Phe	Glu	Thr	Met	Asp	His	Ala	Asp	Gly	Val	Gly	Leu	Ala
		35					40					45			
Ala	Pro	Gln	Ile	Gly	Leu	Pro	Ile	Arg	Val	Val	Val	Ile	Asn	Leu	Asp
	50					55					60				
Val	Leu	Ser	Glu	Asp	Tyr	Pro	Glu	Tyr	Lys	Asp	Phe	Arg	Lys	Ala	Tyr
65					70					75					80
Ile	Asn	Ala	His	Ile	Asp	Val	Val	Glu	Gly	Glu	Glu	Val	Ser	Met	Glu
				85					90					95	
Glu	Gly	Cys	Leu	Ser	Leu	Pro	Gly	Ile	His	Glu	Ser	Val	Lys	Arg	Gly
			100					105					110		
Ser	Lys	Ile	His	Val	Arg	Tyr	Met	Asp	Glu	Asn	Phe	Val	Glu	His	Asn
	115						120					125			
Glu	Val	Val	Glu	Gly	Phe	Leu	Ala	Arg	Val	Met	Gln	His	Glu	Phe	Asp
	130					135					140				
His	Leu	Asp	Gly	Lys	Met	Phe	Ile	Asp	His	Ile	Ser	Pro	Leu	Arg	Lys
145					150					155					160
Gln	Met	Ile	Lys	Gly	Lys	Leu	Asn	Thr	Met	Leu	Lys	Gly	Lys	Ala	Arg
			165						170					175	
Ser	Ser	Tyr	Lys	Met	Lys	Gln	Val	Lys							
			180					185							

<210> 7615
 <211> 312
 <212> PRT
 <213> B.fragilis

<400> 7615

Ser	Ile	Asp	Met	Asn	Asp	Ser	Lys	Leu	Met	Asn	Arg	Ala	Ala	Asp	Asn
1				5					10					15	
Ile	Arg	Ile	Leu	Ala	Ala	Ser	Met	Val	Glu	Lys	Ala	Asn	Ser	Gly	His
			20					25					30		
Pro	Gly	Gly	Ala	Met	Gly	Gly	Ala	Asp	Phe	Val	Asn	Val	Leu	Phe	Ser
		35					40					45			
Glu	Phe	Leu	Val	Tyr	Asp	Pro	Gln	Asn	Pro	Arg	Trp	Glu	Gly	Arg	Asp
	50					55					60				
Arg	Phe	Phe	Leu	Asp	Pro	Gly	His	Met	Ser	Pro	Met	Leu	Tyr	Ser	Val
65					70					75					80
Leu	Ala	Phe	Thr	Gly	Lys	Tyr	Thr	Leu	Asp	Glu	Leu	Lys	Gln	Phe	Arg
				85					90					95	
Gln	Trp	Gly	Ser	Pro	Thr	Pro	Gly	His	Pro	Glu	Val	Asn	Val	Asp	Arg
			100					105					110		
Gly	Val	Glu	Asn	Thr	Ser	Gly	Pro	Leu	Gly	Gln	Gly	His	Thr	Tyr	Ala
		115					120					125			
Val	Gly	Ala	Ala	Ile	Ala	Ala	Lys	Phe	Leu	Lys	Ala	Arg	Phe	Gly	Glu
	130					135					140				
Val	Met	Asn	Gln	Thr	Ile	Tyr	Ala	Tyr	Ile	Ser	Asp	Gly	Gly	Ile	Gln
145					150					155					160
Glu	Glu	Ile	Ser	Gln	Gly	Ala	Gly	Arg	Ile	Ala	Gly	Thr	Leu	Gly	Leu
				165					170					175	
Asp	Asn	Leu	Ile	Met	Phe	Tyr	Asp	Ser	Asn	Asp	Val	Gln	Leu	Ser	Thr

			180					185					190				
Asn	Thr	Glu	Asp	Val	Thr	Thr	Glu	Asn	Val	Ala	Met	Lys	Tyr	Glu	Ala		
		195					200						205				
Trp	Asp	Trp	Lys	Val	Ile	Thr	Ile	Asn	Gly	Asn	Asp	Pro	Asp	Glu	Ile		
		210					215					220					
Arg	Lys	Ala	Leu	Thr	Glu	Ala	Lys	Ala	Glu	Lys	Asn	Arg	Pro	Thr	Leu		
225					230						235				240		
Ile	Ile	Gly	Lys	Thr	Met	Gly	Lys	Gly	Ala	Arg	Arg	Ala	Asp	Gly			
			245						250				255				
Ser	Ser	Tyr	Glu	Ala	Asp	Cys	Ala	Thr	His	Gly	Ala	Pro	Leu	Gly	Gly		
		260						265					270				
Asp	Ala	Tyr	Val	Asn	Thr	Ile	Lys	Asn	Leu	Gly	Gly	Asn	Pro	Glu	Asn		
		275					280					285					
Pro	Phe	Thr	Ile	Phe	Pro	Glu	Val	Ala	Glu	Leu	Tyr	Ala	Lys	Arg	Arg		
	290					295					300						
Gly	Arg	Thr	Glu	Glu	Asp	Cys	Cys										
305					310												

<210> 7616

<211> 376

<212> PRT

<213> B.fragilis

<400> 7616

Pro	Asn	Cys	Met	Pro	Asn	Ala	Ala	Glu	Glu	Leu	Lys	Lys	Ile	Val	Ala		
1				5				10					15				
Asp	Lys	Tyr	Ala	Ala	Lys	Ala	Glu	Trp	Ala	Lys	Ala	Asn	Pro	Glu	Lys		
		20					25					30					
Ala	Ala	Lys	Leu	Ala	Glu	Phe	Phe	Ser	Gly	Lys	Ala	Pro	Lys	Val	Asn		
		35				40					45						
Trp	Asp	Ala	Ile	Glu	Gln	Lys	Ala	Gly	Gly	Ala	Thr	Arg	Ala	Gly	Ser		
	50				55					60							
Ala	Thr	Val	Leu	Gly	Ala	Leu	Ala	Thr	Gln	Val	Glu	Asn	Met	Ile	Val		
65				70				75						80			
Ser	Ser	Ala	Asp	Leu	Ser	Asn	Ser	Asp	Lys	Thr	Asp	Gly	Phe	Leu	Lys		
		85						90					95				
Lys	Thr	His	Ala	Phe	Lys	Lys	Gly	Asp	Phe	Ser	Gly	Ala	Phe	Leu	Gln		
		100					105						110				
Ala	Gly	Val	Ser	Glu	Leu	Ser	Met	Ala	Cys	Ile	Cys	Ile	Gly	Met	Ser		
	115					120					125						
Leu	His	Gly	Gly	Ile	Ile	Ala	Ala	Cys	Gly	Thr	Phe	Phe	Val	Phe	Ser		
	130					135					140						
Asp	Tyr	Met	Lys	Pro	Ala	Leu	Arg	Met	Ala	Ala	Leu	Met	Glu	Gln	Pro		
145				150					155					160			
Val	Lys	Phe	Ile	Trp	Thr	His	Asp	Ala	Phe	Arg	Val	Gly	Glu	Asp	Gly		
		165						170						175			
Pro	Thr	His	Glu	Pro	Val	Glu	Gln	Glu	Ala	Gln	Val	Arg	Leu	Leu	Glu		
	180							185					190				
Lys	Leu	Lys	Asn	His	Lys	Gly	His	Asn	Ser	Met	Leu	Val	Leu	Arg	Pro		
	195						200					205					
Ala	Asp	Val	Glu	Glu	Thr	Thr	Ile	Ala	Trp	Lys	Leu	Ala	Met	Glu	Asn		
	210					215					220						
Met	Ser	Thr	Pro	Thr	Ala	Leu	Ile	Leu	Ser	Arg	Gln	Asn	Ile	Val	Asn		
225				230						235					240		
Leu	Pro	Ala	Gly	Thr	Asp	Tyr	Ser	Gln	Ala	Ala	Lys	Gly	Ala	Tyr	Ile		
		245						250					255				
Ile	Ala	Asp	Ala	Asp	Glu	Asn	Pro	Asp	Val	Ile	Leu	Val	Ala	Ser	Gly		
		260				265						270					
Ser	Glu	Val	Ser	Thr	Leu	Val	Ala	Gly	Ala	Glu	Leu	Leu	Arg	Lys	Glu		

275	280	285
Gly Val Lys Val Arg Ile Val Ser Ala Pro Ser Glu Gly Leu Phe Arg		
290	295	300
Asn Gln Ser Lys Glu Tyr Gln Glu Ser Ile Leu Pro Ala Gly Ala Lys		
305	310	315
Ile Phe Gly Leu Thr Ala Gly Leu Pro Val Asn Leu Glu Gly Leu Val		
	325	330
Gly Ser Asn Gly Lys Val Phe Gly Leu Glu Ser Phe Gly Phe Ser Ala		
	340	345
Pro Tyr Lys Val Leu Asp Glu Lys Leu Gly Phe Thr Ala Glu Asn Val		
	355	360
Tyr Asn Gln Val Lys Ala Met Leu		365
370	375	

<210> 7617
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 7617
Ser Asn Asn Met Asp Asn Arg Thr Glu Gln Tyr Ser Leu Arg Glu Leu
1 5 10 15
Leu Glu Ser Ile Thr Glu Asn Ile Lys Thr Lys Arg Leu Ala Asp Val
20 25 30
Phe Arg Phe Ile Ser Phe His Pro Gly Glu Met Tyr Gly Pro His Gln
35 40 45
His Leu Arg Ile Glu Ile Asn Tyr Val Lys Lys Gly Ser Cys Ile Leu
50 55 60
His Pro Asp His Glu Ser Ile Thr Phe Arg Glu Gly Glu Ile Met Ile
65 70 75 80
Ile Thr Ser Asp Ile Ser His Leu Phe Glu Ala Gly Ala Asp Gly Thr
85 90 95
Thr Leu Met Gln Leu Glu Phe Leu Pro Glu Ile Phe Ser His Phe Asn
100 105 110
Leu Asn Ala Thr Ala Asp Ser Asn Gly Ser Ala Leu Leu Trp Thr Asn
115 120 125
Arg Phe Lys Ile Lys Ile Glu
130 135

<210> 7618
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 7618
His Ile Ile Met Glu Glu Asn Asn Asn Ile Tyr Pro Ile Phe Asp Arg
1 5 10 15
Met Leu Thr Arg Gln Asp Lys Glu Glu Leu Leu Lys Gln Arg Gly Val
20 25 30
Met Ile Trp Phe Thr Gly Leu Ser Gly Ser Gly Lys Ser Thr Ile Ala
35 40 45
Ile Ala Leu Glu Arg Glu Leu His Lys Arg Gly Leu Leu Cys Arg Ile
50 55 60
Leu Asp Gly Asp Asn Ile Arg Thr Gly Ile Asn Asn Asn Leu Gly Phe
65 70 75 80
Ser Glu Thr Asp Arg Val Glu Asn Ile Arg Arg Ile Ala Glu Val Ser
85 90 95
Lys Leu Phe Ile Asp Thr Gly Ile Ile Thr Ile Ala Ala Phe Ile Ser
100 105 110

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Pro Asn Asn Asp Ile Arg Glu Met Ala Ala Arg Ile Val Gly Pro Asp
    115                      120                      125
Asp Phe Leu Glu Ile Phe Val Ser Thr Pro Leu Ala Glu Cys Glu Lys
    130                      135                      140
Arg Asp Val Lys Gly Leu Tyr Ala Lys Ala Arg Arg Gly Glu Ile Lys
    145                      150                      155                      160
Asn Phe Thr Gly Ile Ser Ala Pro Phe Glu Ala Pro Glu His Pro Ala
    165                      170                      175
Leu Ser Leu Asp Thr Ser Val Leu Ser Leu Glu Glu Ser Val Asn Arg
    180                      185                      190
Leu Leu Glu Ile Val Leu Pro Arg Val Ser Arg His Glu
    195                      200                      205

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<210> 7619

<211> 898

<212> PRT

<213> B.fragilis

<400> 7619

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Leu Ile Ile Ile Pro Thr Thr Met Lys Lys Ser Ile Ile Leu Leu Phe
1      5      10      15
Ile Ser Leu Leu Leu Ser Pro Leu Cys Ile Lys Ala His Gln Pro Glu
20     25     30
Phe Ser Thr Ala Gly Phe Phe Arg Leu Ala Asp Ser Gly Arg Asp Val
35     40     45
Tyr Ser Met Asn Pro Ala Trp Arg Phe Tyr Lys Gly Asn Cys Pro Gly
50     55     60
Ala Glu Thr Gly Asn Phe Asp Asp Arg Ser Trp Thr Val Val Ser Leu
65     70     75     80
Pro His Gly Ile Glu Tyr Leu Pro Thr Glu Ala Ser Gly Cys Ile Asn
85     90     95
Tyr Gln Gly Glu Val Trp Tyr Arg Lys Gln Phe Thr Pro Asp Ala Ala
100    105    110
Leu Lys Gly Lys Lys Leu Phe Leu His Phe Glu Ala Ile Met Gly Lys
115    120    125
Ser Lys Ile Tyr Val Asn Gly Lys Leu Leu Ala Glu His Phe Gly Gly
130    135    140
Tyr Leu Pro Val Val Val Asp Val Thr Asp Ala Leu Glu Phe Gly Lys
145    150    155    160
Glu Asn Leu Ile Ala Val Trp Ala Asp Asn Ser Asn Asp Pro Asn Tyr
165    170    175
Pro Pro Gly Lys Gln Gln Glu Val Leu Asp Phe Thr Tyr Phe Gly Gly
180    185    190
Ile Tyr Arg Asp Cys Trp Leu Ile Ala His Asn Gln Val Phe Ile Thr
195    200    205
Asp Pro Asn Tyr Glu Asn Glu Glu Ala Gly Gly Gly Leu Phe Val Ala
210    215    220
Tyr Asn Asn Val Ser Asp His Ser Ala Glu Val Leu Leu Lys Ile Gln
225    230    235    240
Ile Arg Asn Ser Gly Arg Lys Ala Phe Lys Gly Val Val Glu Tyr Glu
245    250    255
Leu Gln Gln Pro Asp Gly Gln Gln Val Ala Ser Leu Asn Ser Val Ile
260    265    270
Arg Ile Lys Pro Gly Lys Ser Thr Tyr Ser Ser Asp Lys Leu Thr Val
275    280    285
Lys Gly Pro Met Leu Trp Ser Pro Glu Asn Pro Ala Leu Tyr Asn Leu
290    295    300
Ile Val Arg Ile Arg Asp Glu Lys Gly Asn Pro Ile Asp Gly Tyr Arg
305    310    315    320

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Arg	Arg	Ile	Gly	Ile	Arg	Ser	Ile	Glu	Phe	Lys	Gly	Glu	Asp	Gly	Phe
			325						330					335	
Trp	Leu	Asn	Gly	Lys	Pro	Tyr	Glu	Ala	Pro	Leu	Ile	Gly	Ala	Asn	Arg
			340					345					350		
His	Gln	Asp	Phe	Ala	Ile	Val	Gly	Asn	Ala	Val	Pro	Asn	Ser	Ile	His
		355					360					365			
Trp	Arg	Asp	Ala	Lys	Lys	Leu	Arg	Asp	Ala	Gly	Met	Lys	Val	Ile	Arg
	370					375					380				
Asn	Ala	His	Cys	Pro	Gln	Asp	Pro	Ala	Phe	Met	Asp	Ala	Cys	Asp	Glu
385					390					395					400
Leu	Gly	Leu	Phe	Val	Ile	Val	Asn	Thr	Pro	Gly	Trp	Gln	Phe	Trp	Asn
			405						410					415	
Asp	Ala	Pro	Val	Phe	Ala	Gln	Arg	Val	Tyr	Ser	Asp	Ile	Arg	Asn	Leu
		420						425					430		
Val	Arg	Arg	Asp	Arg	Asn	His	Pro	Cys	Val	Trp	Met	Trp	Glu	Pro	Ile
	435						440					445			
Leu	Asn	Glu	Thr	Trp	Tyr	Pro	Ala	Asn	Phe	Ala	Arg	Asn	Ala	His	Asp
	450					455					460				
Ile	Val	Glu	Ala	Glu	Tyr	Pro	Tyr	Pro	Tyr	Cys	Tyr	Ser	Gly	Cys	Asp
465					470					475					480
Ser	Glu	Ala	Lys	Gly	Lys	Glu	His	Phe	Gln	Ile	Leu	Phe	Thr	His	Pro
			485						490					495	
Leu	Asn	Gly	Asp	Gly	Gly	Ala	Tyr	Ser	Thr	Asn	Asp	Ile	Lys	Lys	Gln
		500						505					510		
Leu	Thr	Tyr	Phe	Thr	Arg	Glu	Trp	Gly	Asp	Asn	Val	Asp	Asp	Trp	Asn
	515						520					525			
Ser	His	Asn	Ser	Pro	Ser	Arg	Val	Ala	Arg	Asn	Trp	Gly	Glu	Gln	Ala
	530					535					540				
Met	Leu	Ile	Gln	Ala	Gln	His	Tyr	Ala	Arg	Pro	Ser	Tyr	Lys	Tyr	Thr
545					550					555					560
Ser	Tyr	Asp	Ala	Leu	Tyr	Arg	Thr	Pro	Arg	Gln	His	Val	Gly	Gly	Cys
			565						570					575	
Leu	Trp	His	Ser	Phe	Asp	His	Gln	Arg	Gly	Tyr	His	Pro	Asp	Pro	Phe
		580						585					590		
Tyr	Gly	Gly	Val	Met	Asp	Val	Phe	Arg	Gln	Pro	Lys	Tyr	Ser	Tyr	Tyr
	595						600					605			
Met	Phe	Met	Ala	Gln	Arg	Ser	Pro	Ile	Lys	Glu	Glu	Arg	Leu	Phe	Gln
	610					615					620				
Thr	Gly	Pro	Met	Val	Tyr	Ile	Ala	His	Glu	Met	Thr	Pro	Phe	Ser	Gly
625					630					635					640
Lys	Asp	Val	Thr	Val	Tyr	Ser	Asn	Cys	Asp	Glu	Val	Arg	Leu	Thr	Tyr
			645						650					655	
Leu	Lys	Gly	Gly	Gln	Thr	Gln	Thr	Tyr	Val	His	Lys	Gln	Glu	Lys	Glu
		660						665					670		
Gly	Met	Pro	His	Pro	Val	Ile	Thr	Phe	Glu	Asn	Val	Tyr	Asp	Phe	Met
		675					680					685			
Lys	Asp	Lys	Ala	Leu	Ser	Arg	Gln	Gly	Lys	Gln	Ala	Asp	Val	Tyr	Leu
	690					695					700				
Leu	Ala	Glu	Gly	Leu	Ile	Asp	Gly	Lys	Val	Val	Ala	Thr	His	Lys	Val
705					710					715					720
Ala	Pro	Ala	Arg	Arg	Pro	Glu	Lys	Leu	Leu	Trp	Val	Asp	Asn	Glu	
			725						730				735		
Gly	Thr	Asp	Leu	Lys	Ala	Asp	Gly	Ser	Asp	Phe	Val	Thr	Val	Ile	Ala
		740					745						750		
Ala	Val	Ala	Asp	Lys	Asp	Gly	Asn	Ile	Lys	Arg	Leu	Asn	Asn	Tyr	Thr
	755					760						765			
Ile	Lys	Phe	Gln	Ile	Glu	Gly	Glu	Gly	Arg	Ile	Leu	Gly	Gly	Ala	Gly
	770					775					780				
Asn	Leu	Ala	Asn	Pro	Ala	Pro	Val	Arg	Trp	Gly	Thr	Ala	Pro	Ile	Leu

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785              790              795              800
Val Gln Ser Thr Leu Lys Pro Gly Lys Ile Lys Ile Thr Ala Ser Val
              805              810              815
Leu Phe Glu Gly Ser Gln Met Pro Ser Ser Ala Val Leu Glu Leu Glu
              820              825              830
Ser Lys Pro Gly Asp Phe Pro Gln Ile Tyr Asp Arg Glu Glu Ser Ala
              835              840              845
Leu Ile Pro Asn Phe Thr Gly Gln Glu Ala Val Asn Ala Leu Ala Pro
              850              855              860
Lys Ser Glu Ala Ala Leu Glu Lys Glu Arg Leu Gln Lys Ala Glu Asn
865              870              875              880
Ala Ala Lys Leu Lys Glu Val Glu Gln Gln Gln Glu Glu Phe Gly Glu
              885              890              895
Lys Lys

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<210> 7620
<211> 418
<212> PRT
<213> B.fragilis

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<400> 7620
Ser Lys Gln Met Asn His Lys Gly Pro Tyr Met Arg Lys Asn Ile Thr
1              5              10              15
Ile Gly Thr Thr Leu Arg Arg Ile Ser Leu Ile Leu Phe Cys Leu Leu
              20              25              30
Pro Leu Lys Gly Ile Cys Gln Thr Gly Glu Ala Thr Val Asp Ala Leu
              35              40              45
Val Lys Met Gly Phe Glu Asn Val Gly Trp Thr Glu Asp Thr Glu Glu
              50              55              60
Arg Val Phe Val Ile Gln Asn Ser Ala Tyr Arg Leu Glu Gly Val Gly
65              70              75              80
Ile Gly Lys Ala Val Asp Leu Ile Gln Lys Met Gly Leu Pro Glu Asn
              85              90              95
Lys Pro Cys Arg Leu Ile Val Leu Asp Asn Asn Val Pro Gln Ile Ser
              100              105              110
Leu Tyr Tyr Gln Pro Met Lys Gly Asp Ser Ile Ala Glu Val Ser Arg
              115              120              125
Ala Asp Trp Ser Val Ser Tyr Asp Leu Gly Glu Gly Trp Lys Gln Ala
              130              135              140
Arg Arg Ile Lys Lys Gln Asn Ser Ser Leu Phe Lys Val Asp Ile Val
145              150              155              160
Val Tyr Pro Glu Leu Leu Phe Arg Asn Tyr Ile Leu Ser Lys Val Tyr
              165              170              175
Glu Ile Val Val Asn Val Ser Pro Ala Ile Glu Val Ser Leu Trp Lys
              180              185              190
Gly Met Lys Leu Thr Gly Gln Val Ile Phe Pro Ile Tyr Asn Asp Tyr
              195              200              205
Gly Gln Arg Tyr Lys Gln Ile Arg Pro Gly Phe Val Thr Leu Ser Gln
              210              215              220
Thr Val Arg Leu Pro Gln Arg Thr Phe Leu Thr Ala Ser Val Gly Phe
225              230              235              240
Phe Asn Lys Phe Arg Trp Gly Gly Asp Leu Lys Ala Lys His Phe Phe
              245              250              255
Lys Asp Glu Arg Phe Ser Val Asp Ala Arg Ile Gly Tyr Thr Gly Arg
              260              265              270
Gly Tyr Phe Glu Asp Trp Ala Phe Tyr His Gly Thr Lys Trp Thr Leu
              275              280              285
Thr Gly Ser Ile Gly Ala Asn Phe Tyr Trp Pro Lys Tyr Asn Thr Gln

```

290 295 300
 Phe Ser Leu Lys Gly Glu Arg Tyr Leu Glu Gly Glu Tyr Gly Ala Arg
 305 310 315 320
 Phe Asp Met Ile Arg His Phe Arg Tyr Ala Ser Ile Gly Phe Tyr Gly
 325 330 335
 Met Lys Val Gln His Ala Gly Asn Lys Gly Leu Asn Gly Gly Phe Leu
 340 345 350
 Phe Gln Ile Ala Leu Pro Pro Tyr Lys Tyr Lys Arg Lys Gly Tyr Ile
 355 360 365
 Pro Arg Val Ile Pro Asn Asn Phe Gly Phe Gln Tyr Asn Ala Gly Asn
 370 375 380
 Glu Arg Ile Tyr Gly Lys Gly Tyr Ser Pro Gln Ala Ser Asp Asn Val
 385 390 395 400
 Met Glu Asn Asn Ser Phe Asn Pro Tyr Phe Ile Lys Ser Glu Leu Leu
 405 410 415
 Asn Phe

<210> 7621

<211> 253

<212> PRT

<213> B.fragilis

<400> 7621

Lys Leu Gln Ile Met Met Lys Lys Ile Phe Leu Ile Gly Leu Phe Leu
 1 5 10 15
 Cys Cys His Leu Ala Leu Ser Ala Gln Leu Thr Tyr Gly Thr Thr Gly
 20 25 30
 Leu Leu His Ala Pro Ser Ala Glu Met Gln Arg Asp Lys Thr Val Met
 35 40 45
 Ile Gly Gly Asn Phe Leu Asn Lys Glu Ile Thr Pro Pro Thr Trp Asp
 50 55 60
 Tyr His Thr Tyr Asn Tyr Phe Leu Asn Val Thr Ile Phe Pro Trp Leu
 65 70 75 80
 Glu Ile Ala Tyr Thr Cys Thr Leu Phe Gln Ser Gln Thr Ile Gly Ile
 85 90 95
 Asp Trp Lys Val Gly Lys Lys Lys Phe Thr Asn Gln Asp Arg Tyr Phe
 100 105 110
 Ser Ala Arg Leu Arg Val Leu Lys Glu Gly Gln Leu Trp Lys Tyr Met
 115 120 125
 Pro Ala Val Val Val Gly Thr Ser Asp Pro Tyr Thr Glu Ser Gly Asp
 130 135 140
 Gly Gln Val Gly Ser Ala Asp Gly Asn Gly Tyr Phe Cys Arg Phe Tyr
 145 150 155 160
 Val Ala Ala Thr Lys His Ile Pro Ile Gly Lys Glu Lys Ile Gly Val
 165 170 175
 His Leu Ser Tyr Leu Tyr Asn Arg Arg Val Asp Tyr His Leu Asn Gly
 180 185 190
 Leu Ala Gly Gly Leu Thr Tyr Ala Pro Ser Phe Ala Pro Asp Leu Thr
 195 200 205
 Val Ile Ala Glu Tyr Asp Ala Lys Asp Phe Ala Phe Gly Ala Thr Tyr
 210 215 220
 Leu Leu Phe Asn His Leu His Ala Gln Val Glu Leu Gln Arg Met Lys
 225 230 235 240
 Tyr Phe Thr Gly Gly Leu Thr Tyr Lys Ile Tyr Leu Lys
 245 250

<210> 7622

<211> 73

<212> PRT

<213> B.fragilis

<400> 7622

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Lys Gln Lys Ile Met Lys Gly Leu Asn Val Leu Ala Ala Phe Leu Gly
1          5          10          15
Gly Ala Ala Val Gly Ala Ala Leu Gly Ile Leu Phe Ala Pro Glu Lys
          20          25          30
Gly Glu Asp Thr Arg His Lys Ile Ala Glu Ile Leu Arg Lys Lys Gly
          35          40          45
Ile Lys Leu Asn Arg Asn Glu Met Glu Asn Leu Val Asp Glu Ile Ala
          50          55          60
Ala Glu Ile Lys Gly Glu Val Ile Asp
65          70

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<210> 7623

<211> 138

<212> PRT

<213> B.fragilis

<400> 7623

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Val Phe Glu Ile Gln Asn Val Leu Met Gln Gln Pro Ala Arg Met Leu
1          5          10          15
Leu His Gln Glu Asp Leu Leu Ile Leu Val Gln Val Val His Val Val
          20          25          30
Ala Leu Val Ile Ile Val Thr Phe Ile Arg Ile Val Leu Gln Thr Leu
          35          40          45
Glu His Ile Gln Glu Val Leu Val Gly Leu Leu Leu Leu Ile Leu Val
          50          55          60
Glu Val Arg Gln Gln His Leu Leu Val Leu Ile Gln Met Lys Val Pro
65          70          75          80
Val Val Leu Met Ala Leu Leu His Leu Leu Glu Ala Ile Pro Gln Val
          85          90          95
Val Leu Leu Ala Leu Val Val Val Ile Leu Pro Val Ala Glu Val Val
          100          105          110
Val Ala Val Leu Val Arg Gln Val Val Glu Val Ala Thr Ala Glu Val
          115          120          125
Ala Val Val Glu Asp Lys Lys Ile Val Asn
          130          135

```

<210> 7624

<211> 390

<212> PRT

<213> B.fragilis

<400> 7624

```

Leu Phe Gly Val Pro Ile Cys Leu Leu His Ala Val Cys Arg His Ile
1          5          10          15
Asn Asn Glu His Ile Ile Met Gly Leu Leu Glu Phe Asn Lys Leu Pro
          20          25          30
Ile Asn Thr Leu Val Gly Ala Asp Trp Arg Thr Phe Lys Ala Ile Thr
          35          40          45
Gly Gly Arg Glu Ile Asp Ala Ala Tyr Thr Gly Lys Tyr Arg Leu Thr
          50          55          60
Lys Ala Val Cys Arg Leu Leu Ser Thr Leu Ala Pro Leu Gln Asp Lys
65          70          75          80
Arg Tyr Glu Lys Leu Leu Ala Asn Lys Pro Leu Glu His Asp Pro Val
          85          90          95
Phe Ile Leu Gly His Trp Arg Ser Gly Thr Thr Phe Val His Asn Val

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<210> 7625
<211> 269
<212> PRT
<213> B.fragilis
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<400> 7625																
Thr	Ser	Ala	Val	Leu	Thr	Lys	Leu	Lys	Lys	Val	Leu	Ser	Val	Val	Asn	
1				5					10						15	
Thr	Thr	Val	Leu	Gln	Pro	Glu	Leu	Val	Phe	Val	Thr	Pro	Met	Glu	Val	
			20					25					30			
Lys	Phe	Thr	Pro	Ala	Val	Val	Val	Ala	Gln	Gly	Glu	Thr	Pro	Glu	Val	
		35					40					45				
Ala	Leu	Ala	Thr	Leu	Tyr	Phe	Asn	Glu	Lys	Thr	Asn	Thr	Trp	Glu	Ala	
	50					55					60					
Glu	Glu	Asn	Tyr	Ala	Thr	Tyr	Gln	Asn	Gly	Val	Phe	Val	Gly	Asn	Val	
65				70						75					80	
His	His	Phe	Ser	Lys	Phe	Lys	Phe	Gly	Phe	Glu	Glu	Ala	Asp	Ser	Lys	
			85						90					95		
Ala	Thr	Ala	Glu	Ala	Ala	Leu	Asp	Ser	Met	Lys	Phe	Asp	Lys	Ala	Cys	
			100					105					110			
Tyr	Thr	Glu	Gly	Glu	Thr	Ala	Lys	Val	Lys	Met	Glu	Ile	Asn	Trp	Lys	

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      115              120              125
Gly Gly Ile Lys Cys Glu Gly Gly Ala Ser Val Glu Glu Ile Ile Lys
  130              135              140
Lys Ala His Ser Thr Leu Thr Thr Thr Thr Ile Lys Met Val Ser Ala
 145              150              155              160
Ala Leu Glu Glu Ala Ile Lys Asp Asp Asn Ala Asn Val Thr Pro Gly
      165              170              175
Ala Ala Phe Thr Asp Lys Lys Phe Thr Tyr Glu Leu Glu Val Pro Ala
      180              185              190
Tyr Thr Gln Leu Thr Gly Phe Asp Val Thr Arg Asn Val Ile Lys Thr
      195              200              205
Thr Tyr Val Leu Pro Phe Ala Val Tyr Asn Lys Ala Thr Lys Ala Ile
      210              215              220
Glu Lys Lys Thr Ala Glu Val Thr Ile Ser Lys Ile Ser Ser Val Val
 225              230              235              240
Val Arg Thr Ile Glu Ala Ile Gly His Gly His Gly His Gly His Gly
      245              250              255
Asp Asp Leu Asn Ala Gly Gly Gly Ile Ile Ile Ser Glu
      260              265

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<210> 7626
 <211> 64
 <212> PRT
 <213> B.fragilis

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<400> 7626
Ile Ala Leu Val Lys Val Gln Val Phe Ser Tyr Ser Lys Thr Ile Lys
 1      5      10      15
Leu Tyr Ile Ile Lys Ser Val Lys Asp Tyr Ser Asn Glu Ile Pro Ser
      20      25      30
Lys Thr Gly Phe His Lys Ile Ile Ser Pro Tyr Phe Ser Lys Leu Lys
      35      40      45
Phe Lys Tyr Ser Asn Asn Thr Thr Gln Lys Lys Lys Thr Tyr Leu Asn
      50      55      60

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<210> 7627
 <211> 257
 <212> PRT
 <213> B.fragilis

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<400> 7627
Lys Lys Glu Val Met Thr Lys Glu Glu Ile Ile Lys Pro Glu Asn Leu
 1      5      10      15
Val Tyr Lys Lys Pro Thr Leu Met Asn Asp Asn Gly Met His Tyr Cys
      20      25      30
Pro Gly Cys Ser His Gly Val Val His Lys Leu Ile Ala Glu Val Ile
      35      40      45
Glu Glu Met Gly Leu Glu Asp Lys Ala Val Gly Ile Ser Pro Val Gly
      50      55      60
Cys Ala Val Phe Ile Tyr Asn Tyr Leu Asp Ile Asp Trp Gln Glu Ala
      65      70      75      80
Ala His Gly Arg Ala Pro Ala Leu Ala Thr Ala Ile Lys Arg Leu Trp
      85      90      95
Pro Asp Arg Leu Val Phe Thr Tyr Gln Gly Asp Gly Asp Leu Ala Cys
      100      105      110
Ile Gly Thr Ala Glu Thr Ile His Ala Leu Asn Arg Gly Glu Asn Ile
      115      120      125
Thr Ile Ile Phe Ile Asn Asn Ala Ile Tyr Gly Met Thr Gly Gly Gln
      130      135      140

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Met Ala Pro Thr Thr Leu Met Gly Met Lys Thr Ala Thr Cys Pro Tyr
 145 150 155 160
 Gly Arg Asp Pro Glu Leu His Gly Tyr Pro Leu Lys Ile Thr Glu Ile
 165 170 175
 Ala Ala Gln Leu Glu Gly Thr Ala Tyr Val Thr Arg Gln Ser Val Gln
 180 185 190
 Ser Val Pro Ala Ile Arg Lys Ala Lys Lys Ala Ile Arg Lys Ala Phe
 195 200 205
 Glu Asn Ser Met Asn Gly Lys Gly Ser Asn Leu Val Glu Ile Val Ser
 210 215 220
 Thr Cys Ser Ser Gly Trp Lys Met Thr Pro Glu Lys Ala Asn Lys Trp
 225 230 235 240
 Met Glu Glu His Met Phe Pro Phe Tyr Pro Leu Gly Asp Leu Lys Asp
 245 250 255
 Lys

<210> 7628

<211> 410

<212> PRT

<213> B.fragilis

<400> 7628

Lys Ser Phe Phe Met Asp Phe Cys Tyr Leu Phe Val Thr Tyr Asn Arg
 1 5 10 15
 Ile Met Ser Ile Phe Ile Thr Lys Asn Ile Gln Thr Asn Asn Met Lys
 20 25 30
 Lys Glu Val Arg Ile Lys Glu Pro Val Arg Ile Arg Thr Lys Arg Leu
 35 40 45
 Ser Asn Gly Cys Glu Ser Ile Tyr Leu Asp Ile Tyr Met Asp Gly Arg
 50 55 60
 Arg Arg Tyr Glu Phe Leu Lys Leu Tyr Ile Ile Pro Glu His Thr Arg
 65 70 75 80
 Thr Asp Lys Asp Leu Asn Gln Ser Thr Met Lys Leu Ala Ser Ala Val
 85 90 95
 Lys Ala Gln Arg Ile Ile Glu Leu Gln Asn Gly Val Tyr Gly Phe Asn
 100 105 110
 His Gln Gln Glu Lys Lys Asp Ile Met Leu Ile Asp Tyr Ile Lys Tyr
 115 120 125
 Leu Ala Asp Lys Asp Ile Glu Lys Thr Ser Arg Lys Val Ser Met Tyr
 130 135 140
 Thr Leu Ile Tyr His Leu Gln His Tyr Asp Lys Met Gly Ile Arg Leu
 145 150 155 160
 Arg Gln Val Asp Lys Lys Tyr Ile Leu Gly Phe Val Glu Tyr Leu Lys
 165 170 175
 Thr Ala Thr Gln Lys His Cys Lys Ser Val Lys Asn Ile Ser Ala Asn
 180 185 190
 Thr Gln Val His Tyr Tyr Lys Val Phe His His Cys Leu Asn Ser Ala
 195 200 205
 Val Ile Asp Glu Ile Ile Thr Ser Asn Pro Met Asp Lys Ile Lys Asn
 210 215 220
 Glu Glu Lys Pro Lys Arg Arg Thr Glu Arg Ala Phe Leu Thr Ile
 225 230 235 240
 Asp Glu Leu Lys Ile Leu Ser Gln Thr Asp Phe His Asn Ala Thr Leu
 245 250 255
 Lys Lys Ala Phe Leu Phe Ser Cys Phe Cys Gly Leu Arg His Ser Asp
 260 265 270
 Ile Val Ala Leu Thr Trp Gly Asn Leu Lys Lys Gly Lys Val Gly Lys
 275 280 285

Met Glu Leu His Met Thr Gln Gln Lys Thr Gln Glu Ile Leu Ser Leu
 290 295 300
 Pro Leu Ser Lys Glu Ala Leu Lys Gln Leu Pro Val Arg Gly Lys Val
 305 310 315 320
 Pro Asp Thr Glu Lys Val Phe Lys Gly Leu Ile Ser Leu Gly Arg Thr
 325 330 335
 Asn Glu Ile Leu Pro Lys Trp Ala Ala Lys Ala Gly Ile Gln Lys His
 340 345 350
 Ile Thr Phe His Ser Ala Arg His Thr His Ala Thr Met Met Ile Thr
 355 360 365
 Leu Gly Ala Asp Leu Tyr Thr Val Ser Lys Leu Leu Gly His Thr Asn
 370 375 380
 Ile Gln Thr Thr Gln Ile Tyr Ala Lys Ile Val Asp Glu Ser Lys Glu
 385 390 395 400
 Lys Ala Ile Asp Leu Ile Pro Asp Ile Thr
 405 410

<210> 7629
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7629
 Ile Ala Leu Ser His Asn Tyr Glu Thr Arg Tyr Ile Val Thr Asp Leu
 1 5 10 15
 Thr Val Asn Ser Ile Gln Glu Phe Lys Asn Gly Tyr Ile Ile Lys Arg
 20 25 30
 Ala Asp Thr Ser Tyr Leu Asn Ser Lys Leu Arg Asn Glu Lys Ile Arg
 35 40 45
 Ser Asp Thr Ile Arg Ile Arg Leu Ser Phe Val Arg Ala Ile Met Arg
 50 55 60
 Phe Thr Leu Gln Cys Arg Phe Ile Thr Tyr Val Thr Tyr Pro Phe Ala
 65 70 75 80
 Ser Tyr Lys

<210> 7630
 <211> 283
 <212> PRT
 <213> B.fragilis

<400> 7630
 His Met Asp Ser Phe Phe Gln Thr Leu Ala Phe Thr Tyr Leu Leu Tyr
 1 5 10 15
 Pro Ile Leu Gly Leu Leu Leu Val Gly Leu Gly Ile Phe Ile Ala Lys
 20 25 30
 Lys Asn Ala Leu Leu Asn Asn Lys Arg Leu Val Gly Tyr Thr Ile Gly
 35 40 45
 Ala Ile Val Leu Leu Thr Leu Pro Ala Leu Leu Gly Phe Leu Asp Tyr
 50 55 60
 Gly Phe Met Pro Tyr Gly Tyr Ile Phe Leu Ala Met Leu Tyr Leu Leu
 65 70 75 80
 Leu Gly Gly Tyr Asn Ile Arg Met Ile Ala Trp Val Tyr Lys Asp Asp
 85 90 95
 Tyr Lys Tyr Arg His Glu Ile Ile Leu Thr Gly Phe Ile Leu Val Val
 100 105 110
 Ser Met Leu Phe Phe Thr Leu Val Phe Asn Leu Cys Asn Glu Leu Lys
 115 120 125
 Tyr Gly Leu Trp Ala Ser Ala Cys Leu Leu Pro Phe Val Ile Val Ser

130 135 140
 Val Phe Ile Arg Thr Tyr Arg Ile Phe Ile Ala Ile Pro Ile Pro Val
 145 150 155 160
 Tyr Glu Val Trp Arg Tyr Thr Asp Asp Thr Glu Gln Asp Gly Tyr Phe
 165 170 175
 Asp Pro Gly Ser Leu Gln Val Leu Gln Ile Glu Leu Tyr Lys Gln Glu
 180 185 190
 Ser Asp Arg Glu Pro Val Lys Leu Ser Val Lys Ala Pro Asp Glu Met
 195 200 205
 Gln Phe Gly Thr Trp Phe His Arg Met Ile Asp Asp Tyr Asn Leu Lys
 210 215 220
 Ser Pro Gln Ala Pro Ile Asp Asp Tyr Ala Ala Lys Glu Gly Gly Trp
 225 230 235 240
 Ile Phe Tyr Arg Lys Pro Thr Leu Leu Ser Pro Arg His Tyr Ile Asp
 245 250 255
 Phe Asn Leu Thr Val Lys Asp Asn Arg Ile Arg Ser Arg Asp Val Ile
 260 265 270
 Val Ala Lys Arg Val Met Glu His Asn Glu Asn
 275 280

<210> 7631
 <211> 188
 <212> PRT
 <213> B.fragilis

<400> 7631
 Ala Glu Arg Leu Arg Ser Pro Arg Lys Trp Ala Gln Glu Pro His Ser
 1 5 10 15
 Pro Ser Gly Cys Leu Leu Arg Met Ser Tyr Lys Ile Arg Lys Arg Glu
 20 25 30
 Arg Thr Ala Thr Cys Pro Gly Glu Ala Val Gly Thr Gln Pro Ser Glu
 35 40 45
 Val Leu Pro Ala Lys Glu Glu Thr Thr Glu Lys Glu Glu Asp Leu Arg
 50 55 60
 Ala Thr Ala Ala Gly Thr Glu Lys Ala Thr Ile Leu Ile Ala Glu Asp
 65 70 75 80
 Thr Asp Ser Asn Phe Asp Leu Leu Asn Ala Ile Leu Gly Arg Lys Tyr
 85 90 95
 Arg Leu Val Arg Ala Arg Asp Gly Met Glu Ala Val Thr Met Tyr Asp
 100 105 110
 Glu Val Asn Pro Asp Leu Ile Leu Met Asp Ile Lys Met Pro Asn Leu
 115 120 125
 Asp Gly Leu Glu Ala Thr Arg Ile Ile Arg Gln Leu Ser Ala Glu Val
 130 135 140
 Pro Ile Ile Ala Gln Ser Ala Tyr Ala Tyr Glu His Asp Arg Asn Ala
 145 150 155 160
 Ala Glu Glu Ala Gly Cys Asn Asp Phe Ile Ser Lys Pro Ile Ala Gln
 165 170 175
 Glu Lys Leu Lys Glu Lys Ile Lys Lys Trp Leu Lys
 180 185

<210> 7632
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7632
 Ser Asn Leu Leu Val Ile Cys Gly Asn Gly Lys Leu Val Tyr Leu Trp
 1 5 10 15

Arg Lys Met Glu Leu Asp Asn Val Leu Arg Ala Asp Cys Tyr Asp Thr
 20 25 30
 Glu Glu Glu Lys Lys Leu Ser Pro Asp Met Arg Thr Val Ser Ala Ser
 35 40 45
 Lys Phe Ile Ala Leu Tyr Met Pro Lys Asp Ser Asn Lys Leu Met Glu
 50 55 60
 Leu Tyr
 65

<210> 7633

<211> 742

<212> PRT

<213> B.fragilis

<400> 7633

Lys Leu Cys Pro Met Asp Tyr Val Leu Tyr Leu Leu Arg Ala Leu Tyr
 1 5 10 15
 Arg Val Lys Trp Trp Ile Leu Leu Gly Thr Ala Leu Ile Thr Ala Ile
 20 25 30
 Val Tyr Phe Arg Thr Gly Asn Leu Arg Gly Gly Tyr Asn Val Glu Ala
 35 40 45
 Thr Leu Tyr Thr Gly Val Val Ser Gly Tyr Gly Val Glu Glu Ser Thr
 50 55 60
 Lys Val Asp Trp Ala Leu Ala Gln Asn Ser Met Asp Asn Leu Ile Asn
 65 70 75 80
 Ile Ile Gln Ala Glu Ser Thr Leu Lys Arg Val Ser Leu Arg Leu Phe
 85 90 95
 Ser Arg Ile Leu Val Lys Gly Ser Pro Asp Lys Asp Asn Glu Gly Ile
 100 105 110
 Thr Ala Ala Ser Tyr Asn Tyr Thr Tyr Asn His Met Lys Asn Ser Pro
 115 120 125
 Asp Gly Lys Ala Leu Ile Ala Leu Ile Asp Arg Thr Ser Glu Asp Lys
 130 135 140
 Thr Met Glu Asn Phe Gln Lys Tyr Glu Arg Gln Asp Lys Asn Asn Tyr
 145 150 155 160
 Ile Tyr Gly Leu Phe Tyr Phe Gln His Val Tyr Tyr Ser Tyr Gln Ala
 165 170 175
 Leu Lys Asn Ile Lys Val Glu Arg Lys Gly Ser Ser Asp Leu Leu Lys
 180 185 190
 Val Ser Tyr Gln Ser Gly Asp Pro Gly Ile Ala Tyr Asn Thr Ile Glu
 195 200 205
 Ile Leu Met Lys Glu Phe Val Asn Glu Tyr Gln Ala Leu Arg Tyr Glu
 210 215 220
 Gly Thr Asp Lys Val Ile Glu Tyr Phe Lys Ala Glu Leu Lys Arg Ile
 225 230 235 240
 Gly Gly Asp Leu Thr Lys Tyr Glu Asp Asp Leu Thr Gln Tyr Asn Val
 245 250 255
 Glu Asn Arg Ile Ile Asn Tyr Tyr Asp Glu Thr Lys Glu Ile Ala Ala
 260 265 270
 Ile Asn Lys Glu Phe Glu Leu Arg Glu Gln Asn Val Leu Phe Glu Tyr
 275 280 285
 Asn Ser Ser Arg Ala Met Leu Glu Glu Leu Glu Arg Gln Met Asp Ala
 290 295 300
 Asn Ser Lys Arg Ile Ile His Asn Val Glu Leu Val Asp Lys Leu Lys
 305 310 315 320
 Gln Ala Thr Asn Leu Thr Gly Lys Ile Ile Glu Met Glu Thr Ile Ser
 325 330 335
 Thr Ala Gly Asp Ser Thr Gly Met Lys Leu Thr Glu Tyr Lys Asn Arg
 340 345 350

Leu Ile Gln Ser Arg Arg Asp Leu Ser Thr Ile Ala Asn Gln Tyr Val
 355 360 365
 Ala Gly Gln Gln Thr Lys Glu Gly Val Ala Lys Ala Thr Ile Val Glu
 370 375 380
 Gln Trp Leu Asp Gln Leu Leu Phe Glu Lys Ala Lys Ala Glu Leu
 385 390 395 400
 Lys Ile Val Gln Arg Ser Arg Ser Asp Leu Asn Ala Lys Tyr Thr His
 405 410 415
 Phe Ala Pro Val Gly Thr Thr Ile Lys Arg Lys Glu Arg Thr Ile Ser
 420 425 430
 Phe Thr Glu Gln Asn Tyr Leu Thr Asn Leu Lys Ser Tyr Asn Asp Ala
 435 440 445
 Leu Leu Arg Lys Lys Asn Leu Glu Met Thr Ala Ala Ile Leu Lys Val
 450 455 460
 Leu Asn Pro Pro Ala Tyr Pro Ile Asn Glu Glu Val Ala Ser Arg Lys
 465 470 475 480
 Lys Ile Val Met Met Ala Ala Ala Gly Ser Phe Ile Phe Phe Val Ala
 485 490 495
 Leu Phe Leu Leu Ile Glu Ala Ile Asp Arg Thr Leu Arg Asp Ser Thr
 500 505 510
 Arg Thr Arg Lys Gln Thr Gly Ser Ile Val Leu Gly Ala Tyr Pro Ala
 515 520 525
 Pro Leu Lys Leu Ser Pro Ile Ser Lys Gln Cys Glu Glu Ile Ala Thr
 530 535 540
 Arg Tyr Met Ser Ser Ala Ile Leu Arg Phe Phe Thr Glu Arg Lys Glu
 545 550 555 560
 Gly Met Pro Phe Ile Leu Asn Leu Leu Ser Thr Glu Gln Gly Ser Gly
 565 570 575
 Lys Thr Tyr Leu Ala Glu Gln Leu Gln Gly Tyr Trp Glu Ser Ile Gly
 580 585 590
 Leu Lys Val Arg Arg Leu Thr Asp Gly Thr Asp Phe Asn Ser Asn Ser
 595 600 605
 Ser Ala Phe Thr Leu Ala Lys Asn Leu Thr Asp Leu Tyr Thr Pro Gly
 610 615 620
 Thr Glu Asp Ile Leu Ile Val Glu Tyr Pro Ser Leu Glu Lys Ala Asn
 625 630 635 640
 Ile Pro Thr Pro Leu Leu Gln Asp Ala Gln Leu Asn Leu Leu Val Ala
 645 650 655
 Ser Ala Val His Gly Trp Lys Ala Thr Asp Lys Val Leu Leu Gln Lys
 660 665 670
 Leu Lys Ser Gln Leu Gly Thr Ser Pro Tyr Leu Tyr Leu Asn Arg Ala
 675 680 685
 Pro Lys Tyr Glu Val Glu Thr Tyr Thr Gly Met Leu Pro Pro Tyr Thr
 690 695 700
 Phe Val His Lys Gln Met Tyr Arg Leu Ser Gln Leu Ala Leu Thr Glu
 705 710 715 720
 Ser Leu Phe Asn Trp Lys Lys Asn Ser Arg Lys Lys Pro Gln Asp Ile
 725 730 735
 Asp Asp Asp Asp Asp Glu
 740

<210> 7634

<211> 312

<212> PRT

<213> B.fragilis

<400> 7634

Met Val Thr Thr Arg Ile Leu Lys Ile Pro Phe His Pro Lys Ala Ile
 1 5 10 15

His Gly Ile Tyr Gly Val Asn Tyr Tyr Phe His Lys Lys Asp Ala Leu
 20 25 30
 Pro Gln Arg Leu Gln Phe Glu Ala Thr Val Glu Tyr Cys Gly Gln Tyr
 35 40 45
 Met Asp Glu Tyr Ser Ile Tyr His Ile Ser Lys Lys Glu Tyr Val Val
 50 55 60
 Asn Arg Asn Glu Thr Asp Glu Tyr Leu Tyr Asp Ile Ala Lys Lys Cys
 65 70 75 80
 Ala Asp Ile Ile Tyr Pro Ile Thr Val Leu Leu Asp Arg Asn Gly His
 85 90 95
 Pro Val Phe Ile Arg Thr Asp Asp Ile Val Glu Arg Trp Ser Glu Lys
 100 105 110
 Arg His Glu Leu Asp Arg Tyr Tyr Lys Gly Asp Thr Ala Glu Tyr Tyr
 115 120 125
 Leu Ser Lys Val Glu Glu Ala Val Asn Asp Pro Val Lys Met Met Gln
 130 135 140
 Leu Ile Ser Asn Asp Leu Phe Phe Ser Gln Leu Phe Thr Phe Gln Tyr
 145 150 155 160
 Tyr Asn Thr Val Lys Phe Glu Asn Asp Ile Met Leu Ile Pro Phe Ser
 165 170 175
 Ile Pro Leu Arg Phe Ser Ser Ile Gln Glu Met Asp Ile Asp Ser Phe
 180 185 190
 Ser Asp Ser Glu Ser Asp Thr Ile His Ile Ile His Lys Gly Ser Thr
 195 200 205
 Lys Asn Gln Tyr Lys Asn Gly Asp Phe Tyr Gly Ser Ser Glu Met Asn
 210 215 220
 Ala Ser Gln Tyr Asn Ala Ile Leu Ser Ala Lys Tyr Arg Ile Arg Tyr
 225 230 235 240
 Ser Leu Gly Lys Glu Arg His Asp Phe Glu Ala Ile Glu Gly Asp Phe
 245 250 255
 Val Val Ser Lys Glu Glu Glu Asp Val Asn Ser Ile Lys Met Glu Ala
 260 265 270
 Tyr Lys Leu Asp Glu Lys Val Leu Glu Tyr Gly Phe Asp Lys Glu Leu
 275 280 285
 Glu Lys Arg Glu Arg Glu Gln Lys Arg Ile Asp Asn Ser Leu Met Asn
 290 295 300
 Lys Leu Lys Arg Tyr Phe Lys Thr
 305 310

<210> 7635

<211> 156

<212> PRT

<213> B.fragilis

<400> 7635

Asn Asp Asn Thr Met Ala Ile Tyr Ser Leu His Glu Met Ala Gly Leu
 1 5 10 15
 Leu Lys Thr Gly Leu Trp Gln Gly Gly Glu Val Glu Lys Leu Gly Tyr
 20 25 30
 Ile Gly Thr Ala Val Pro His Ala Ser Pro Ala Pro Ala Cys Gly Leu
 35 40 45
 Thr Gly Val Tyr Ile Ser Tyr Asp Thr Met Leu Glu Arg Cys Glu Val
 50 55 60
 Ser Met Gln Gly Gly Gly Cys Glu Leu Phe Ile Ser Gln Tyr His Pro
 65 70 75 80
 Tyr Thr Gly Thr Tyr Met Thr Tyr Val Leu Glu Ser Asn Leu Ser Asp
 85 90 95
 Arg Arg Leu Leu Leu Ala Lys Leu Glu Glu Ile Leu Ala Asp Arg Arg
 100 105 110

Asn	Pro	Tyr	Leu	Trp	Ser	His	Asn	Leu	Tyr	Lys	Arg	Asn	Ser	Phe	Gly
		115					120					125			
Ile	Glu	Arg	Arg	Tyr	Asp	Thr	Gly	His	Ser	Ser	Met	Trp	Gly	Gly	Arg
	130				135						140				
Ile	Ala	Val	Pro	Arg	Gln	Ser	Lys	Phe	Phe	Gly	Arg				
145					150						155				

<210> 7636

<211> 428

<212> PRT

<213> B.fragilis

<400> 7636

Arg	Ile	Asn	Thr	Lys	Met	Lys	Glu	Asn	Ile	Ser	Arg	Phe	Lys	Ile	Asp
1				5					10					15	
Tyr	Ser	Val	Cys	Lys	Asn	Ser	Pro	Gly	Gly	Ser	Ile	Leu	Glu	Lys	Val
		20						25					30		
Ser	Asn	Phe	Gln	Lys	Glu	Leu	Gln	Leu	His	Glu	Glu	Asn	Ser	Leu	His
		35					40					45			
Ile	Tyr	Val	Lys	Ser	Pro	Met	Val	Ser	Gly	Cys	Gly	Arg	Glu	Val	Glu
	50					55					60				
Val	Val	Asp	Arg	Lys	Thr	Asn	Glu	Val	Lys	Lys	Met	Leu	Met	Phe	Gly
65					70					75					80
Ser	Asn	Ser	Tyr	Leu	Asp	Ala	Thr	Gly	Ile	Pro	Ser	Val	Val	Glu	Lys
				85					90					95	
Ala	Val	Arg	Val	Ile	Thr	Asp	Tyr	Gly	Val	Gly	Ser	Gly	Gly	Val	Pro
			100					105					110		
Leu	Leu	Ser	Gly	Thr	Thr	Ile	Phe	Gln	Asn	Glu	Leu	Glu	Lys	Glu	Ile
		115					120					125			
Ala	Lys	Leu	Thr	Gly	Phe	Asp	Asp	Thr	Ile	Leu	Phe	Ser	Ser	Gly	Phe
	130					135					140				
Thr	Ala	Asn	Ile	Gly	Val	Ile	Val	Gly	Leu	Ile	Arg	Pro	Asn	Asn	Leu
145					150					155					160
Leu	Val	Tyr	Asp	Arg	Leu	Asn	His	Ala	Ser	Leu	Ile	Asp	Gly	Ala	Leu
				165					170					175	
Met	Ser	Gly	Ala	Lys	Met	Val	Arg	Tyr	Lys	His	Asn	Asp	Pro	Lys	Ala
			180					185					190		
Leu	Glu	Lys	Ile	Leu	Lys	Glu	Asn	Ala	Gly	Gln	Tyr	Lys	Asp	Gly	Met
	195						200					205			
Met	Val	Val	Thr	Asp	Gly	Val	Phe	Ser	Met	Asp	Gly	Asp	Ile	Ala	Asp
	210					215					220				
Ile	Pro	Ala	Ile	Leu	Glu	Ile	Thr	Lys	Lys	Tyr	Asn	Ala	Leu	Leu	Leu
225					230					235					240
Ile	Asp	Asp	Ala	His	Ala	Thr	Gly	Val	Ile	Gly	Gly	Asp	Gly	Ala	Gly
				245						250				255	
Thr	Leu	Ser	Tyr	Tyr	Asp	Ile	Lys	Glu	Arg	Glu	Asn	Ile	Ile	Val	Thr
			260					265					270		
Gly	Thr	Leu	Ser	Lys	Ala	Ile	Gly	Ser	Ile	Gly	Gly	Phe	Ile	Thr	Ala
	275						280					285			
Lys	Gln	Asn	Ile	Ile	Asp	Tyr	Leu	Arg	Val	Tyr	Ala	Arg	Ser	Asn	Met
	290					295					300				
Tyr	Ser	Thr	Ser	Leu	Pro	Gln	Ser	Ile	Cys	Ala	Ala	Ser	Leu	Glu	Val
305					310					315					320
Ile	Lys	Glu	Met	Arg	Asn	Thr	Asp	Ile	Gln	Asn	Ala	Leu	Lys	Arg	Asn
				325					330					335	
Ala	Glu	Tyr	Val	Arg	Asn	Gly	Leu	Lys	Ala	Leu	Gly	Phe	Asn	Thr	Leu
			340					345					350		
Asn	Ser	Met	Thr	Pro	Ile	Ile	Pro	Val	Ile	Val	Gly	Asp	Glu	Tyr	Ile
		355					360					365			

Leu Thr Gln Ile Thr Lys Glu Leu Tyr Asp Arg Asp Ile Phe Thr Asn
 370 375 380
 Ala Ile Phe Pro Pro Val Val Pro Pro Asn Met Cys Arg Ile Arg Ile
 385 390 395 400
 Gly Val Met Ser Ser His Thr Phe Glu Asp Cys Asp Arg Leu Ile Asn
 405 410 415
 Ala Phe His Glu Ile Gly Lys Lys Tyr Gly Leu Ile
 420 425

<210> 7637
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7637
 Asn Glu Asp Thr Met Phe Gly His Lys Ser Phe Leu Arg Ile Gly Ala
 1 5 10 15
 Leu Gly Asp Ser Ser Ile Ser Gly Leu Tyr Lys Asp Ser Tyr Glu Leu
 20 25 30
 Glu Asn Cys His Phe Ser Phe Asn Gln Gly Thr Asn Thr Asp Gly Lys
 35 40 45
 Pro Gln Thr Asp Val Arg Gly Gly Thr Leu Tyr Leu Thr Tyr Ala Gly
 50 55 60
 Leu Pro Gln Asp Asp Met Leu Arg Trp Ile Leu Asn Pro Lys Lys Tyr
 65 70 75 80
 Glu Asp Gly Ala Ile Val Ile Cys Asp Asp Ser Asp Glu Pro Leu Glu
 85 90 95
 Lys Ile Leu Phe Glu Gln Ala Ala Cys Thr Gly Leu Asn Ile Glu Tyr
 100 105 110
 Thr Gln Lys Gly Lys Ala Tyr Ile His Thr Lys Ile Ile Leu Gln Ala
 115 120 125
 Arg Lys Ile Lys Val Gly Glu Thr Thr Phe Glu Asn Arg Trp Thr Ile
 130 135 140
 Asn Glu
 145

<210> 7638
 <211> 605
 <212> PRT
 <213> B.fragilis

<400> 7638
 Asn Ile Leu Thr Met Ala Ser Thr Asn Leu Asp Ala Val Ser Val Glu
 1 5 10 15
 Ile Lys Val Ala Gly Lys Val Cys Asp Tyr Val Thr Met Glu Leu Phe
 20 25 30
 Gln Ser Val Ser Thr His His Arg Phe Lys Ile Lys Val Asn Tyr Arg
 35 40 45
 Pro Asp Lys Pro Ser Val Trp Ala Ile Gly Pro Asp Val Ile Phe Lys
 50 55 60
 Gln Leu Gly Glu Lys Val Ser Ile Ile Met Thr His His Glu Ser Gly
 65 70 75 80
 Glu Lys Thr Glu Phe His Gly Leu Ile Ser Asp Ile His Val Glu Gly
 85 90 95
 Phe Asp Gly Asn Gln Gly Phe Val Ile Leu Glu Gly Gly Ser Pro Thr
 100 105 110
 Ile Leu Leu Asp Arg Asp Pro Ala Met Asp Cys Tyr Val Glu Gln Asn
 115 120 125
 Leu Asn Thr Ile Val Ser Asp Ile Leu Asp Lys Ser Gly Val Lys Met

130		135		140
Asn Val Thr Asn Asn Pro Lys His Thr Asp Ile Ile Pro Tyr Val Ala				
145		150		155
Arg Tyr Lys Glu Thr Ser Tyr Gly Phe Leu Ser Arg Leu Leu Arg Ser				160
	165		170	175
Tyr Gly Glu Trp Phe Tyr Tyr Asn Gly Glu Thr Leu Gln Ile Gly Asp				
	180		185	190
Pro Glu Ile Glu Thr Glu Ser Arg Ala Gly Tyr Asp Val Asp Leu Thr				
	195	200		205
Gly Val Ser Ile Asn Ala Thr Ile Arg Ser Leu Asn His Ser Thr Tyr				
	210	215		220
Glu Phe Asp Pro Val Asn Asp Lys Phe Tyr Tyr Asp Tyr Ser Gly Thr				
225		230		235
Pro Lys Gly Ala Thr Leu Gly Ser Arg Ser Ala Glu Lys Cys Ser Glu				240
	245		250	255
Pro Ile Phe Pro Thr Glu Ala Lys Leu Pro Ser Ile Arg Pro Ala Tyr				
	260		265	270
Ser Ala Met Asp Leu Glu His Tyr Gly Asp Ala Gly Phe His Arg Asn				
	275	280		285
Tyr Ser Gln Leu Ser Gln Ile Lys Ala Ser Ser Arg Tyr Cys Gly Ile				
	290	295		300
Arg Leu Gly Glu Leu Val Thr Arg Val Pro Glu Ser Phe Pro Gly				
305		310		315
Val Lys Ile Thr Asp Leu Gly Arg Tyr Arg Ile Thr Glu Ile Thr His				
	325		330	335
Thr Val Asp Ser Arg Gly Arg Tyr Ser Asn Thr Phe Cys Gly Val Pro				
	340		345	350
Gly Gly Thr Pro Val Met Pro Trp Gly Asp Ala Val Met Pro Val Ala				
	355		360	365
Tyr Pro Glu Met Ala Arg Val Val Ser Asn Asp Asp Pro Lys Asn Gln				
	370	375		380
Gly Arg Val Lys Val Gln Phe Met Trp Gln Glu Val Asp Gly Gly Glu				
385		390		395
Ser Tyr Trp Met Arg Val Gln Ser Pro Asp Ala Gly Lys Ser Asp Lys				
	405		410	415
Val Ala Lys Asn Arg Gly Phe Val Phe Ile Pro Glu Pro Gly Asp Leu				
	420		425	430
Val Met Val Gly Phe Glu Gln Gly Asn Pro Asp Arg Pro Tyr Val Thr				
	435		440	445
Gly Ser Leu Phe Tyr Lys Ala Asn Ser Glu Gly Ala Ala Thr Asp Asn				
	450	455		460
Ser Val Lys Ser Ile Arg Thr Arg Ser Gly His Ile Leu Glu Phe Asn				
465		470		475
Asp Asp Glu Gly Gly Asp Trp Gly Ile Thr Ile Lys Asp Arg Asn Gly				
	485		490	495
Cys Met Phe His Leu Asp Thr Lys Gly Glu Glu Ile Leu Ile Ser Ala				
	500		505	510
Pro Gln Lys Ile Thr Ile Asp Ala Lys Asp Ile Val Ile Ser Ala Asn				
	515		520	525
Asn Gln Ile Asn Met Val Ala Asp Lys Gly Ile Leu Ala Asn Gly Arg				
	530	535		540
Glu Asn Ile Ser Phe Val Thr Lys Thr Met Gln Thr Asp Val Glu Asn				
545		550		555
Asp Cys Val Leu Ser Ala Lys Glu Phe Thr Gly Ile Thr Glu Lys Thr				
	565		570	575
Glu Ile Gln Ser Thr Lys Glu Asn Leu Val Leu Ser Ser Gly Lys Glu				
	580		585	590
Val Ile Asn Lys Ser Lys Ser Lys Lys Ile Arg Leu Ser				
	595		600	605

<210> 7639
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 7639

Lys	Gln	Ile	Thr	Met	Gly	Phe	Phe	Asp	Arg	Leu	Phe	Lys	Gly	Lys	Glu
1				5				10					15		
Val	Phe	Ala	Asp	Arg	Arg	Asn	Pro	Asp	Met	Val	Cys	Glu	Ile	Thr	Leu
			20					25				30			
Cys	Gly	Gln	Ser	His	Ile	Leu	Ser	Glu	Phe	Asp	Ile	Ala	Tyr	Glu	Pro
		35					40					45			
Asp	Asn	Ser	Ser	Lys	Glu	Tyr	Met	Glu	Ala	Tyr	Ala	Val	Phe	Ser	Glu
	50					55					60				
Pro	Val	Asn	Ala	Glu	Val	Glu	Asn	Trp	Ile	Met	Arg	Ala	Asp	Arg	Lys
65					70					75					80
Glu	Asn	Gly	Thr	Val	Arg	Phe	Tyr	Leu	Asn	Ser	Asp	Ala	Met	Asp	Glu
			85						90					95	
Gly	Ala	Leu	Phe	Glu	Ile	Asn	Phe	Ser	Asn	Ala	Ser	Cys	Val	His	Tyr
			100					105					110		
His	Asn	Val	Ser	Gln	Gly	Asp	Thr	Ser	Val	Lys	Thr	Ile	Val	Met	Thr
	115						120					125			
Phe	Pro	Ser	Val	Arg	Met	Gly	Gly	Asp	Glu	Phe	Glu	Leu	Lys	Arg	
	130					135					140				

<210> 7640
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 <212> PRT
 <213> B.fragilis

<400> 7640

Val	Asn	Thr	Thr	Lys	Gln	Thr	Thr	Ser	Met	Glu	Trp	Tyr	Thr	Lys	Tyr
1				5				10					15		
Leu	Ser	Ile	Phe	Gly	Leu	Thr	Leu	Ser	Glu	Ile	Pro	Gly	Asp	Thr	Leu
			20					25				30			
Ser	Glu	Ile	Gly	Thr	Leu	Leu	His	Glu	Lys	Gln	Ser	Asp	Thr	Pro	Leu
		35					40					45			
Val	Ser	Val	Val	Val	Ile	Ala	His	Asn	Glu	Glu	Pro	His	Ile	Leu	Ser
	50					55					60				
Cys	Leu	Trp	Ser	Leu	Gly	Asn	Asn	Glu	Tyr	Ser	Tyr	Pro	Ile	Glu	Ile
65					70				75						80
Leu	Val	Val	Asn	Asn	His	Ser	Thr	Asp	Arg	Thr	Glu	Gln	Ala	Leu	Gln
			85					90					95		
Ala	Val	Gly	Ala	Thr	Tyr	Phe	Asn	Glu	Leu	Lys	Lys	Gly	Pro	Gly	Tyr
			100					105					110		
Ala	Arg	Gln	Cys	Gly	Leu	Asp	His	Ala	Lys	Gly	Arg	Tyr	His	Ile	Cys
	115						120					125			
Ile	Asp	Ala	Asp	Thr	Met	Tyr	Pro	Pro	His	Tyr	Ile	Asp	Thr	His	Val
	130				135						140				
Arg	Asn	Leu	Met	Lys	Pro	Gly	Val	Ala	Cys	Thr	Phe	Ser	Leu	Trp	Ser
145				150					155						160
Phe	Ile	Pro	Asp	Lys	Arg	His	Ser	Arg	Leu	Gly	Leu	Trp	Leu	Tyr	Glu
			165					170					175		
Cys	Leu	Arg	Asp	Leu	His	Leu	Ser	Ile	Gln	Ala	Ile	Lys	Arg	Pro	Glu
		180						185				190			
Leu	Cys	Val	Arg	Gly	Met	Thr	Phe	Gly	Phe	Asn	Thr	Glu	Leu	Gly	Arg
	195						200					205			
Leu	Phe	Gly	Phe	Arg	Thr	Asp	Ile	Arg	Arg	Gly	Glu	Asp	Gly	Ser	Leu

210		215		220
Ala Leu Ala Met Lys Pro Tyr Gly Arg Leu Ile Phe Ile Thr Ser Arg				
225		230		240
Lys Ala Arg Ala Leu Thr Ser Asn Ser Thr Ile Asp Ala Asp Gly Ser				
	245		250	255
Leu Ala Arg Ser Phe Gly Val Arg Leu Leu Lys Ala Leu Lys Gly Ala				
	260		265	270
Thr Gly Leu Leu Tyr Lys Lys Thr Thr Tyr Lys Asp Lys Asp Ser Asn				
	275	280		285
Leu Leu				
290				

<210> 7641
 <211> 322
 <212> PRT
 <213> B.fragilis

<400> 7641

Pro Leu Gln Thr Asn Ala Met Glu Gln Pro Asn Lys His Pro Lys Val				
1	5		10	15
Ser Val Ile Ile Pro Ile Tyr Asn Thr Cys His Tyr Val Gln Glu Ala				
	20		25	30
Leu Glu Ser Ile Cys Arg Gln Thr Leu Thr Glu Leu Glu Ile Ile Ala				
	35		40	45
Ile Asp Asp Gly Ser Thr Asp Ser Ser Arg Lys Val Val Glu Gln Val				
	50		55	60
Ala Ala Thr Asp Met Arg Ile Arg Val Tyr Ser Gln Ala Asn Gln Gly				
	65		70	75
Gln Ser Ile Thr Arg Asn Asn Gly Met Gln Tyr Val Gln Gly Lys Tyr				
	85		90	95
Val Tyr Phe Met Asp Ser Asp Asp Arg Leu Glu Ala Asp Thr Leu Glu				
	100		105	110
Thr Cys Tyr Ser Ala Cys Glu Ala Gly Gln Leu Asp Phe Val Cys Phe				
	115		120	125
Asp Ala Asp Ile Leu Asn Lys Asp His Pro Cys Ala Arg His Phe Asn				
	130		135	140
Tyr Asp Arg Ser Ala Cys Ala Arg Pro Lys Gln Val Tyr Lys Gly Val				
	145		150	155
Glu Leu Leu Gln Arg Gln Leu Ser Ala Arg Val Phe Ser Pro Ser Pro				
	165		170	175
Cys Leu Asn Leu Ile Ser Thr Ser Tyr Leu Lys Thr Ser Gly Leu Thr				
	180		185	190
Phe Tyr Pro Arg Ile Ile His Glu Asp Gln Leu Phe Thr Ser Gln Leu				
	195		200	205
Tyr Leu Lys Ala Glu Lys Val Gly Tyr Ile Pro Gln Lys Phe Phe Leu				
	210		215	220
Arg Arg Phe Arg Thr Asp Ser Thr Met Thr Arg Gln Phe Thr Trp Arg				
	225		230	235
Asn Met Glu Gly Tyr Leu Thr Val Thr Asp Glu Leu Leu Lys Ala Ala				
	245		250	255
Pro Ser Tyr Pro Glu Asn Val Arg Arg Leu Ile Arg Gln Phe Leu Cys				
	260		265	270
Gln Met Leu Asp Ala Ala Val Trp Gln Ala His Thr Leu Pro Leu Arg				
	275		280	285
Gln Arg Ile Gly Leu Phe Leu Leu Cys Leu Arg His Tyr Arg Pro Tyr				
	290		295	300
Val Arg Met Arg Thr Leu Met Val Leu Met Leu Lys Lys Lys Glu Glu				
	305		310	315
Gly Arg				320

3977

<210> 7642
 <211> 1035
 <212> PRT
 <213> B.fragilis

<400> 7642

Leu	Asn	Lys	Thr	Ile	Cys	Thr	Ile	Lys	Arg	Asn	Lys	Met	Asn	Tyr	Met
1				5					10					15	
Gln	Ile	Leu	Ser	Cys	Trp	His	Lys	Leu	Glu	His	Phe	Ser	Pro	Ala	Ile
			20					25					30		
Leu	Pro	Lys	Asp	Lys	Ser	Leu	Lys	Pro	Leu	Lys	Glu	Leu	Pro	Trp	Met
		35					40					45			
Arg	Pro	Leu	Glu	Ala	Lys	Asp	Pro	Lys	Lys	Thr	Ile	Gln	Tyr	Thr	Ile
	50					55					60				
Tyr	Leu	Gly	Val	Phe	Ser	Gln	Ile	Ser	Val	Ser	Asp	Phe	Val	Lys	Asp
65					70				75					80	
Phe	Phe	Lys	Asp	Glu	Arg	Asn	Asn	Pro	Asn	Val	Thr	Asp	Ala	Lys	Val
			85						90					95	
Cys	Tyr	Ala	Ser	Leu	Lys	Leu	Asp	Asn	Leu	Gly	Val	Tyr	Ile	Gln	Asn
			100					105					110		
Thr	Phe	Gly	Phe	Ser	Thr	Met	Pro	Trp	Ala	Leu	Arg	Gln	Leu	Glu	Ala
		115					120					125			
Gly	Lys	Val	Asn	Thr	Asn	Ser	Trp	Ser	Glu	Asp	Phe	Asp	Lys	Leu	Arg
	130					135					140				
Lys	Asn	Leu	Leu	Glu	Arg	Leu	Gly	Glu	Asn	Arg	Lys	Glu	Leu	Ala	Glu
145					150				155					160	
Asp	Tyr	Ser	Ser	Tyr	Leu	Ser	Glu	Thr	Gln	Thr	Leu	Glu	Asn	Leu	Gln
			165					170						175	
Gln	Ile	Gln	Ala	Leu	Ile	Ile	Gln	Asp	Leu	Lys	Trp	Ser	Thr	Ser	Pro
			180					185					190		
Glu	Thr	Glu	Ile	Tyr	Val	Arg	Ile	Glu	Glu	Val	Tyr	Lys	Lys	Asn	Asn
	195					200					205				
Thr	Ser	Asp	Lys	Glu	Glu	Ala	Asn	Ala	Asp	Leu	Leu	Asn	Ser	Phe	Tyr
	210					215					220				
Ile	Asp	Asp	Leu	Glu	Arg	Ile	Ile	Thr	Ser	Ser	Val	Lys	Gly	Ser	Tyr
225					230				235					240	
Asn	Thr	Ala	Phe	Arg	Asn	Tyr	Leu	Ser	Ala	Cys	Leu	Asn	Lys	Asp	Phe
			245					250						255	
Val	His	Phe	Asp	Leu	Ser	Leu	Gln	Pro	Glu	Ile	Leu	Lys	Glu	Cys	Leu
			260					265					270		
Val	Pro	Glu	Asn	Tyr	Pro	Asp	Gly	Cys	Trp	Pro	Ser	Pro	His	Thr	Ala
	275						280					285			
Ser	Leu	Met	Gln	Gln	Phe	Ala	Val	Asn	Thr	Val	Ser	Lys	Glu	Leu	Ser
	290					295					300				
Gly	Glu	Lys	Gln	Glu	Gly	Ile	Phe	Ser	Val	Asn	Gly	Pro	Pro	Gly	Thr
305					310				315					320	
Gly	Lys	Thr	Thr	Leu	Leu	Arg	Asp	Ile	Ile	Ala	Ala	Ile	Leu	Val	Lys
			325					330					335		
Arg	Ala	Lys	Lys	Met	Val	Asn	Phe	Thr	Glu	Pro	Ala	Lys	Ala	Phe	Arg
			340					345					350		
Lys	Ile	Gly	Glu	Val	Gln	Val	Ser	Glu	Lys	Tyr	Thr	Pro	Ser	Ile	Tyr
	355					360					365				
Glu	Pro	Asp	Ser	Ser	Ile	Cys	Asp	Gly	Gly	Ile	Val	Val	Ala	Ser	Ser
	370					375					380				
Asn	Asn	Gly	Ala	Val	Glu	Asn	Ile	Ser	Lys	Glu	Leu	Pro	Leu	Lys	Lys
385					390					395				400	
Glu	Ala	Arg	Gly	Tyr	Ser	Asp	Gln	Val	Gly	Tyr	Phe	Arg	Gln	Val	Ser

										405			410			415		
Glu	Glu	Cys	Val	Gly	Glu	Glu	Ser	Trp	Gly	Leu	Ile	Ala	Ala	Val	Met			
										420			425			430		
Gly	Asn	Lys	Glu	Asn	Gln	Arg	Lys	Leu	Ile	Tyr	Ser	Ile	Trp	Asp	Gly			
										435			440			445		
Asp	Ser	Glu	Glu	Glu	Ser	Tyr	Thr	Leu	Lys	Gln	Gln	Leu	Lys	Asp	Tyr			
										450			455			460		
Lys	Pro	Thr	Glu	Glu	Glu	Trp	Leu	Asn	Ile	Val	Val	Ser	Phe	Lys	Asn			
										465			470			475		
Lys	Leu	Glu	Glu	Val	Glu	Ile	Glu	Lys	Ser	Arg	Leu	Thr	Gly	Phe	Met			
										485			490			495		
Lys	Asp	Ala	Glu	Ser	Ile	Glu	Lys	Leu	Arg	Ile	Gln	Leu	Glu	Asp	Ala			
										500			505			510		
Glu	Ser	His	Leu	Ser	His	Val	Asp	Lys	Glu	Leu	Glu	Gly	Leu	Leu	Glu			
										515			520			525		
Glu	Lys	Asn	Leu	Leu	Ser	Thr	Glu	Ile	Lys	Arg	Gly	Lys	Gln	Gln	Lys			
										530			535			540		
Glu	Asp	Ala	Met	Thr	Glu	Leu	Lys	Leu	Leu	Gln	Ser	Thr	Arg	Pro	Gly			
										545			550			555		
Phe	Phe	Ile	His	Trp	Phe	Asn	Lys	Thr	Val	Arg	Thr	Gln	Tyr	Lys	Lys			
										565			570			575		
Ala	Leu	Thr	Ala	Thr	Leu	Thr	Lys	Tyr	Asn	Gln	Leu	Ser	Glu	Glu	Ile			
										580			585			590		
Thr	Lys	Gln	Lys	Thr	Ser	Leu	Gln	Ala	Leu	Asp	Leu	Arg	Val	Glu	Lys			
										595			600			605		
Gln	Arg	Lys	Ile	Gln	Glu	Gln	Ser	Gln	Lys	Asp	Tyr	Asp	Arg	Ile	Asn			
										610			615			620		
Ser	Asp	Tyr	Ala	Arg	Leu	Ser	Glu	Leu	Thr	Glu	Ala	Ala	Arg	Gln	Glu			
										625			630			635		
Leu	Lys	Gly	Ala	Tyr	Ala	Asp	Ala	Ser	Phe	Trp	Lys	Gln	Ile	Glu	Ser			
										645			650			655		
Lys	Glu	Val	Gln	Glu	Ile	Ser	Pro	Trp	Tyr	Ser	Lys	Arg	Leu	Lys	Gln			
										660			665			670		
Leu	Gln	Ser	Glu	Leu	Phe	Ile	Glu	Ala	Met	Lys	Val	Asn	Glu	Leu	Phe			
										675			680			685		
Ile	Leu	Arg	Ala	Asn	Ala	Thr	Ser	Ser	Arg	Ile	Lys	Thr	Thr	Leu	Asp			
										690			695			700		
Val	Phe	Phe	Asn	Phe	Leu	Lys	Thr	Gly	Gly	Asn	Leu	Thr	Glu	Arg	Glu			
										705			710			715		
Ile	Gln	Ala	Ile	Trp	Asn	Thr	Phe	Trp	Leu	Ile	Val	Pro	Val	Val	Ser			
										725			730			735		
Ser	Thr	Phe	Ala	Ser	Ile	Gln	Arg	Met	Phe	Ser	Gln	Met	Lys	Thr	Gly			
										740			745			750		
Thr	Ile	Pro	Trp	Leu	Phe	Val	Asp	Glu	Ala	Gly	Gln	Ala	Val	Pro	Gln			
										755			760			765		
Ala	Ala	Ala	Gly	Ala	Ile	Trp	Arg	Ser	Lys	Arg	Ala	Val	Ile	Val	Gly			
										770			775			780		
Asp	Pro	Phe	Gln	Ile	Glu	Pro	Val	Val	Thr	Ile	Pro	Glu	Gln	Ile	Val			
										785			790			795		
Asn	Asn	Ile	Ser	His	His	Phe	Gly	Leu	Asp	Lys	Thr	Gln	Ile	Gln	Thr			
										805			810			815		
Ser	Leu	Ser	Val	Gln	Ser	Met	Ala	Asp	Arg	Ala	Asn	Pro	Tyr	Gly	Trp			
										820			825			830		
Ile	Thr	Asn	Asp	Thr	Trp	Thr	Gly	Ser	Pro	Leu	Arg	Val	His	Arg	Arg			
										835			840			845		
Cys	Val	Asp	Pro	Met	Phe	Ser	Ile	Ala	Asn	Glu	Ile	Ala	Tyr	Asn	Gly			
										850			855			860		
Met	Met	Tyr	Asn	Ser	Thr	Leu	Ala	Glu	Ser	Ser	Gln	Leu	Phe	Met	Arg			
										865			870			875		
																880		

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Asn Gly Phe Leu Gln Val Glu Gly Lys Val Ser Gly Arg His Tyr Val
      885                      890                      895
Pro Glu Gln Gly Ile Leu Ile Arg Gln Met Ile Ile Asp Glu Ile His
      900                      905                      910
His Leu Gln Asp Leu Pro Asp Leu Phe Val Ile Ser Pro Phe Ser Glu
      915                      920                      925
Ile Pro Pro Ile Leu Lys Lys Glu Leu Arg Gln Pro Ile Lys Gln Ala
      930                      935                      940
Leu Ala Thr Tyr Lys Ser Ile Glu Asp Asn Glu Leu Lys Lys Trp Leu
      945                      950                      955                      960
Asp Ala His Ile Gly Thr Val His Thr Phe Gln Gly Lys Gln Ala Ala
      965                      970                      975
Gly Val Ile Leu Cys Leu Gly Leu Asp Glu Lys Ser Lys Gly Ala Ala
      980                      985                      990
Ser Trp Ala Ser Ser Lys Pro Asn Leu Leu Asn Val Ala Leu Thr Arg
      995                      1000                      1005
Ala Lys Gln Arg Phe Val Ala Val Gly Asp Gly Asp Ile Trp Leu Arg
      1010                      1015                      1020
Gln Pro Tyr Phe Ser Lys Leu Lys Ala Leu Asn
      1025                      1030                      1035

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<210> 7643

<211> 141

<212> PRT

<213> B.fragilis

<400> 7643

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Leu Leu Lys Thr Asn Gly Met Glu Leu Phe Ser Phe Leu Gln Val Asp
1      5      10      15
Ser Asp Leu Thr Ala Trp Phe Ile Leu Asp Gly Gln Glu Tyr Glu Met
      20      25      30
Ser His Phe Asp Ile Asn Phe Ala Gln Ser Val Asp His Lys Gly Gln
      35      40      45
Pro Gln Asp Glu Val Arg Gly Gly Ile Met Ser Ile Thr Leu Ser Gln
      50      55      60
Thr Leu Pro Glu Asn Ile Tyr Arg Trp Gly Met Thr Ser Ile Pro Lys
      65      70      75      80
Asn Gly Ser Val Ile Phe Lys Ser Lys Thr Thr Asn Pro Pro Leu Lys
      85      90      95
Ile Asn Phe Ile Asn Ala Tyr Cys Ile Arg Phe Asn Arg Ser Ile Ala
      100      105      110
Asn Glu Gly Gly Leu Glu Ser Gln Leu Val Ile Ser Pro Asp Glu Met
      115      120      125
Leu Ile Asn Gly Ile Ser Phe Asp Asn His Trp Val Lys
      130      135      140

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<210> 7644

<211> 120

<212> PRT

<213> B.fragilis

<400> 7644

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Asp Glu Lys Thr Phe Leu Gln Asn Lys Lys Met Ile Phe Phe His Lys
1      5      10      15
Val Ile Cys Phe Ile Leu Ile Ile Phe Arg Gln Leu Ser Val Cys Ala
      20      25      30
Thr Lys Val Lys Phe Tyr Phe Phe Thr Thr Val Ser Arg Gln Asp Thr
      35      40      45
Ile Ile Gln Asn Ile Tyr Ile Ile Phe Asn Arg Lys His Asn Ser Asn

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50		55		60	
Ala Gln Thr Ile Ile	Ala Gln Met Lys Lys Lys	Ile Thr Lys Thr Leu			
65	70	75	80		
Leu Ile Glu Pro Glu	Asp Glu Lys Ile Glu Met Val	Asn Asn Val Ile			
	85	90	95		
His Gln Ser Ile Glu	Glu Leu Leu Val Pro Tyr Glu	Lys Arg Arg Thr			
	100	105	110		
Tyr Leu Pro Arg Lys	Pro Pro Lys				
115	120				

<210> 7645
 <211> 259
 <212> PRT
 <213> B.fragilis

<400> 7645

Leu Asn Phe Leu Leu Phe Asn Lys Tyr Tyr Ile Ile Met Met Gly Gln	
1 5 10 15	
Gly Asp Lys Lys Ile Arg Ile Arg Arg Thr Asn Glu Gln Leu Asp Lys	
20 25 30	
Glu Val Ile Ser Glu Phe Glu Lys Leu Val Gly Glu Phe Gly Phe Gly	
35 40 45	
Asn Val Asn Leu Ser Ala Leu Met Lys Ala Ala Asp Leu Glu Ala Asn	
50 55 60	
Val Phe Tyr Arg Arg Tyr Gly Ser Met Asp Asn Leu Tyr Asp Arg Leu	
65 70 75 80	
Ala Lys Gln Tyr Asp Phe Trp Ile Asn Asn Thr Ile Asp Ile Ser Thr	
85 90 95	
Leu Asn Thr Leu Gly Pro Lys Lys Phe Phe Ala Glu Thr Phe Lys Thr	
100 105 110	
Leu Phe Arg Asn Leu Ser Glu Asn Ser Val Met Gln Lys Leu Leu Leu	
115 120 125	
Tyr Glu Met Thr Thr Ile Asn Ser Thr Thr Lys Arg Ser Ala Glu Thr	
130 135 140	
Arg Asp Val Met Asn Leu Asn Leu Ile Thr Phe Tyr Glu Asn Leu Phe	
145 150 155 160	
Ala Pro Ala Lys Ile Asn Ile Lys Ser Ile Ala Ser Ile Leu Ile Gly	
165 170 175	
Gly Ile Tyr Tyr Leu Ile Leu His Lys Glu Cys Ala Lys Ile Cys Thr	
180 185 190	
Ile Asp Tyr Lys Thr Lys Glu Gly Glu Asn Ala Phe Ser Glu Gly Ile	
195 200 205	
Asp Phe Leu Thr Asp Ile Ile Phe Asp Arg Leu Glu Met Tyr Asp Arg	
210 215 220	
Asp Lys Lys Ala Ile Arg Gln Met Ile Ser Asp Gly Ile Ser Glu Ser	
225 230 235 240	
Lys Ile Cys Lys Tyr Met Gly Ile Asn Lys Asn Asp Leu Lys Thr Leu	
245 250 255	
Leu Ser Glu	

<210> 7646
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 7646

Lys Glu Ala Ala Glu Arg Ala Gly Ile Lys His Arg Val His Val His
1 5 10 15

Met Leu Arg His Ser Phe Ala Thr His Leu Leu Glu Gln Gly Thr Asp
 20 25 30
 Leu Arg Thr Ile Gln Glu Leu Leu Gly His Asn Asp Ile Lys Thr Thr
 35 40 45
 Ser Ile Tyr Leu His Val Thr Ser Ala His Lys Ser Ser Ile Pro Asn
 50 55 60
 Pro Leu Asp Thr Leu Asp Asp Ser
 65 70

<210> 7647

<211> 280

<212> PRT

<213> B.fragilis

<400> 7647

Ile Thr Ser Ala Lys Ile Ser Tyr Gly Asn Asn Lys Pro Pro Ile Lys
 1 5 10 15
 Ile Phe Met Thr Asp Phe Asn Trp Met Leu Trp Ile Val Thr Pro Ile
 20 25 30
 Ile Ile Val Tyr Tyr Leu Tyr Arg His Val Trp Pro Ala Val Arg Lys
 35 40 45
 Phe Ile Arg Leu Phe Gln Gly Ile Arg Ile Asn Pro Arg Ser His Leu
 50 55 60
 Thr Glu Ala Glu Tyr Lys Lys Leu Ser Val Gly Ser Leu Tyr Ala Leu
 65 70 75 80
 Gln Gln Gly Ala Tyr Leu Asn Ser Leu Thr Leu Asp Ser Lys Asp Lys
 85 90 95
 Leu Pro Thr Ile Leu Ala Asp Trp Trp Gly Ile Cys Asn Ala Gln Asp
 100 105 110
 Ala Lys Gln Thr Leu Glu Tyr Leu Gly Lys Lys Gly Phe Ala Tyr Tyr
 115 120 125
 Phe Pro His Val Tyr Gln Ala Phe Leu Leu Asp Asp Glu Glu Ala Lys
 130 135 140
 Asp Arg Ile Phe Gln Gln His Met Asp Ser Gln Glu Asp Tyr Asp Lys
 145 150 155 160
 Ala Val Glu Gln Leu His Asn Leu Glu Asp Cys Tyr Asp Glu Leu Leu
 165 170 175
 Glu Cys Gly Thr Ile Thr Cys Arg Glu Asp Leu Leu Arg Tyr Gly Val
 180 185 190
 Thr Gly Trp Asp Ala Gly Arg Leu Asn Phe Met Ala Arg Ala Cys Tyr
 195 200 205
 Asp Met Lys Tyr Ile Ser Glu Asp Glu Ala Trp His Tyr Ile Asn His
 210 215 220
 Ala Tyr Glu Met Val His Ser Arg Phe Ser Ser Trp His Asp Phe Ala
 225 230 235 240
 Met Ser Tyr Val Ile Gly Arg Ala Leu Trp Gly Gly Lys Ser Ala Ser
 245 250 255
 Asn Ser Gly Met Met Tyr Met Ala Glu Asp Leu Leu Lys Ser Glu Lys
 260 265 270
 Ser Pro Trp Thr Lys Ile Glu Trp
 275 280

<210> 7648

<211> 326

<212> PRT

<213> B.fragilis

<400> 7648

Ile Met Lys Ala Leu Phe Leu Thr Val Ile Leu Met Ala Phe Ala Ser

1		5		10		15									
Cys	Gly	Asn	Ala	Gln	Val	Lys	Thr	Lys	Thr	Glu	Lys	Glu	Met	Lys	Gln
		20						25					30		
Glu	Ile	Ala	Lys	Leu	Glu	Glu	Leu	Ile	Lys	Glu	Glu	Leu	Gln	Met	Val
		35						40				45			
Lys	Thr	Tyr	Pro	Glu	Lys	Pro	Ala	Tyr	Tyr	Leu	Gln	Ile	Asn	Lys	Thr
		50						55				60			
Gly	Cys	Arg	Leu	Leu	Val	Arg	Val	Asp	Asp	Ile	Pro	Ile	Gly	Tyr	His
65					70					75					80
Phe	Val	Glu	Asn	Glu	Gly	Glu	Ser	Met	Leu	Tyr	Pro	Ile	Asn	Asp	Val
			85						90					95	
Leu	Phe	Gly	Ser	Gly	Lys	His	Thr	Val	Ser	Ile	Gln	Val	Tyr	Pro	Arg
			100						105					110	
Thr	Gly	Glu	Thr	Glu	Val	Thr	Lys	Asn	Ala	Ser	Val	Asn	Ile	Lys	Ile
			115						120					125	
Ile	Tyr	Tyr	Gln	Glu	Lys	Leu	Val	Gly	Met	Pro	Lys	Thr	Leu	Val	Glu
			130						135					140	
Leu	Asp	Thr	Pro	Glu	Asp	Ile	Gly	Thr	Lys	Lys	Ser	Pro	Ile	Tyr	Thr
145					150					155					160
Asp	Ser	Val	Ser	Phe	Asn	Ala	Ile	Leu	Pro	Phe	Asp	Tyr	Lys	Arg	Ile
				165						170				175	
Leu	Ala	Glu	Ala	Lys	Asp	Leu	Gln	Lys	Val	Pro	Asp	Leu	Glu	Lys	Lys
			180						185				190		
Val	Leu	Ala	His	Tyr	Asn	Lys	Val	Arg	Gln	Met	Met	Ile	Glu	Gly	Lys
			195						200				205		
Tyr	Tyr	Glu	Tyr	Glu	Lys	Met	Arg	Leu	Ser	Thr	Thr	Trp	Val	Leu	Ala
			210						215				220		
Asp	Met	Ser	Tyr	Leu	Gly	Gln	Asp	Ala	Leu	Arg	Lys	Ala	His	Ile	Asp
225					230					235					240
Glu	Asp	Tyr	Leu	Phe	Arg	Phe	Leu	Cys	Glu	Pro	Ile	Asp	Trp	Ile	Ala
				245					250					255	
Leu	Pro	Ile	Glu	Asn	Tyr	Glu	Met	Val	Ile	Cys	Gly	Asn	Arg	Lys	Leu
			260						265				270		
Val	Tyr	Leu	Arg	Arg	Lys	Val	Glu	Leu	Asp	Asp	Val	Leu	Gln	Val	Arg
			275						280				285		
Tyr	Tyr	Asp	Thr	Glu	Glu	Gln	Lys	Arg	Leu	Ser	Pro	Asp	Met	Arg	Thr
			290						295				300		
Val	Ser	Ala	Phe	Gln	Phe	Ile	Ala	Leu	Tyr	Met	Pro	Lys	Asp	Ser	Asn
305					310					315					320
Glu	Leu	Met	Glu	Leu	Tyr										
				325											

<210> 7649

<211> 135

<212> PRT

<213> B.fragilis

<400> 7649

Cys	Ala	Asn	Phe	Leu	Thr	Asn	Ser	Leu	Tyr	Asp	Phe	Gln	Ile	Asp	Asp
1				5					10					15	
Asp	Gly	Phe	Pro	Val	Arg	Glu	Gly	Ser	Val	Val	Cys	Val	Ser	Pro	Ala
			20						25					30	
Pro	Ser	Arg	Gly	Met	Arg	Asn	Ser	Ser	Asp	Glu	Pro	Met	Ile	Tyr	Met
			35						40					45	
Val	Ile	Gln	Ser	Lys	Glu	Asn	Ser	Val	Gly	Asn	Tyr	Ser	Thr	Glu	Asp
			50						55					60	
Gly	Thr	Arg	Thr	Phe	Tyr	Thr	Glu	Leu	Leu	His	Trp	Ile	Lys	Glu	Val
65					70					75					80
Leu	Ser	Glu	Asn	Leu	Asp	Leu	Met	Lys	Ser	Leu	Leu	Asp	Asn	Asp	Leu

	85		90		95										
Ala	Glu	Glu	Lys	Ala	Lys	Asn	Leu	Val	Gly	Leu	Asp	Val	Thr	Asn	Asp
	100		105		110										
Trp	Ser	Gln	Glu	Ser	Ile	Glu	Ile	Leu	Phe	Lys	Leu	Val	Leu	Met	Tyr
	115		120		125										
Ala	Asn	Arg	Glu	Pro	Tyr	Tyr									
	130		135												

<210> 7650
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 7650
 Ile Lys Tyr Tyr Cys Ile Arg Cys Phe Ile Ser Lys Lys Arg Gly Ile
 1 5 10 15
 Phe Arg Ala Leu Val Ala Asn Leu Ser Tyr Ile Cys Thr Asp Phe Ala
 20 25 30
 Ser Lys Gln Thr Ile Tyr Thr Asn Lys Tyr Ile Asp Met Lys Arg Val
 35 40 45
 Leu Phe Ile Leu Cys Ser Ile Pro Leu Leu Leu Phe Ser Pro Val Ser
 50 55 60
 Phe Ala Asn Ala Gln Glu Thr Ser Asp Phe Ser Lys Leu Asn Pro Glu
 65 70 75 80
 Asp Tyr Thr Asn Ile Ser Leu Pro Pro Leu Asp Leu Leu Phe Glu Asn
 85 90 95
 Ala Lys Gly Gly Pro Ile Tyr Glu Leu Ala Ser Val Lys Glu Gln Ile
 100 105 110
 Glu Arg Lys Leu Leu Ala Lys Glu Arg Arg Ala Phe Leu Gln Phe Phe
 115 120 125
 Ser Val Arg Gly Ser Tyr Gln Trp Gly Arg Phe Gly Val Asp Asn Thr
 130 135 140
 Phe Thr Asp Val Ala Thr Pro Ile Met Tyr Asn Tyr Ser Thr Ser Lys
 145 150 155 160
 Gln Lys Met Tyr Thr Val Gly Gly Ala Ile Asn Ile Pro Phe Asn Glu
 165 170 175
 Leu Phe Asp Leu Val Pro Arg Val Arg Arg Gln Lys Leu Thr Val Lys
 180 185 190
 Thr Ala Val Leu Glu Arg Glu Val Lys Phe Glu Glu Met Lys Arg Glu
 195 200 205
 Ile Ile Glu Leu Tyr Ala Thr Ala Thr Ser Gln Leu Asn Val Leu Lys
 210 215 220
 Leu Arg Ala Glu Ala Leu Glu Leu Ala Asn Met Gln Tyr Asp Ile Ala
 225 230 235 240
 Glu Lys Asn Phe Val Asn Asn Thr Ile Asn Thr Gly Asp Leu Ser Val
 245 250 255
 Glu Lys Glu Arg Gln Ser Thr Ala Leu Glu Ala Phe Glu Lys Ser Arg
 260 265 270
 Phe Glu Val Thr Lys Ser Leu Met Ile Leu Glu Val Val Thr Arg Thr
 275 280 285
 Pro Ile Leu Lys Lys
 290

<210> 7651
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7651


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Asn Lys Pro Tyr Met Asp Ala Ser Lys Gln Arg Gly Ser Ile Val Leu
1      5      10      15
Thr Lys Gln Asn Ile Asp Gly Gln Asp Tyr Ile Arg Ile Glu Tyr Thr
20      25      30
Asp Asn Gln Thr Ile Ala Leu Leu Ser Gln Asp Lys Gly Ile Lys
35      40      45
Thr Ile Gly Asn Gly Ser Ala Tyr Ile Gln Ala Ser Thr Phe Gln Leu
50      55      60
Pro Glu Phe Tyr Thr Arg Tyr Ser Pro His Ala Tyr Ile Asp Tyr Ser
65      70      75      80
Arg Val Tyr Val Arg His Pro Lys Pro Gln Arg Glu Tyr Val Leu Pro
85      90      95
Lys Gly Tyr Leu Glu Leu Leu Glu Gln Lys Arg Tyr Ser Pro Ser Thr
100     105     110
Ile Lys Thr Tyr Arg Ile Tyr Phe Ser Asp Phe Met Glu Tyr His Lys
115     120     125
Gly Arg Asn Ile Asp Tyr Leu Lys Val Ala Asp Ile Asn His Tyr Ile
130     135     140
Leu Tyr Leu Val Asn Glu Lys Lys Ile Ser Val Ser Gln Gln Asn Met
145     150     155     160
Arg Ile Asn Ala Ile Lys Phe Tyr Tyr Glu Arg Val Lys Gly Gly Lys
165     170     175
Cys Gln Tyr Tyr Gly Gly Ile Thr Gly Ala Lys Glu Tyr Lys Thr Leu
180     185     190
Pro Glu Val Leu Ser Arg Asn Glu Ile Ser Arg Ile Leu Ser Cys Leu
195     200     205
Pro Asn Leu Lys His His Cys Met Ile Ser Leu Ile Tyr Ser Val Gly
210     215     220
Leu Arg Arg Ser Glu Leu Leu Asn Leu Ile Pro Lys Asp Ile Ile Ser
225     230     235     240
Glu Arg Met Leu Val Arg Ile Met Gly Lys Arg Lys Lys Cys Arg Tyr
245     250     255
Ser Leu Leu Ser Glu Lys Val Leu Asn Glu Leu Arg Thr Tyr Tyr Lys
260     265     270
Glu Tyr Arg Pro Lys Lys Trp Leu Phe Glu Gly Asp Ser Pro Gly Glu
275     280     285
Gln Tyr Ser Ala Ser Ala Leu Val Lys Val Leu Lys Arg Gly Cys Arg
290     295     300
Thr Cys Arg Tyr Gln Thr Ser Gly Thr Cys Thr His Ala Pro Ser Leu
305     310     315     320
Phe Arg Tyr Pro Phe Val Gly Thr Arg Tyr
325     330

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<210> 7652

<211> 227

<212> PRT

<213> B.fragilis

<400> 7652

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Tyr Gly Leu Tyr Gly Asn Lys Ile Val Phe Ser Gly Leu Glu Asn Ile
1      5      10      15
Lys Asp Cys Cys Lys Met Lys Ile Thr Arg Asp Glu Leu Leu Ile Ala
20      25      30
Ala Phe Lys Leu Phe Met Ser Val Asn Tyr Glu Lys Ala Ser Phe Ala
35      40      45
Glu Leu Gly Lys Met Leu Gly Met Ser Lys Ala Gly Ile Phe Lys Tyr
50      55      60
Tyr Lys Asn Lys Gln Glu Leu Phe Ile Ala Val Val Asp Lys Phe Trp
65      70      75      80

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Phe Ser Thr Gln Asn Pro Arg Asn Lys Phe Thr Glu Thr Asn Gly Thr
 85 90 95
 Phe Ala Glu Phe Ile Asp Glu Tyr Val Arg Gly Val Gln Arg Thr Met
 100 105 110
 Asp Met Leu Gly Asp Leu Ile Gly Ala Glu Arg Glu Lys Val Ala Gln
 115 120 125
 Gly Lys Phe Thr Tyr His Ala Gln Tyr Phe His Phe Leu Phe Gln Leu
 130 135 140
 Leu Gln Tyr Asp Pro Asp Ala Lys Glu Lys Leu Arg Asn Leu Val Asp
 145 150 155 160
 Gly Asp Tyr Ala Tyr Trp Arg Ala Ala Ile Gln Arg Ala Ile Ala Thr
 165 170 175
 Gly Glu Leu Arg Glu Asp Val Asp Val Glu Asp Ala Val Val Met Phe
 180 185 190
 Arg Gln Val Tyr Met Gly Leu Ser Phe Glu Met Ala Phe Met Gly Gly
 195 200 205
 Leu Asn Thr Gln Arg Leu Ala Lys His Leu His Ala Val Tyr Ser Leu
 210 215 220
 Leu Lys Arg
 225

<210> 7653
 <211> 235
 <212> PRT
 <213> B.fragilis

<400> 7653
 Asn Leu Glu Tyr Met Ser Asp Lys His Leu Val Cys Lys Gly Ala Thr
 1 5 10 15
 Val Tyr Cys Ser Lys Ser Met Val Asn Asn Ser Pro Gly Thr Ala Ile
 20 25 30
 Pro Leu Thr Ile Thr Ser Asn Thr Leu Val Glu Leu Asn Gly Gly Lys
 35 40 45
 Val Ala Ala Thr Asp Lys Asp Cys Thr Pro Ala Asn Met Cys Phe Gly
 50 55 60
 Asn Cys Asn Thr Gly Thr Asn Pro Pro Pro Cys Val Ala Asn Val
 65 70 75 80
 Gln Trp Ser Lys Phe Tyr Glu Gly Ala Glu Val Thr Glu Ala Gly Met
 85 90 95
 Lys Leu Leu Thr Glu Glu Ser Glu Ala Thr Cys Met Ala Phe Gly Gly
 100 105 110
 Lys Val Lys Ile Ala Phe His Gly Gln Val Ala Asn Pro Gln Pro Glu
 115 120 125
 Glu Pro Gly Glu Val Ser Pro Glu Val Met Ala Gly Ile Leu Pro Val
 130 135 140
 Asn Pro Arg Pro Glu Glu Thr Ile Val Ile Thr Glu Gly Asp Glu Glu
 145 150 155 160
 Arg Glu Lys Lys Ile Thr Asp Ala Tyr Trp Val Asp Glu Lys Thr Gln
 165 170 175
 Glu Lys Met Gln Glu Ile Tyr Pro Gly Lys Lys Val Thr Leu Cys Leu
 180 185 190
 Lys Thr Ser Gly Tyr Val Glu Gly Gln Ala Asp Ile Lys Ile Lys
 195 200 205
 Met Glu Asp Gly Lys Glu Lys Thr Ala Ser Gly Glu Val Lys Arg Asp
 210 215 220
 Gly Thr Val Val Ile Glu Asn Phe Glu Ile Asp
 225 230 235

<210> 7654

<211> 251
 <212> PRT
 <213> B.fragilis

<400> 7654

Gln	Phe	Arg	Tyr	Glu	Ala	Val	Gly	Ile	Phe	Val	Gln	Gly	Asp	Cys	Gly
1				5					10					15	
Leu	Tyr	Glu	Arg	Ala	Pro	Gly	Gly	His	Tyr	Leu	Leu	Ser	Gly	Val	Cys
		20						25					30		
Arg	Ala	Thr	Gly	Thr	Phe	Thr	Ser	Asp	Ser	Ile	Arg	Asn	Ala	Phe	Ala
		35					40					45			
Asp	Trp	Gln	Tyr	Ala	Val	Ile	Pro	Gln	Ala	Pro	Asp	Ser	Thr	Pro	Ile
	50					55				60					
Leu	Gln	Val	Ala	Leu	Phe	Ser	Lys	Tyr	Pro	Val	Lys	Asp	Ser	Arg	Leu
65					70					75				80	
Ile	Thr	Tyr	Pro	Asp	Ser	Arg	Asn	Cys	Ser	Met	Trp	Cys	Asp	Leu	Asp
			85					90					95		
Val	Asn	Gly	Gln	Thr	Val	Arg	Val	Phe	Asn	Asn	His	Leu	Gln	Thr	Thr
		100						105					110		
Glu	Val	Ser	Gln	Asn	Lys	Arg	Arg	Leu	Glu	Arg	Glu	Leu	Ala	Lys	Asn
	115						120					125			
Glu	Leu	Thr	Gly	Arg	Glu	Glu	Ala	Val	Ala	Arg	Gln	Leu	Leu	Glu	Gly
	130					135					140				
Leu	Asn	Glu	Asn	Phe	Arg	Lys	Arg	Ala	Ala	Gln	Ala	Lys	Thr	Leu	Glu
145					150					155				160	
Gln	Leu	Ile	Arg	Thr	Thr	Pro	Tyr	Pro	Ile	Leu	Val	Cys	Gly	Asp	Phe
				165					170					175	
Asn	Ser	Leu	Pro	Ser	Ser	Tyr	Thr	Tyr	Ser	Thr	Val	Lys	Gly	Asp	Asn
			180					185					190		
Leu	Gln	Asp	Gly	Phe	Gln	Thr	Cys	Gly	His	Gly	Tyr	Met	Tyr	Thr	Phe
	195						200					205			
Arg	Tyr	Phe	Lys	Arg	Leu	Leu	Arg	Ile	Asp	Tyr	Ile	Phe	His	Ser	Lys
	210					215					220				
Glu	Phe	Lys	Gly	Val	Asp	Tyr	Tyr	Ser	Pro	Asp	Leu	Asp	Leu	Cys	Ser
225					230					235				240	
Asp	His	Asn	Pro	Val	Val	Met	Glu	Val	Lys	Met					
				245					250						

<210> 7655
 <211> 828
 <212> PRT
 <213> B.fragilis

<400> 7655

Asn	Met	Asp	Phe	Leu	Asn	Ile	Asn	Glu	Thr	Val	Gln	Ser	Val	Ile	Arg
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Ile	Ser	Lys	Gly	Val	Ala	Arg	Glu	Tyr	Gly	Asn	Ala	Ser	Tyr	Ala	Pro
		20						25					30		
Ala	His	Leu	Leu	Phe	Ala	Leu	Met	His	Lys	Glu	Val	Gly	Leu	Arg	Ser
	35						40					45			
Phe	Val	Glu	Ser	Leu	Gly	Lys	Asp	Ala	Asp	Tyr	Leu	Arg	Glu	Trp	Ala
	50					55				60					
Glu	Val	Arg	Ile	Glu	Glu	Tyr	Pro	Lys	Ala	Ala	Gly	Ala	Gly	Glu	Ile
65					70					75				80	
Met	Pro	Asp	Pro	Lys	Val	Asn	Glu	Leu	Phe	Glu	Gln	Ala	Asp	Asn	Val
			85					90					95		
Arg	Ile	Lys	Trp	Gly	Leu	Leu	Glu	Ile	Asn	Pro	Leu	Cys	Leu	Leu	Ala
		100						105					110		
Ala	Ile	Ala	Thr	Pro	Glu	Ala	Gly	Phe	Ser	Thr	Asp	Glu	Leu	Arg	Ser

Phe	Pro	Ile	Arg	Glu	Arg	Glu	Ile	His	Asp	Leu	Phe	Thr	Ser	Gly	Met
	130					135					140				
Gly	Asn	Met	Lys	Lys	Ser	Val	Ser	Thr	Gln	Thr	Asp	Leu	Pro	Gly	Ser
145					150					155					160
Glu	Ala	Pro	Leu	Trp	Thr	Ala	Gly	Ala	Gly	Asn	Leu	Asp	Lys	Tyr	Cys
				165					170					175	
Thr	Asp	Lys	Thr	Ala	Leu	Ala	Ala	Asp	Lys	Lys	Val	Tyr	Pro	Ile	Val
			180					185					190		
Cys	Arg	Asp	Arg	Glu	Thr	Arg	Met	Met	Met	Glu	Ile	Leu	Gly	Arg	Met
		195					200					205			
Gly	Lys	Pro	Asn	Val	Leu	Ile	Ile	Gly	Asp	Ala	Gly	Val	Gly	Lys	Thr
	210					215					220				
Ala	Leu	Val	Asp	Gly	Leu	Ala	Cys	Ser	Ile	Ile	Glu	Gly	Thr	Val	Pro
225					230					235					240
Gln	Tyr	Leu	Lys	Asp	Met	Thr	Ile	Tyr	Glu	Leu	Asp	Thr	Gly	Thr	Leu
				245					250					255	
Ile	Ala	Gly	Ala	Thr	Tyr	Lys	Gly	Glu	Ile	Glu	Glu	Arg	Leu	Lys	Gly
			260					265					270		
Ile	Ile	Lys	Glu	Leu	Ser	Ala	His	Gly	Asn	Ala	Ile	Leu	Phe	Ile	Asp
		275					280					285			
Glu	Ile	His	Thr	Leu	Ile	Asp	Pro	Lys	Ser	Gly	Asn	Ser	Gly	Ala	Ala
	290					295					300				
Ser	Ile	Leu	Lys	Pro	Glu	Leu	Ala	Lys	Gly	Asn	Ile	Thr	Val	Ile	Gly
305					310					315					320
Val	Thr	Thr	Val	Asp	Glu	Tyr	Arg	Lys	Leu	Ile	Glu	Pro	Asp	His	Ala
				325					330					335	
Leu	Asn	Arg	Arg	Phe	Glu	Val	Leu	Gln	Val	Ser	Glu	Pro	Asp	Leu	Ala
				340					345				350		
Ser	Thr	Val	Asn	Met	Ile	Gln	Ala	Ala	Leu	Glu	Arg	Tyr	Glu	Ser	Tyr
		355					360					365			
His	Gly	Val	Gly	Val	Asp	Val	Asp	Ser	Leu	Pro	Glu	Cys	Val	Ala	Leu
	370					375					380				
Ala	Lys	Arg	Tyr	Val	Lys	Glu	Arg	Arg	Leu	Pro	Asp	Ala	Ala	Ile	Asp
385					390					395					400
Leu	Ile	Asp	Arg	Thr	Leu	Ser	Ala	Val	Lys	Met	Ile	Asn	Gln	Ser	Gly
				405					410					415	
Glu	Lys	Asp	Ile	Lys	Gly	Leu	Ala	Glu	Gln	Leu	Ala	Ala	Ile	Glu	Ala
			420					425					430		
Ala	Glu	Asp	Gln	Pro	Glu	Ala	Glu	Arg	Thr	Glu	Lys	Leu	Arg	Leu	Val
		435					440					445			
Asn	Phe	Thr	Met	Lys	Asn	Arg	Leu	Ser	Pro	Ile	Leu	Leu	Gly	Met	Leu
	450					455					460				
Ser	Asp	Gly	Gln	Asn	Glu	Pro	Glu	Ser	Ser	Asp	Tyr	Gly	Glu	Trp	Met
465															

Phe Asn Asp Glu Lys Ala Met Ile Arg Phe Asp Met Ser Glu Phe Lys
 595 600 605
 Glu Glu His Ser Ala Ala Leu Leu Leu Gly Ala Pro Pro Gly Tyr Val
 610 615 620
 Gly Tyr Glu Glu Gly Gly Val Leu Val Asn Arg Ile Arg Arg Gln Pro
 625 630 635 640
 Tyr Ala Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Ser Ser Val
 645 650 655
 Tyr Asp Ile Phe Leu Gln Ile Met Asp Glu Gly Lys Leu His Asp Arg
 660 665 670
 Leu Gly Lys Glu Gly Asp Phe Ser Asn Ser Ile Val Leu Phe Thr Ser
 675 680 685
 Asn Val Gly Ser Glu Trp Leu Ser Lys Gln Ile Asn Glu Gly Lys Asn
 690 695 700
 Pro Ser Thr Thr Asp Leu Met Glu Val Met Gly Ser Tyr Phe Arg Pro
 705 710 715 720
 Glu Phe Leu Ala Arg Leu Ser Glu Ile Val Pro Phe Ser Pro Ile Asn
 725 730 735
 Glu Thr Met Leu Val Arg Ile Phe Glu Ile Gln Leu Lys Gly Val Ile
 740 745 750
 Ala Leu Leu Glu Lys Gln His Ile Asp Ile Glu Ile Thr Glu Lys Ala
 755 760 765
 Lys Asn Leu Leu Ala Thr Arg Gly Phe Thr Pro Lys Tyr Gly Ala Arg
 770 775 780
 Gln Val Ala Gly Thr Ile Arg Asn Tyr Ile Arg Arg Pro Ile Ser Lys
 785 790 795 800
 Met Ile Val Ala Gly Thr Leu Ala Ala Gly Asn Thr Val Val Val Asp
 805 810 815
 Val Ala Asp Asn Gly Asp Ile Asp Trp Asn Val Lys
 820 825

<210> 7656
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 7656
 Cys Lys Leu Gln Ala Leu Arg Ile Val Ala Tyr Gly Asp Arg Glu Asp
 1 5 10 15
 Gln Asp Ala Arg Gln Asp Gly Ala Asp Asp Gln Arg Ile Glu Pro Gly
 20 25 30
 Ser Ala Gln Gly Cys His Asp Gly Ser Arg Ser Gly Gly Tyr Leu Tyr
 35 40 45
 Asp Glu Thr Pro Gln Gly Asp Glu Leu Lys Leu Phe Ile Ala Val Glu
 50 55 60
 Gln Arg Ile Gly Asn Asp Gly Gly Gly Ser Lys Lys
 65 70 75

<210> 7657
 <211> 162
 <212> PRT
 <213> B.fragilis

<400> 7657
 Thr Ile Thr Asn Asn Cys Ala Met Asn Lys Thr Val Gln Ser Ile Leu
 1 5 10 15
 Ser Leu Thr Ala Val Ser Leu Leu Leu Ile Val Ile Thr Phe Phe Leu
 20 25 30
 Gly Gly Leu Gly Phe Gly Arg Leu Phe Gly Ile Tyr Gly Val Met Glu

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<210> 7658
<211> 87
<212> PRT
<213> B.fragilis
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<210> 7659
<211> 419
<212> PRT
<213> B.fragilis
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<220>
<221> UNSURE
<222> (401)
<223> Identity of amino acid sequences at the above locations are unknown.
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<400> 7659															
Leu	Thr	Cys	Lys	Cys	Thr	Val	Pro	Ser	Ser	Pro	Val	Val	Lys	Thr	Pro
1				5					10					15	
Ala	Ala	Phe	Val	Ala	Ala	Gln	Asp	Lys	Gly	Ile	Ser	Thr	Val	Lys	Asp
			20					25						30	
Gly	Gln	Thr	Ala	Val	Gly	Asn	Thr	Phe	Asn	Thr	Asp	Thr	Ala	Lys	Gln
		35					40					45			
Asp	Ser	Thr	Pro	Ala	Leu	Ser	Lys	Arg	Glu	Leu	Arg	Arg	Gln	Arg	Val
	50					55					60				
Ala	Arg	Arg	Asn	Leu	His	Tyr	Asn	Ile	Leu	Gly	Gly	Pro	Ser	Tyr	Thr
65					70					75					80
Pro	Asp	Phe	Gly	Leu	Leu	Ile	Gly	Gly	Ser	Ala	Leu	Met	Thr	Phe	Arg

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<210> 7660
<211> 293
<212> PRT
<213> B.fragilis
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Ile	Ile	Cys	Asn	Lys	Met	Gly	Lys	Lys	Ile	Glu	Ile	Lys	Lys	Leu	Ser
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Asp	Phe	Glu	Ala	Met	Val	Asn	Ala	Gly	Asn	Thr	Thr	Tyr	Thr	Gly	Leu
			20					25					30		
Val	Glu	Gly	Ile	Gly	Tyr	Val	Tyr	Trp	Thr	Thr	Glu	Thr	Leu	Tyr	Phe
		35					40					45			
Ile	Arg	Thr	Asn	Pro	Glu	Gln	Leu	Trp	Ala	Ile	Pro	Lys	Tyr	Gln	Gln
	50					55					60				
Ile	Pro	Phe	Pro	Tyr	Phe	Gln	Arg	Lys	Asp	Ala	Ile	Ile	Glu	Thr	Lys

65				70				75				80			
Thr	Leu	His	Thr	Leu	His	Val	Leu	Ser	Lys	Asp	Glu	Leu	Leu	Lys	Leu
				85					90					95	
Asp	Tyr	Asp	Ala	Tyr	Tyr	Ala	Phe	Tyr	Gly	Ile	Val	Glu	Glu	Met	Leu
			100					105						110	
Lys	Phe	Ile	His	Arg	Ala	Asp	Ala	Ile	Lys	Ser	Tyr	Cys	Glu	Ile	Pro
		115				120						125			
Leu	Pro	Ile	Ile	Lys	Ser	Lys	Gly	Ala	Leu	Lys	Gly	Asn	Asp	Ala	Arg
	130					135					140				
Asn	Gly	Ile	Leu	Ser	Leu	Gly	Ser	Gln	Ile	Asn	Asp	Gln	Ile	Gly	Ala
145					150					155					160
Pro	Leu	Asp	Ala	Ala	Asn	Met	Leu	Met	Asp	Asn	Lys	His	Ile	Gly	Lys
			165						170					175	
Ile	Gly	Asp	Gly	Leu	Ser	Leu	Ile	Ser	Ile	Ile	Asp	Glu	Val	Gly	Asn
		180						185					190		
Gly	Glu	Tyr	Trp	Ser	Ala	Ala	Gly	Asp	Ile	Leu	Leu	Phe	Ala	Ala	Gly
		195					200					205			
Lys	Thr	Lys	Leu	Ser	Pro	Tyr	Met	Thr	Val	Ile	Ser	Leu	Gly	Thr	Trp
	210					215					220				
Met	Tyr	Glu	Thr	Asp	Leu	Met	Gln	Trp	Arg	Leu	Ala	Cys	Ile	Asn	Tyr
225					230					235					240
Ser	Asp	Tyr	Lys	Lys	Thr	Leu	Ile	Lys	Tyr	Arg	Glu	Leu	Gln	Lys	Lys
			245						250					255	
Phe	Glu	Ser	Gly	Asp	Lys	Ser	Val	Glu	Glu	Lys	Met	Asn	Glu	Cys	His
		260						265				270			
Lys	Ile	Leu	Asn	Ser	His	Tyr	Ile	Glu	Met	Gln	Lys	Asn	Leu	Gly	Asn
		275					280					285			
Leu	Gly	Val	Lys	Phe											
	290														

<210> 7661
 <211> 584
 <212> PRT
 <213> B.fragilis

<400> 7661

Leu	Gln	Ile	Asn	Ser	Glu	His	Phe	Cys	Tyr	Leu	Cys	Ala	Ile	Asn	Ile
1			5					10						15	
Asn	Thr	His	Tyr	Leu	Tyr	Met	Ala	Asp	Asp	Lys	Lys	Ile	Ile	Phe	Ser
		20						25					30		
Met	Val	Gly	Val	Ser	Lys	Ala	Phe	Gln	Pro	Asn	Lys	Asn	Val	Leu	Lys
	35					40						45			
Asp	Ile	Tyr	Leu	Ser	Phe	Phe	Tyr	Gly	Ala	Lys	Ile	Gly	Ile	Ile	Gly
	50					55					60				
Leu	Asn	Gly	Ser	Gly	Lys	Ser	Thr	Leu	Leu	Lys	Ile	Ile	Ala	Gly	Leu
65					70					75					80
Glu	Lys	Ser	Tyr	Gln	Gly	Glu	Val	Val	Phe	Ser	Pro	Gly	Tyr	Ser	Val
		85							90				95		
Gly	Tyr	Leu	Ala	Gln	Glu	Pro	Tyr	Leu	Asp	Asn	Thr	Lys	Thr	Val	Lys
		100						105					110		
Glu	Ile	Val	Met	Glu	Gly	Val	Gln	Pro	Ile	Val	Asp	Ala	Leu	Asn	Glu
	115						120					125			
Tyr	Glu	Glu	Ile	Asn	Gln	Lys	Phe	Gly	Leu	Pro	Glu	Tyr	Tyr	Glu	Asp
	130					135					140				
Gln	Asp	Lys	Met	Asp	Gln	Leu	Phe	Ala	Arg	Gln	Gly	Glu	Leu	Gln	Asp
145					150					155					160
Ile	Ile	Asp	Ala	Thr	Asp	Ala	Trp	Asn	Leu	Asp	Ser	Lys	Leu	Glu	Arg
			165					170					175		
Ala	Met	Asp	Ala	Leu	Arg	Cys	Pro	Pro	Glu	Asp	Gln	Ser	Val	Ala	Asn

180 185 190
 Leu Ser Gly Gly Glu Arg Arg Arg Val Ala Leu Cys Arg Leu Leu Leu
 195 200 205
 Gln Lys Pro Asp Ile Leu Leu Asp Glu Pro Thr Asn His Leu Asp
 210 215 220
 Ala Glu Ser Ile Asp Trp Leu Glu Gln His Leu Gln Gln Tyr Glu Gly
 225 230 235 240
 Thr Val Ile Ala Val Thr His Asp Arg Tyr Phe Leu Asp His Val Ala
 245 250 255
 Gly Trp Ile Leu Glu Leu Asp Arg Gly Glu Gly Ile Pro Trp Lys Gly
 260 265 270
 Asn Tyr Ser Ser Trp Leu Glu Gln Lys Thr Lys Arg Met Glu Met Glu
 275 280 285
 Glu Lys Thr Ala Ser Lys Arg Arg Lys Thr Leu Glu Arg Glu Leu Glu
 290 295 300
 Trp Val Arg Met Ala Pro Lys Ala Arg Gln Ala Lys Gly Lys Ala Arg
 305 310 315 320
 Leu Asn Ser Tyr Asp Lys Leu Leu Asn Glu Asp Val Lys Glu Lys Glu
 325 330 335
 Glu Lys Leu Glu Ile Phe Ile Pro Asn Gly Pro Arg Leu Gly Asn Lys
 340 345 350
 Val Ile Glu Ala Lys His Val Ala Lys Ala Tyr Gly Asp Lys Leu Leu
 355 360 365
 Phe Asp Asp Leu Asn Phe Met Leu Pro Pro Asn Gly Ile Val Gly Val
 370 375 380
 Ile Gly Pro Asn Gly Ala Gly Lys Thr Thr Leu Phe Arg Leu Ile Met
 385 390 395 400
 Gly Leu Glu Thr Val Asp Lys Gly Glu Phe Glu Val Gly Glu Thr Val
 405 410 415
 Lys Val Ala Tyr Val Asp Gln Gln His Lys Asp Ile Asp Pro Asn Lys
 420 425 430
 Ser Val Tyr Gln Val Ile Ser Gly Gly Asn Asp Leu Ile Arg Met Gly
 435 440 445
 Gly Arg Asp Ile Asn Ala Arg Ala Tyr Leu Ser Arg Phe Asn Phe Ser
 450 455 460
 Gly Ala Asp Gln Glu Lys Leu Cys Gly Val Leu Ser Gly Gly Glu Arg
 465 470 475 480
 Asn Arg Leu His Leu Ala Met Ala Leu Lys Glu Glu Gly Asn Val Leu
 485 490 495
 Leu Leu Asp Glu Pro Thr Asn Asp Ile Asp Val Asn Thr Leu Arg Ala
 500 505 510
 Leu Glu Glu Gly Leu Glu Asp Phe Ala Gly Cys Ala Val Val Ile Ser
 515 520 525
 His Asp Arg Trp Phe Leu Asp Arg Ile Cys Thr His Ile Leu Ala Phe
 530 535 540
 Glu Gly Asp Ser Asn Val Phe Tyr Phe Glu Gly Ser Tyr Ser Glu Tyr
 545 550 555 560
 Glu Glu Asn Lys Leu Lys Arg Leu Gly Asn Glu Glu Pro Lys Arg Val
 565 570 575
 Arg Tyr Arg Lys Leu Ile Ala Asp
 580

<210> 7662

<211> 306

<212> PRT

<213> B.fragilis

<400> 7662

Lys Arg Ile Lys Gly Ser Ser Gln Thr Ser Met Lys Gln Ile Pro Pro

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1           5           10           15
Leu Ile Ser Phe Ile Thr Ile Cys Tyr Asn Gly Leu Asp Asp Thr Cys
20           25           30
Val Leu Ile Glu Ser Leu Arg Asp Thr Ile Ser Ser Val Ser Tyr Glu
35           40           45
Ile Ile Val Val Asp Asn Ala Ser Arg Gln Asp Glu Ala Ser Leu Ile
50           55           60
Gln Glu Arg Tyr Pro Phe Val Arg Thr Leu Arg Ser Glu Lys Asn Leu
65           70           75           80
Gly Phe Ser Gly Gly Asn Asn Leu Gly Ile Gln Ile Ala Gln Gly Lys
85           90           95
Tyr Leu Phe Leu Ile Asn Asn Asp Thr Tyr Leu Thr Glu Asp Gly Leu
100          105          110
Pro Ala Leu Ile Glu Arg Leu Glu Ser Asp Pro Arg Ile Gly Ala Val
115          120          125
Ser Pro Lys Ile Arg Phe Ala Phe Pro Pro Gln Asn Ile Gln Phe Ala
130          135          140
Gly Tyr Thr Lys Leu Ser Arg Tyr Thr Met Arg Asn Lys Ala Leu Gly
145          150          155          160
Met Gly Cys Pro Asp Asp Gly Thr Phe Asp Thr Pro Arg Pro Ser Ala
165          170          175
Tyr Leu His Gly Ala Ala Leu Met Leu Lys Arg Glu Val Ile Trp Lys
180          185          190
Ala Gly Leu Met Pro Glu Ile Tyr Phe Leu Tyr Tyr Glu Glu Leu Asp
195          200          205
Trp Cys Thr Asn Met Thr Arg Ala Gly Tyr Gln Leu Trp Tyr Glu Pro
210          215          220
Arg Cys Thr Ile Phe His Lys Glu Ser Gln Ser Thr Gly Arg Gln Ser
225          230          235          240
Pro Leu Arg Thr Phe Tyr Met Met Arg Asn Arg Met Leu Tyr Ala Trp
245          250          255
Arg Asn Leu Pro Gly Met Glu Arg Cys Leu Ala Ile Ala Tyr Gln Met
260          265          270
Leu Ile Val Ala Pro Lys Asp Ser Leu Cys Phe Val Leu Lys Gly Glu
275          280          285
Pro Lys Leu Ala Lys Ala Val Trp His Gly Val Lys Gly Phe Trp Lys
290          295          300
Leu Cys
305

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<210> 7663

<211> 152

<212> PRT

<213> B.fragilis

<400> 7663

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Arg Lys Gln Lys Asn Ser Asp Gly His Gln Ile Asn Lys Asn Ile Arg
1           5           10           15
Trp Met Gln Thr Tyr Leu Tyr Leu His Lys Glu Asn Ile Asp Leu Pro
20           25           30
His Gly Val Tyr Arg Gly Lys Tyr Pro Leu Lys His Phe Asp Tyr Gly
35           40           45
Leu Ser Arg Asn Val Gly Arg Lys Gly Glu Ile Thr Ser Gly Val Cys
50           55           60
Gly Gly Glu Ile Arg Ile Val Ile Asp Gly Phe Ala Asp Ala Thr Leu
65           70           75           80
Leu Gly Trp Leu Phe Asp Thr Phe Arg Lys Glu Asp Gly Ala Ile Val
85           90           95
Thr Leu Asp Glu His Glu Thr Thr Phe Ala Lys Leu Gln Phe Ser Gly

```

	100		105		110
Ala	Ser Val Arg Ser Tyr Arg Met Asn Tyr Asp Ser Arg Val Lys Lys				
	115		120		125
Gly	Val Val Thr Ile Ile Val Ile Glu Ala Lys Glu Ile Val Thr Asp				
	130		135		140
Asn	Asp Leu Phe Phe Lys Asn Lys				
	145		150		

<210> 7664

<211> 389

<212> PRT

<213> B.fragilis

<400> 7664

Glu	Tyr Lys Asn Lys Thr Thr Tyr Tyr Met Ala Lys Lys Asn Leu Val	
1	5	10 15
Asn	Trp Ser Asp Cys Met Pro Leu Ser Ala Ala Ile Phe Asn Gln His	
	20	25 30
Asp	Asp Tyr Phe Leu Asp Ser Ile Arg Asp Ser Ile Glu Val Arg Thr	
	35	40 45
Asn	Ser Tyr Asn Tyr Gly Leu Leu Pro Ala Arg Gln Asn Arg Asp Gly	
	50	55 60
Glu	Asn Gly Ile Arg Ile Ser Gln His Val Thr Gly His Ile Glu Val	
65	70	75 80
Arg	Leu Lys Ser Cys Glu Ala Ile Thr Ser Ser Gly Ile Arg Ile Gln	
	85	90 95
Phe	Asp Ala Thr Glu Thr Gly Ser Glu Leu Val Lys Asn Tyr Ser Val	
	100	105 110
Glu	Ser Asp Thr Arg Lys Asn Ile Thr Gln Trp Asp Ile Ile Leu Ser	
	115	120 125
Val	Asp Pro Phe His Arg Val Gly Ser Gly Asp Pro Asn Pro Glu Glu	
	130	135 140
Val	Pro Pro Arg His Pro Asn Ala Leu Pro Ser Tyr Arg Leu Phe Val	
145	150	155 160
Met	Pro Lys Gly Glu Ile Asn Val Ser Glu Leu Gly Ala His Tyr Leu	
	165	170 175
Thr	Ile Gly Arg Ile Arg Lys Asp Ala Glu Arg Phe Met Val Asp Ala	
	180	185 190
Asp	Phe Ile Pro Pro Cys Thr Thr Met Lys Ser His Pro Glu Leu Gln	
	195	200 205
Glu	Tyr His Ala Lys Phe Gly Asn Met Phe Arg Ser Leu Glu Asn Tyr	
	210	215 220
Ser	Lys Ile Ile Ile Ala Lys Ile His Asn Arg Asp Asn Arg Gly Glu	
225	230	235 240
Leu	Gly Ala His Ile Ser Leu Ile Cys Arg Glu Met Leu Arg Tyr Leu	
	245	250 255
Ala	Thr Leu Gln Phe Thr Tyr Thr Asn Lys Gly Leu Tyr Asn Ala Pro	
	260	265 270
Ile	Asp Val Leu Glu Ala Val Ser Ser Leu Ala His Ile Met Tyr Val	
	275	280 285
Ser	Phe Ser Tyr Leu Ser Gly Thr Gln Lys Glu Glu Thr Gln Lys Tyr	
	290	295 300
Phe	Tyr Glu Trp Ser Asp Val Thr Pro Gly Ser Phe Asp Glu Gln Leu	
305	310	315 320
Ala	Asp Thr Leu Glu Met Leu Tyr Glu His Thr Asp Ile Arg Ala Ser	
	325	330 335
Met	Val Arg Ala Tyr Ser Phe Met Tyr Thr Leu Thr Glu Leu Trp Gln	
	340	345 350
Arg	Leu Ser Thr Leu Glu Tyr Ile Gly Gln His Lys Glu Asn Ile Val	

355 360 365
 Val Ser Glu Arg Thr Thr Gly Asn Asn Thr Thr Gly Gln Asn Lys Thr
 370 375 380
 Trp Ser Ile Met Asp
 385

<210> 7665
 <211> 408
 <212> PRT
 <213> B.fragilis

<400> 7665
 Pro Ile Met Asn Asn Thr Ile Thr Thr Trp Leu Glu Ile Leu Phe Trp
 1 5 10 15
 Leu Ser Leu Phe Leu Val Phe Tyr Thr His Leu Gly Tyr Gly Ile Leu
 20 25 30
 Leu Tyr Met Leu Val Lys Leu Lys Glu Leu Phe Val Lys Pro Val Arg
 35 40 45
 Arg Gln Leu Pro Pro Asp Lys Arg Leu Pro Asp Val Thr Leu Phe Ile
 50 55 60
 Thr Ala Phe Asn Glu Glu Val Val Asp Glu Lys Met Arg Asn Cys
 65 70 75 80
 Leu Gly Leu Asp Tyr Pro Ala Asp Lys Leu His Ile Val Trp Thr Thr
 85 90 95
 Asp Gly Ser Asn Asp Ser Thr Asn Gln Arg Leu Glu Asp Trp Pro Gln
 100 105 110
 Ala Thr Val His Phe Gln Pro Leu Arg Gln Gly Lys Thr Ala Ala Met
 115 120 125
 Thr Arg Gly Met Met Leu Val Asp Thr Pro Leu Val Val Phe Thr Asp
 130 135 140
 Ala Asn Thr Met Leu Asn Arg Glu Ala Ile Arg Glu Ile Val Arg Ala
 145 150 155 160
 Phe Glu Asp Pro Lys Val Gly Cys Val Ala Gly Glu Lys Arg Ile Ala
 165 170 175
 Val Gln Glu Lys Asp Gly Ala Ala Ala Gly Gly Glu Gly Ile Tyr Trp
 180 185 190
 Lys Tyr Glu Ser Thr Leu Lys Ala Leu Asp Ala Arg Leu Tyr Ser Ala
 195 200 205
 Val Gly Ala Ala Gly Glu Leu Phe Ala Val Arg Arg Glu Leu Phe Thr
 210 215 220
 Val Met Glu Pro Asp Thr Leu Leu Asp Asp Phe Ile Leu Ser Leu Arg
 225 230 235 240
 Ile Ala Met Gln Gly Tyr Lys Ile Ala Tyr Cys Thr Gln Ala Tyr Ala
 245 250 255
 Ile Glu Ser Gly Ser Ala Asp Met Arg Glu Glu Gln Lys Arg Lys Val
 260 265 270
 Arg Ile Ala Ala Gly Gly Leu Gln Ser Ile Trp Arg Leu Arg Glu Leu
 275 280 285
 Leu Asn Pro Phe Arg Tyr Gly Val Leu Thr Phe Gln Tyr Val Ser His
 290 295 300
 Arg Val Leu Arg Trp Ser Leu Ala Pro Val Leu Leu Phe Ala Leu Leu
 305 310 315 320
 Pro Leu Asn Ile Ala Ile Leu Leu Ala Gly Gly Ser Pro Val Cys Tyr
 325 330 335
 Gly Thr Ile Leu Ala Leu Gln Leu Leu Phe Tyr Ile Met Gly Gly Trp
 340 345 350
 Gly Tyr Tyr Leu Ser Thr Arg Gln Val Lys Asn Lys Leu Leu Phe Ile
 355 360 365
 Pro Tyr Tyr Phe Leu Phe Met Asn Ile Asn Val Met Lys Gly Val Asn

370 375 380
 Tyr Leu Arg Lys Lys Lys Gly Thr Gly Ala Trp Glu Lys Ala Lys Arg
 385 390 395 400
 Thr Lys Thr Glu Ser Leu Asn Gln
 405

<210> 7666
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 7666
 Met Ile Met Lys Lys Phe Leu Phe Ile Leu Thr Val Ile Thr Cys Phe
 1 5 10 15
 Phe Ala Ser Ser Val Glu Ala Arg Arg Val Arg Phe Thr Ile Pro Val
 20 25 30
 Asp Asn Ser Ile Pro Lys Val Val Thr Leu Pro Asp Ser Ser Tyr Tyr
 35 40 45
 Lys Thr Asp Glu Gly Ser His Leu Asp Leu Gly Tyr Ile Glu Glu Asp
 50 55 60
 Gly Lys Arg Thr Leu Val Leu Phe Ser Glu Ser Lys Pro Asp Thr Tyr
 65 70 75 80
 Tyr Asp Ile Ser Asp Glu Tyr Ala Glu Ala Ile Cys Arg Asp Leu Asn
 85 90 95
 Val Glu Glu Leu Asp Thr Leu Ile Pro Lys Pro Thr Phe Trp Asp Gln
 100 105 110
 Trp Gly Gly Ser Ile Leu Phe Tyr Gly Ile Ala Ala Leu Val Val Ile
 115 120 125
 Gly Val Val Ser Tyr Leu Lys Asp Phe Ile Phe Asn Leu Leu Gly Leu
 130 135 140
 Ser Lys Lys Lys Glu Glu Glu Glu
 145 150

<210> 7667
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 7667
 Ile Leu Trp Lys Met Lys Gln Lys Tyr Tyr Lys Leu Pro Val Arg Leu
 1 5 10 15
 Glu Lys Leu Phe Glu Gly Asp Ile Arg Gln Leu Glu Arg Cys Ser Glu
 20 25 30
 Leu Glu Ser Ile Asp Gln His Ile Glu Leu Leu Leu Thr Thr Cys Pro
 35 40 45
 Gly Glu His Arg Phe Asp Pro Lys Tyr Gly Cys Arg Ile Trp Glu Leu
 50 55 60
 Asp Phe Glu Arg Ile Val Ser Thr Glu Gln Trp Lys Glu Leu Phe Thr
 65 70 75 80
 Gly Tyr Val Met Gln Ala Ile Ser Thr Tyr Glu Lys Arg Ile Ser Asp
 85 90 95
 Ile Thr Leu Ser Val Asn Leu Gln Glu Val Val Arg Glu Glu Val Leu
 100 105 110
 Asp Asn Arg Met Ile Arg Lys Arg Val Asp Ile Thr Val Leu Ala Thr
 115 120 125
 Leu Asn Ser Thr Gly Ala Pro Cys Gly Phe Gly Tyr Lys Leu Tyr Met
 130 135 140
 Gly Pro Leu Ser Asn Glu
 145 150

<210> 7668
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 7668

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Leu Ile Asn Asp Asn Ser Met Asp Lys Asp Ile Ile Val Ala Glu Asp
1      5      10      15
Glu Asp Val Lys Ile Ile Phe His Phe Lys Val Phe Cys Glu Leu Leu
20      25      30
Lys Glu Cys Met Ser Ile Tyr Gly Asn Thr Thr Ile Glu Asn Ala Gln
35      40      45
Gln Leu Val Lys Asn Phe His Pro Leu Gln Gln Pro Ile Ser Thr Thr
50      55      60
Asp Asp Ile Val Phe Phe Ser His Glu Asn Ile Tyr His Trp Ala Met
65      70      75      80
Leu Ala Leu Tyr Gly Glu Thr Tyr Trp Leu Ile His Pro Glu Cys Glu
85      90      95
Lys Leu Pro Asp Ser Tyr Glu Lys Trp Val Glu Asn Ala Leu Ser Arg
100     105     110
His Ser Leu Asp Asp Cys Tyr Glu Phe Met Ser Lys Asn Asn Val
115     120     125
Thr Asn Lys Ala
130

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<210> 7669
 <211> 437
 <212> PRT
 <213> B.fragilis

<400> 7669

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Asp Ser Ala Glu Met Ile Leu Cys Val Ile Cys Gly Glu Pro Gln Leu
1      5      10      15
Asn Arg Phe Thr Gln Ile Tyr Arg Pro Ile Thr Tyr Ile Lys Thr Tyr
20      25      30
Asp Thr His Leu Ser Leu Val Asp Trp Ile Leu Phe Val Pro Leu Ala
35      40      45
Leu Cys Val Ala Tyr Leu Leu Val Tyr Ala Ile Ala Ser Lys Phe Tyr
50      55      60
Arg Ala Pro His Tyr Pro Glu Ala Asp Lys Leu His Arg Ile Ala Val
65      70      75      80
Phe Phe Pro Ala Tyr Arg Glu Asp Lys Val Ile Ile Asp Ser Val Arg
85      90      95
Ser Phe Leu Glu Gln Asp Tyr Pro Lys Glu Met Tyr Asp Val Tyr Val
100     105     110
Ile Ser Asp His Met Gln Asp Ser Thr Asn Lys Ala Leu Ser Arg Leu
115     120     125
Pro Ile Arg Leu Leu Val Ala Thr Tyr Glu Asp Ser Ser Lys Ala Lys
130     135     140
Ala Leu Leu Leu Ala Ile Ser Thr Ile Glu Glu Asp Gly Lys Ala Lys
145     150     155     160
Gly Leu Gly Asn Arg Gln Leu Ala Phe Met Tyr Asp Ile Ala Val Val
165     170     175
Met Asp Ala Asp Asn Val Thr Val Pro Gly Phe Leu Ser Glu Val Asn
180     185     190
Arg Ala Tyr Ser Ala Gly Val Gln Ala Met Gln Ala His Arg Thr Gly
195     200     205
Lys Asn Leu Asn Thr Asp Ile Ala Leu Leu Asp Gly Val Ser Glu Glu

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210		215		220
Ile Asn Asn Gly Phe Phe Arg Ser Gly His Asn Ala Leu Gly Leu Ser				
225		230		235
Ala Gly Leu Ala Gly Ser Gly Met Ala Phe Asp Tyr Phe Trp Tyr Tyr				240
	245		250	255
Asp Ala Val Gln Ser Leu Glu Thr Ala Gly Glu Asp Lys Glu Leu Glu				
	260		265	270
Leu Thr Leu Leu Glu Cys Gly Met His Thr Val Tyr Leu Glu His Leu				
	275		280	285
Pro Val Tyr Asp Glu Lys Thr Gln Lys Lys Glu Asn Ile Lys Asn Gln				
	290		295	300
Arg Arg Arg Trp Met Ala Ala Gln Phe Gly Ile Leu Cys Glu Gly Leu				
305		310		315
Ser Phe Ile Lys Ser Val Lys Gln Met Glu Gly Trp Trp Arg Trp Trp				320
	325		330	335
Pro Ser Phe Asp Leu Val Asp Lys Ile Ile Gln Trp Met Leu Pro Pro				
	340		345	350
Arg Leu Val Gln Leu Val Ala Val Phe Gly Phe Thr Leu Leu Ala Thr				
	355		360	365
Leu Val Tyr Arg Pro Ala Ala Ser Lys Trp Trp Ile Leu Ser Val Ala				
	370		375	380
Gln Val Ala Ala Met Phe Ile Pro Val Pro Ala Arg Leu Leu Asn Gly				
385		390		395
Arg Leu Leu Lys Ala Leu Met Gln Val Pro Ser Leu Ala Leu Gly Thr				400
	405		410	415
Ile Ala Ser Leu Phe His Leu Lys Gly Ala Asn Lys Lys Phe Ile His				
	420		425	430
Thr Glu His Gly Glu				
	435			

<210> 7670
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 7670
Glu Glu Lys Leu Gly Lys Thr Tyr Lys Thr Ile Gln Asp Lys Lys Gly
1 5 10 15
Gln Asp Lys Thr Glu Thr Ile Glu Lys Lys Arg Lys Pro Ala Asp Val
20 25 30
Pro Ala Ala Val Val Ala Ala Thr Ile Gly Met Ala Glu Val Ser Gly
35 40 45
Ile Ala Asn Ala Pro Ile Ala Ala Phe Ala Val Pro Ala Ala Pro Ser
50 55 60
Ser Gly Arg Arg Lys Gly Tyr Phe Arg Tyr Val Arg Met Arg Val Gly
65 70 75 80
Arg His Trp Trp Thr Lys Tyr Lys Pro Thr Val Ser Gly
85 90

<210> 7671
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 7671
Ser Lys His Cys Pro Val Ile Asn Val Phe Val Arg Lys Glu Asn Asn
1 5 10 15
Ile Ile Ser Ser Ala Tyr Trp Leu Leu Glu Arg Met Lys Val Phe Asn
20 25 30

Gln Leu Leu Cys Ile Leu Tyr Gly Ser Ile Ser Ile Tyr Arg His Ala
 35 40 45
 Leu Phe Gln Glu Phe Ala Lys His Phe Glu Met Lys Asp Asp Phe Asn
 50 55 60
 Ile Phe Ile Leu Cys Tyr Tyr Asn Val Phe Ile His Ala Val Ile Ile
 65 70 75 80
 Tyr Lys Leu Phe Gln Val Val Thr Asn Val Phe Asn Asn His Thr Leu
 85 90 95
 Trp Cys Ser Ser
 100

<210> 7672

<211> 467

<212> PRT

<213> B.fragilis

<400> 7672

Arg Lys Ala Cys Leu Thr Gly Lys Arg Thr Val Glu Arg Ser Arg Lys
 1 5 10 15
 Ile Leu Thr Met Thr Met Met Asn Asp Glu Leu Gln Lys Lys Arg Asp
 20 25 30
 Pro Asp Gln Ser Glu Ile Ala Phe Tyr Leu Leu Phe Ser Val Gln Leu
 35 40 45
 Val Leu Ile Ala Ile Gly Ile Phe Val Pro Ile Arg Met Gly Val Thr
 50 55 60
 Thr Leu Pro Leu Val Ile Ala Leu Ser Met Ile Thr Leu Met Arg Cys
 65 70 75 80
 Thr Gly Gln Glu Thr Asp Trp Lys Arg Gly Gln Asn Val Met Phe Gly
 85 90 95
 Leu Phe Met Val Trp Gly Ala Tyr Cys Leu Phe Glu Ile Gly Asn Pro
 100 105 110
 Asn His Val Gln Ala Ala Trp Asn Ile Ala Ile Thr His Tyr Trp Val
 115 120 125
 Tyr Pro Leu Val Phe Ala Phe Val Val Pro Leu Ala Ile Arg Asn Tyr
 130 135 140
 Lys Gly Ile Glu Trp Leu Leu Leu Ile Trp Ser Val Phe Val Leu Ile
 145 150 155 160
 Ala Ala Phe Lys Gly Tyr Trp Gln Lys Ser His Gly Phe Asn Ala Lys
 165 170 175
 Glu Leu Tyr Phe Leu Tyr Thr Leu Gly Gly Tyr Arg Thr His Leu Ile
 180 185 190
 Trp Ser Gly Ile Arg Tyr Phe Ser Cys Phe Pro Asp Ala Ala Asn Phe
 195 200 205
 Gly Val His Ser Ala Met Ala Val Thr Thr Phe Gly Ile Ala Thr Phe
 210 215 220
 Tyr Val Arg Lys Arg Trp Met Lys Val Tyr Phe Ala Ile Ile Ala Ile
 225 230 235 240
 Cys Ala Ile Tyr Gly Met Gly Ile Ser Gly Thr Arg Ala Ala Met Ala
 245 250 255
 Val Pro Phe Gly Gly Ile Ala Leu Phe Ile Leu Val Ser Lys Ser Trp
 260 265 270
 Lys Ser Phe Ala Phe Ser Thr Leu Ala Phe Ile Ala Val Phe Ser Phe
 275 280 285
 Phe Asn Phe Thr Thr Ile Gly Asp Gly Asn Gln Tyr Ile Arg Lys Met
 290 295 300
 Arg Ser Ala Phe Arg Pro Ser Glu Asp Ala Ser Tyr Gln Val Arg Val
 305 310 315 320
 Glu Asn Arg Lys Lys Met Lys Gly Leu Met Asp Glu Lys Pro Ile Gly
 325 330 335

4001

Tyr Gly Ile Gly Leu Ser Lys Gly Ala Gln Tyr Gly Pro Lys Glu Val
 340 345 350
 Met Pro Tyr Pro Pro Asp Ser Trp Leu Val Ala Val Trp Val Glu Thr
 355 360 365
 Gly Ile Val Gly Leu Met Leu Tyr Leu Leu Ile His Gly Val Leu Phe
 370 375 380
 Ala Trp Cys Ser Trp Leu Leu Met Phe Arg Ile Met Asn Gln Arg Leu
 385 390 395 400
 Arg Gly Leu Leu Ala Ala Trp Leu Cys Met Asn Ala Gly Phe Phe Ile
 405 410 415
 Ala Ala Tyr Ala Asn Asp Val Met Gln Tyr Pro Asn Ser Ile Ile Val
 420 425 430
 Tyr Thr Gly Phe Ala Leu Cys Ile Ala Gly Pro Tyr Ile Asp Pro Val
 435 440 445
 Met Gln Lys Glu Asp Glu Glu Leu Glu Arg Glu Arg Lys Glu Lys Lys
 450 455 460
 Lys Arg Asp
 465

<210> 7673

<211> 149

<212> PRT

<213> B.fragilis

<400> 7673

Thr Ile Lys Arg Ser Cys Met Gly Asp Ile Asp Ile Leu Asn Lys Phe
 1 5 10 15
 Asp Asn Asp Lys Leu Ile Asp Val Val Lys Asn Tyr Lys Arg Tyr Gly
 20 25 30
 Tyr Asp Asp Glu Leu Arg Asp Tyr Ala Ile Asn Leu Leu Gly Glu Arg
 35 40 45
 Gly Trp Ser Arg Glu Asp Leu Gln Gln Phe Gly Tyr Leu Thr Asn Tyr
 50 55 60
 Asp Tyr Asp Glu Ala Glu Lys Gln Tyr Lys Ala Tyr Asn Arg Asn Ser
 65 70 75 80
 Leu Ile Gly Ile Cys Thr Leu Val Phe Ser Gly Gly Ile Leu Ala Val
 85 90 95
 Val Tyr Leu Ile Phe Leu Ile Leu Ala Tyr Arg Asn Val Ala Lys Phe
 100 105 110
 Tyr Asn Ala Leu Gly His Asn Gln Asp Glu Thr Ala Leu Phe Asn Ala
 115 120 125
 Leu Gly Val Leu Ala Tyr Phe His Leu Lys Gly Arg Met Lys Glu Glu
 130 135 140
 Leu Lys Gly Ile Arg
 145

<210> 7674

<211> 269

<212> PRT

<213> B.fragilis

<400> 7674

Leu Lys Arg Arg Leu Met Thr Gly Glu Leu Asn His Ser Arg Glu Arg
 1 5 10 15
 Leu Glu Lys Gln Lys Ile Lys Asn Val Met Ala Lys Ile Phe Ile Ile
 20 25 30
 Leu Ile Ile Thr Leu Cys Thr Gly Cys Phe Gly Lys Gln His Ser Ser
 35 40 45
 Lys His Asn Asn Val Ser Asn Ile Asn Glu Ser Asp Ile Gln Leu Asp

50	55	60
Ser Leu Pro Leu Thr Lys Tyr Glu Tyr Lys Met Arg Gly Asn Leu Lys		
65	70	75
Asp Asp Ile Gly Asp Lys Leu Gly Ala Ile Glu Asp Tyr Ala Arg Ala		80
	85	90
Ile Lys Ile Asp Thr Ser Tyr Asp Thr Ala Tyr Tyr Asn Arg Gly Leu		95
	100	105
Met Lys Ser Ala Ile Gly Asp Arg Glu Gly Glu Leu Ala Asp Tyr Asn		110
	115	120
Lys Thr Leu Ser Ile Asn Pro Lys Tyr Leu Lys Ala Tyr Phe Asn Arg		125
	130	135
Gly Leu Leu Lys Tyr Glu Met Gly Asp Tyr Glu Gly Glu Ile Ala Asp		140
145	150	155
Tyr Arg Leu Ala Ile Lys Tyr Cys Lys Pro Asp Ala Asp Ile Tyr Asn		160
	165	170
Asn Leu Gly Arg Ala Leu Tyr Asp Leu Glu Arg Phe Lys Glu Ser Ala		175
	180	185
Glu Ala Tyr Gly Glu Gly Ile Lys Tyr Phe Pro Glu Asp Tyr Arg Leu		190
	195	200
Tyr Tyr Gly Arg Gly Leu Ala Arg Lys Arg Leu Gly Asp Arg Lys Gly		205
	210	215
Ala Cys Glu Asp Trp Val Lys Ser Ser Glu Leu Gly Cys Thr Gln Ala		220
225	230	235
Asn Ile Leu Leu Pro Leu Cys Asp Glu Tyr Ile Lys Glu Glu Asn Asp		240
	245	250
Ser Leu Lys Lys Glu Lys Glu Ser Ala Asn Lys Ile Glu		255
	260	265

<210> 7675

<211> 632

<212> PRT

<213> B.fragilis

<400> 7675

Ile Met Asn Arg Asn Leu Leu Met Pro Val Ala Val Ser Leu Ile Leu		
1	5	10
Leu Ser Gly Cys Lys Tyr Asn Asp Asp Asn Phe Glu Gly Leu Asp Asp		15
	20	25
Met Thr Gln Pro Thr Asn Leu Met Lys Ile Glu Tyr Thr Leu Thr Asp		30
	35	40
Ala Asp Tyr Ala Thr Ile Ser Thr Asn Ser Val Asn Lys Asp Ser Ala		45
	50	55
Ala Asn His Lys Pro Asp Asp Leu Ser Lys Asp Leu Ala Asn Val Lys		60
65	70	75
Thr Asn Met Tyr Leu Thr Glu Lys Ile Thr Gly Ala Thr Tyr Ile Pro		80
	85	90
Ala Phe Leu Leu Asp Lys Tyr Tyr Thr Ala Asp Lys Gly Ser Ser Ala		95
	100	105
Lys Ile Thr Tyr Lys Tyr Lys Glu Ala Met Ser Ser Leu Ser Glu		110
	115	120
Tyr Ala Ser Val Lys Tyr Leu Lys Pro Thr Asp Ala Glu Tyr Lys Leu		125
	130	135
Val Tyr Gly Glu Asn Ala Phe Ala Pro Tyr Leu Asn Glu Lys Thr Glu		140
145	150	155
Gly Gln Met Ser Lys Ile Leu Asn Glu Lys Phe Lys Asp Ala Glu Lys		160
	165	170
Gly Thr Ala Val Phe Val Asp Tyr Lys Leu Gly Glu Gly Gln Leu Glu		175
	180	185
Asn Pro Leu Met Trp Gln Asn Phe Glu Ala Leu Pro Thr Gly Asp Leu		190

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<210> 7676
<211> 464
<212> PRT
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Thr Lys Gly Asp Asp Gly Thr Asn Trp Asn Thr Asn Tyr Glu Gln Ala
 450 455 460

<210> 7677
 <211> 801
 <212> PRT
 <213> B.fragilis

<400> 7677
 Ile Gly Gln Ser Met Asp Arg Ile Leu His Asp Val Asp Asn Ala His
 1 5 10 15
 Lys Ile Leu Gln Leu Thr Ser Asp Thr Leu Ile Leu Val Asp Lys Asn
 20 25 30
 Gly Thr Cys Leu Asp Ile Asp Pro His Ser Asp Leu Trp Phe Leu Gln
 35 40 45
 Glu Asp Arg Leu Leu Gly Lys Asn Leu Phe Asn Leu Leu Pro Asp His
 50 55 60
 Thr Phe Gln Lys Leu Leu Pro Asp Phe Lys Arg Val Thr Gln Gln Gly
 65 70 75 80
 Ile Thr Val Asn Arg Asn Tyr Arg Leu Pro Leu Glu Gly Gly Glu Thr
 85 90 95
 Tyr Tyr Phe Lys Cys Ile Met Gln Pro Tyr Asp Cys Asp Lys Val Leu
 100 105 110
 Cys Gln Tyr Arg Asp Ile Thr Ala Arg Asn Asn Val Lys Leu Gln Leu
 115 120 125
 Glu Arg Thr Asn Tyr Asp Leu Lys Glu Ile Gln Lys Ala Ala Gln Ile
 130 135 140
 Gly Gln Trp Lys Tyr Ser Ser Arg Glu Arg Thr Phe Tyr Tyr Arg Gly
 145 150 155 160
 Tyr Asn Gly Ile Val Cys Thr Glu Glu Glu Arg Ser Ile Asn Phe Gln
 165 170 175
 Asp Tyr Tyr Glu Thr Ile Leu Ser Glu Asp Leu Pro Ala Val Asn Thr
 180 185 190
 Trp Met Glu Ala Asn Arg Arg Glu Leu Leu Lys Glu Tyr Ile Glu Tyr
 195 200 205
 Arg Ile Leu Leu Glu Gly Gln Val Tyr Tyr Met Arg Gln Gln Cys Tyr
 210 215 220
 Leu Arg Asn Glu Glu Glu Asp Gly Asn Ile Val Leu Glu Gly Tyr Ile
 225 230 235 240
 Gln Asn Ile Thr Asp Ile Gln Arg Lys Arg Asn Asp Ile Asn Thr Leu
 245 250 255
 Thr His Ala Ile Asn Asn Ala Lys Glu Ser Val Tyr Ala Ala Arg Arg
 260 265 270
 Asp Gly Thr Leu Ile Phe Ala Asn Arg Gln Phe Arg Leu Asn His Arg
 275 280 285
 Ile Ala Glu Gln Ala Asp Leu Ser Leu Ile Arg Val Phe Asp Val Val
 290 295 300
 Gly Asp Met Thr Cys Ile Glu Asp Trp Glu Glu Arg Tyr Arg Ser Ile
 305 310 315 320
 Arg Glu Gly Gln Thr Leu Asn Phe Leu Ala Tyr Gln Pro Leu Lys His
 325 330 335
 Asp Lys Asn Thr Leu Ala Phe Glu Gly Thr Met Tyr Ser Val Thr Thr
 340 345 350
 Asp Asp Gly Glu Glu Thr Phe Trp Ser Phe Thr His Asp Ile Ser Glu
 355 360 365
 Arg Ile Arg Tyr Glu Ser Gln Ile Lys Arg Phe Asn Arg Ile Met Asp
 370 375 380
 Thr Thr Met Glu Asn Ile Pro Ala Gly Ile Val Val Lys Asp Ile Glu
 385 390 395 400

Asn Asp Phe Arg Tyr Ile Tyr Arg Asn Arg Glu Ser Tyr Asn Arg Asp
 405 410 415
 Ile Ser Ser Glu Asn Ala Ile Gly Met Asn Asp Phe Asp Tyr Tyr Pro
 420 425 430
 Pro Glu Met Ala Gln Gln Lys Arg Lys Glu Asp Met Glu Ile Ala Ala
 435 440 445
 Thr Gly Lys Gly Met His Trp Ile Met Glu Gly Lys Asp Lys Asn Gly
 450 455 460
 Asn Leu Leu Ile Leu Asp Lys Gln Lys Ile Met Val Glu Ser Glu Asp
 465 470 475 480
 Phe Ser Pro Ile Ile Val Ser Ile Glu Trp Asp Ile Thr Gln Leu Glu
 485 490 495
 Leu Met Arg Arg Glu Leu Ile Glu Ser Lys Glu Lys Ala Glu Thr Ser
 500 505 510
 Asp Lys Leu Lys Ser Ala Phe Leu Ala Asn Met Ser His Glu Ile Arg
 515 520 525
 Thr Pro Leu Asn Ala Ile Val Gly Phe Ser Arg Ile Ile Ser Glu Ser
 530 535 540
 Asp Asn Ala Glu Glu Arg Arg Glu Tyr Tyr Glu Ile Val Asp Ala Asn
 545 550 555 560
 Asn Glu Arg Leu Leu Gln Leu Ile Asn Glu Ile Leu Asp Leu Ser Lys
 565 570 575
 Ile Glu Ser Gly Ile Val Glu Phe Thr Tyr Gly Pro Val Arg Leu His
 580 585 590
 Thr Leu Cys Lys Glu Ile His Asp Ala His Val Phe Arg Cys Pro Gln
 595 600 605
 Gly Val Glu Leu Arg Phe Asp Ser Pro Asp Glu Ala Leu Ser Ile His
 610 615 620
 Ser Asp Lys Asn Arg Ile Phe Gln Val Phe Ser Asn Leu Ile Gly Asn
 625 630 635 640
 Ala Phe Lys Phe Thr Thr Glu Gly Ser Val Ser Tyr Gly Tyr Lys Gln
 645 650 655
 Glu Gly Glu Arg Val Val Phe Tyr Val Lys Asp Thr Gly Leu Gly Ile
 660 665 670
 Glu Pro Glu Lys Leu Gly Arg Val Phe Gln Arg Phe Ala Lys Leu Asn
 675 680 685
 Asn Phe Ala Gln Gly Thr Gly Leu Gly Leu Ser Ile Cys Lys Thr Ile
 690 695 700
 Ile Glu Arg Leu Gly Gly Glu Ile Ala Val Ser Ser Glu Val Gly Thr
 705 710 715 720
 Gly Thr Thr Phe Thr Phe Trp Leu Pro Leu Glu Asn Val Ile Gln Asp
 725 730 735
 Thr Glu Thr Gly Thr Asn Ser His Leu Pro Arg Arg Ser Arg Arg Asn
 740 745 750
 Thr Ala Val Gly Ser Ala Pro Gly Gln Arg Gly Asn Asp Gly Lys Gly
 755 760 765
 Arg Gly Pro Ser Gly Asn Arg Ser Arg Asn Gly Glu Ser His His Thr
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<211> 154

<212> PRT

<213> B.fragilis

<400> 7678

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 Arg Ser Leu Ile Val Glu Gln Leu Thr Ala Asp Glu Pro Val Thr Pro
 35 40 45
 Glu Ala Val Lys Gly Leu Ser Thr Ile Glu Glu Val Phe Ala His Phe
 50 55 60
 Leu Pro Asn Ile Asp Val Glu Phe Glu Asn Glu Glu Gly Gln Pro Val
 65 70 75 80
 Lys Glu Asn Phe Arg Phe Ser Ser Val Ala Asp Phe Ser Val Lys Asn
 85 90 95
 Met Thr Gln Asn Ser Pro Phe Leu His Lys Leu Asp Thr Glu Lys Thr
 100 105 110
 Phe Tyr Glu Gly Met Val Thr Gln Leu Arg Ser Asn Lys Val Leu Gln
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 Arg Val Leu Glu Asn Pro Glu Ser Lys Lys Ala Phe Ile Ser Ala Leu
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 Glu Ala Leu Ser Asn Glu Leu Lys Thr Glu
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 Val Lys Gly Gln Val Val Asp Ala Glu Thr Gly Glu Pro Leu Ile Gly
 35 40 45
 Ala Ala Val Thr Ile Val Gly Thr Thr Gln Gly Ser Val Thr Asn Leu
 50 55 60
 Asp Gly Met Phe Thr Gln Lys Ala Ala Ser Gly Ser Thr Leu Leu Ile
 65 70 75 80
 Lys Tyr Leu Gly Tyr Lys Glu Phe Ser Lys Lys Ile Thr Gln Lys Gly
 85 90 95
 Gly Thr Glu Asp Leu Gly Val Ile Lys Met Ala Ala Asp Ala Met Val
 100 105 110
 Leu Asn Asp Val Ile Ile Thr Ser Ser Val Ala Val Ser Arg Lys Thr
 115 120 125
 Pro Val Ala Val Ser Thr Val Asp Pro Val Phe Ile Glu Glu Lys Leu
 130 135 140
 Gly Thr Gln Glu Phe Pro Glu Val Leu Lys Ser Thr Pro Gly Ile Tyr
 145 150 155 160
 Ala Thr Lys Gln Gly Gly Gly Phe Gly Asp Ser Lys Val Asn Ile Arg
 165 170 175
 Gly Phe Lys Thr Glu Asn Ser Ala Met Met Ile Asn Gly Val Pro Met
 180 185 190
 Asn Asp Met Glu Trp Gly Gly Ile Tyr Trp Ser Asn Trp Ala Gly Leu
 195 200 205
 Ser Asp Val Thr Arg Ser Met Gln Val Gln Arg Gly Leu Gly Ala Ser
 210 215 220
 Lys Val Ala Ala Pro Ser Val Gly Gly Ser Ile Asn Ile Val Thr Asn
 225 230 235 240
 Thr Ile Asp Ala Asn Lys Gly Gly Phe Val Ser Tyr Gly Met Gly Asn
 245 250 255

Asp	Gly	Leu	Asn	Lys	Ile	Leu	Phe	Lys	Val	Ser	Thr	Gly	Leu	Thr	Lys
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Ser	Gly	Trp	Ala	Met	Thr	Leu	Leu	Gly	Gly	Lys	Thr	Trp	Ala	Asp	Gly
		275						280					285		
Tyr	Ile	Gln	Gly	Thr	Asn	Tyr	Glu	Ala	Tyr	Asn	Trp	Phe	Val	Asn	Ile
		290						295					300		
Thr	Lys	Arg	Phe	Asn	Asp	Asn	His	Gln	Leu	Ser	Phe	Thr	Ala	Phe	Ala
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Ala	Pro	Gln	Trp	His	Asn	Gln	Arg	Gly	Asn	Lys	Asp	Gly	Leu	Thr	Ile
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Glu	Gly	Trp	Gln	Glu	Val	Ala	Lys	Asn	Tyr	Met	Asn	Gly	Glu	Lys	Pro
			340					345					350		
Tyr	Arg	Tyr	Asn	Pro	Thr	Tyr	Gly	Phe	Gly	Leu	Asn	Gly	Gln	Arg	Lys
		355					360					365			
Ser	Ser	Ala	Tyr	Asn	Val	Tyr	Asn	Lys	Pro	Gln	Leu	Ser	Leu	Asn	His
		370					375				380				
Leu	Trp	Gln	Ile	Asn	Glu	Lys	Ser	Ser	Leu	Ser	Thr	Ala	Leu	Tyr	Ala
					390					395					400
Ser	Ile	Gly	Arg	Gly	Tyr	Gly	Tyr	Ser	Gly	Gln	Gly	Leu	Thr	Ser	Ala
				405					410					415	
Asp	Arg	Ser	Asn	Trp	Tyr	Gly	Ser	Asn	Asn	Gly	Asn	Leu	Asn	Met	Thr
			420					425					430		
Phe	Arg	Lys	Ala	Asp	Gly	Thr	Phe	Ala	Tyr	Asp	Glu	Ile	Tyr	Ala	Leu
		435					440					445			
Asn	Glu	Ala	Ser	Glu	Asn	Gly	Ser	Val	Met	Ala	Met	Ser	Lys	Ser	Lys
		450				455					460				
Asn	Phe	His	Asn	Trp	Tyr	Gly	Leu	Leu	Ser	Thr	Tyr	Thr	Thr	Lys	Phe
		465				470				475					480
Gly	Asp	Tyr	Phe	Asp	Phe	Tyr	Gly	Gly	Ile	Asp	Tyr	Arg	Tyr	Tyr	Lys
				485					490					495	
Gly	Thr	His	Thr	Asn	Glu	Leu	Val	Asp	Leu	Tyr	Gly	Gly	Asp	Phe	Tyr
				500				505					510		
Val	Asp	Ser	Ser	Ser	Arg	Lys	Ser	Val	Leu	Ala	Ser	Asn	Asn	Ala	Ala
		515					520					525			
Ala	Ala	Ala	Gly	Ser	Ser	Phe	Val	Asn	Gln	Lys	Leu	Lys	Val	Gly	Asp
		530				535					540				
Ile	Val	Tyr	Arg	Asp	Phe	Asp	Gly	Tyr	Val	Met	Ser	Glu	Gly	Val	Phe
		545				550				555					560
Ala	Gln	Gly	Glu	Tyr	Asn	Arg	Asp	Lys	Leu	Ser	Ala	Phe	Ile	Ser	Gly
				565					570					575	
Ser	Val	Ser	Asn	Thr	Gly	Tyr	Trp	Arg	Tyr	Asp	Arg	Phe	Tyr	Tyr	Asp
			580					585					590		
Lys	Ala	His	Ala	Lys	Ser	Lys	Thr	Val	Asn	Phe	Ile	Gly	Trp	Asn	Ala
		595					600					605			
Lys	Gly	Gly	Leu	Asn	Tyr	Asn	Leu	Thr	Glu	Asn	His	Asn	Val	Phe	Ala
						615					620				
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					630				635						640
Leu	Asn	Ser	Thr	Val	Ser	Asn	Ala	Thr	Asn	Pro	Asp	Ala	Val	Asn	Glu
				645					650					655	
Lys	Val	Phe	Ser	Phe	Glu	Ile	Gly	Tyr	Gly	Tyr	Arg	Ser	Ser	Phe	Leu
			660					665					670		
Thr	Val	Asn	Ile	Asn	Ala	Tyr	His	Thr	Arg	Trp	Met	Asp	Lys	Thr	Thr
		675					680					685			
Thr	Arg	Ser	Gln	Asp	Ile	Thr	Asn	Tyr	Tyr	Glu	Gly	Ser	Leu	Ser	Glu
		690				695					700				
Pro	Tyr	Asp	Ala	Ser	Lys	Leu	Val	Ser	Thr	Lys	Ser	Val	Ile	Asn	Met
					710					715					720
Gln	Gly	Val	Asn	Ala	Leu	His	Gln	Gly	Val	Glu	Leu	Asp	Phe	Val	Ala

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 Lys Pro Phe Gln Trp Leu Asp Leu Ser Gly Met Phe Ser Ile Gly Asn
 740 745 750
 Trp Arg Trp Asp Ser Asn Ala Ser Gly Ser Phe Thr Val Glu Gly Gln
 755 760 765
 Phe Val Asn Ser Ala Ser Ile Lys Gly Ser Asp Gly Lys Asp Val Thr
 770 775 780
 Val Leu Val Asn Ala Ala Asn Gly Leu Glu Pro Gly Thr Met Lys
 785 790 795 800
 Leu Asn Leu Lys Asp Val Lys Val Gly Gly Ser Ala Gln Thr Thr Ala
 805 810 815
 Ala Leu Gly Ala Thr Phe Lys Ile Asp Lys Ala Leu Arg Leu Gly Ile
 820 825 830
 Asp Trp Asn Leu Tyr Ala Arg Asn Tyr Ala Asp Trp Ser Leu Asn Ser
 835 840 845
 Asn Asp Leu Val Met Asn Ser Glu Lys Asp Phe Ser Thr Pro Trp Arg
 850 855 860
 Ile Pro Thr Ala Ser Thr Phe Asp Leu Asn Ala Ser Tyr Lys Phe Asn
 865 870 875 880
 Phe Gly Lys Leu Asn Ala Val Leu Ser Gly Asn Val Asn Asn Leu Phe
 885 890 895
 Asp Gln Thr Tyr Ile Ser Asp Ala Thr Asp Gly Ser Asn His Asp Trp
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 Lys Thr Ala Tyr Asn Val Phe Tyr Gly Phe Gly Arg Thr Tyr Ser Leu
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 Arg Leu Lys Val Asn Phe
 930

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 Cys Lys Val Phe Ile Val Trp Leu Ala Tyr Cys Ile Phe Val Ser Cys
 35 40 45
 Arg Leu Asn Tyr Trp Leu Gln Tyr Ser Asn Tyr Leu Phe Ile Leu Leu
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 Trp Gly Ser Cys Asp Lys Tyr Arg Ser Tyr Asn Ser Val Gly Ser Ile
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 Lys Leu Ser Phe

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 His Gly Lys Tyr Val Ser Ile Asp Lys Leu Ala Glu Ile Ile Thr Tyr
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 His Gly Thr Thr Ser Asp Asn Asp Arg Trp Ser Asn Tyr Pro Ser Thr
 35 40 45
 Val Gln Gln Leu Asn Arg Ile Ala Phe Gly Ile Gly Val Asp Lys Asn
 50 55 60
 Asp Thr Glu Gly Ile Asn Asp Met Gly Ser Glu Lys Phe Lys Glu Ala
 65 70 75 80
 Cys Cys Asp Phe Ser Phe Glu Trp Gly Asn Asn Gly Ile Leu Lys Ala
 85 90 95
 Gly Asn Asn Trp Phe Leu Asn Thr Val Glu Asp Arg Arg Ile Ala Ser
 100 105 110
 Glu Lys Leu Ile Glu His Ile Asn Gly Asn Ile Gly Lys Cys Glu Glu
 115 120 125
 Val Val Leu Ile Gly His Ser His Gly Gly Asn Val Ala Ile Gln Ala
 130 135 140
 Ala Asp Lys Ile Phe Ser Lys Ile Pro Ala Val Lys Arg Val Phe Val
 145 150 155 160
 Leu Thr Ile Gly Thr Pro Ala Phe Asn Arg Leu Phe Ile Thr Ser Tyr
 165 170 175
 Ile Asn Asn Lys Asn Leu Ile Thr Phe Asn Glu Lys Val Ser Glu Lys
 180 185 190
 Ile Leu Tyr Leu Gly Lys Asp Tyr Val Val Pro Val Ile Lys Leu Gly
 195 200 205
 Arg Lys Phe Trp Gly Pro Leu Gly Ile Phe Leu Tyr Ile Asn Cys Glu
 210 215 220
 Asn Pro Ala Thr Trp Lys Asn Lys Asp Lys Ile Thr His Ile Ala Leu
 225 230 235 240
 Trp Asn Lys Lys Asp His Val Asp Asp Met Ala Trp Val Leu Asp Arg
 245 250 255
 Asn Lys Tyr Phe Pro Tyr His Gly Met Thr Asn Asn Ser Ala Tyr Phe
 260 265 270
 Thr Asn Ser Ile Thr Asp Asn Val Glu Phe Asp Phe Ala Pro Ala Asp
 275 280 285
 Ile Arg Asp Tyr Tyr Lys Arg Glu Ile Lys Pro Phe Ala Glu Trp Leu
 290 295 300
 Ala Asn Leu Asp Tyr Leu Arg Phe Cys Leu Val Asp Leu Arg Leu Lys
 305 310 315 320
 Gly Tyr Asp Leu Pro Lys Met Pro Thr Leu Leu Thr Tyr Lys Glu Tyr
 325 330 335
 Ile Val Arg Arg Lys Lys Met Glu Ala Ser Lys Leu Glu Glu Lys Lys
 340 345 350
 Tyr Val Asn Glu Arg Asp Ala Leu Arg Val Asp Ile Pro Lys Pro Lys
 355 360 365
 Pro Ile Met Met Cys Ala Ser Thr Arg Leu Arg Glu Glu Ala Asn Asp
 370 375 380

seq. data in GenBank
 accession number U00096.1
 version 1.0
 date 1998-01-01
 description B.fragilis
 genome
 source B.fragilis
 strain 6300
 organism B.fragilis
 taxon Bacteria
 phylum Proteobacteria
 class Gammaproteobacteria
 order Rhodospirillales
 family Rhodospirillaceae
 genus Bifidobacterium
 species Bifidobacterium fragilis

Leu Gln Glu Leu Phe Lys Ser Thr Asn Gly Phe Tyr Gln Phe Met Thr
 385 390 395 400
 Asp Ile Asp Glu Ala Lys Lys Asp Arg Ser Lys Val Val Asp Thr Gln
 405 410 415
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 420 425 430
 Glu Glu Ile Lys Gln Glu Met Tyr Arg Glu Thr Glu Phe Leu Glu Lys
 435 440 445
 Ala Met Ala Ile Tyr Leu Leu Asp Asn Thr Ser Phe Gly Glu His Gly
 450 455 460
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 465 470 475 480
 Arg Ile Lys Pro Phe Pro Asn Ala Arg Asn Ile Asn Thr Glu Phe
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<400> 7683
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 20 25 30
 Gly His Val Glu Leu Asp Ser Ile Pro Leu Thr Ala Tyr Glu Tyr Lys
 35 40 45
 Glu Arg Gly Lys Arg Lys Ser Ala Asn Gly Asp Lys Gln Gly Ala Ile
 50 55 60
 Asp Asp Tyr Thr Arg Ala Ile Met Val Glu Pro Thr Tyr Asp Thr Ala
 65 70 75 80
 Tyr His Asn Arg Gly Val Val Arg Ala Asp Ile Gly Tyr Tyr Lys Asp
 85 90 95
 Ala Ile Leu Asp Tyr Thr Lys Ala Ile Glu Ile Asn Pro His Phe Ala
 100 105 110
 Ala Ser Tyr Phe Ser Arg Ala Asn Ala Lys Val Asp Leu Arg Asp Asn
 115 120 125
 Lys Gly Ala Leu Ser Asp Tyr Ser Lys Ala Ile Glu Leu Asn Pro Arg
 130 135 140
 Phe Ile Asp Pro Tyr Val Asn Arg Gly Val Leu Lys Ser Glu Met Gly
 145 150 155 160
 Asp Tyr Glu Gly Glu Ile Ala Asp Tyr His Leu Ala Ile Lys His Cys
 165 170 175
 Glu Pro Ser Val Asn Leu Tyr Asn Asn Leu Gly Arg Ala Leu Tyr Ala
 180 185 190
 Leu Glu Arg Phe Lys Glu Ser Ala Glu Ala Tyr Gly Glu Gly Ile Lys
 195 200 205
 Tyr Phe Pro Glu Asp Tyr Arg Leu Tyr Tyr Gly Arg Gly Leu Ala Arg
 210 215 220
 Lys Arg Thr Gly Asp Lys Lys Gly Ala Cys Glu Asp Trp Met Lys Ser
 225 230 235 240
 Ser Glu Leu Gly Cys Val Glu Ala Asn Leu Leu Leu Pro Leu Cys Lys
 245 250 255
 Glu Cys Asp Thr Lys Lys
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<213> B.fragilis

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		20						25					30		
Ser	Asn	Thr	Met	Leu	Leu	Thr	Asp	Phe	Gln	Asn	Phe	Leu	Tyr	Ile	Ser
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<212> PRT

<213> B.fragilis

<400> 7685

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		20						25					30		
Glu	Pro	Lys	Phe	Asn	Ala	Thr	Glu	Ala	Val	Lys	Ile	Arg	Ile	Thr	Ala
		35					40					45			
Glu	Cys	His	Asn	Val	Thr	Ile	Pro	Lys	Asn	Gly	Leu	Glu	Tyr	Glu	Trp
	50					55					60				
Ser	Tyr	Val	Asp	Ser	Thr	Gly	Phe	Met	Lys	Ser	Phe	Thr	Thr	Lys	Lys
	65				70					75					80
Gly	Val	Val	Met	Leu	His	Cys	Pro	Asn	Phe	Phe	Cys	Gly	Arg	Val	Met
			85						90					95	
Thr	Ile	Lys	Val	Lys	Val	Asn	Leu	Glu	Ile	Ser	Lys	Phe	Asp	Glu	Lys
		100						105					110		
Ile	Lys	Phe	Ser	Ser	Phe	Asp	Phe	Gly	Lys	Phe	Asp	Thr	Leu	Glu	Asp
	115					120						125			
Thr	Ile	Glu	Ile	Lys	Pro	Gln	Cys	Asn	Lys	Lys	Leu	Ser	Asp	Asn	Ala
	130				135						140				
Glu	Trp	Leu	Pro	Asp	Glu	Val	Glu	Met	Pro	Asn	Cys	Val	Gln	Ser	Ser
	145			150						155					160
Val	Thr	Leu	Tyr	Gly	Tyr	Asn	Gly	Ser	Glu	Met	Gly	Leu	Val	Arg	Met
			165						170					175	
Ile	Lys	Glu	Lys	Gly	Lys	Ile	Ile	Trp	Lys	Gly	Glu	Asp	Lys	Val	Met
		180						185					190		
Val	Arg	Asp	Asn	Val	Val	Ser	Ala	Leu	Phe	Asn	Arg	Asn	His	Cys	Thr
		195					200					205			
Ser	Ser	Thr	Ala	Asp	Asp	Ser	Ile	Tyr	Thr	Leu	Gln	Phe	Gln	Leu	Thr
	210					215					220				
Asp	Ala	Arg	Asn	Gly	Ser	Leu	Leu	Lys	Ser	Tyr	Ser	Arg	Asp	Tyr	Thr
	225				230					235					240
Ile	Lys	Gly	Arg	Glu	Ala	Ile	Lys	Pro	Leu	Ala	Gly	Cys	Pro	Ile	Gln
			245					250						255	
Pro	Val	Val	Val	Gly	Asp	Ile	Thr	Ile	Ala	Glu	Asn	Asn	Phe	Lys	Pro
		260						265					270		
Cys	Lys	Tyr	Thr	Gln	Ile	Asp	Val	Glu	Tyr	Thr	Lys	Asp	Lys	Glu	Gly
		275				280						285			
Lys	Glu	Lys	Gln	Lys	Met	Thr	Val	Phe	Lys	Glu	Gly	Leu	Gln	Ser	Thr
	290					295					300				
Asn	Thr	Val	Asn	Leu	Ile	Gly	Gly	Glu	Arg	Lys	Ile	Thr	Val	Thr	Leu
	305				310					315					320
Leu	Glu	Tyr	Thr	Pro	Lys	Lys	Cys	Thr	Leu	Lys	Glu	Asn	Ser	His	Lys

325 330 335
 Lys Lys Glu Glu Val Pro Phe Met Leu Tyr Gly Glu Asn Lys Ser Lys
 340 345 350
 Leu Pro Ile Ser Val Ser Gly Lys Thr Gly Lys Ile Glu Asn Ile Lys
 355 360 365
 Ile Lys Tyr Asn Tyr Gly Ile Ile Asn Ala Ile Lys Thr Leu Trp Leu
 370 375 380
 Pro Met Ser Gly Ile Val Gln Thr Ser Lys Leu Tyr Thr Ser Tyr Ala
 385 390 395 400
 Asn Cys Arg His Phe Asn Asp Val Ile Phe Asn Met Tyr Pro Asp Thr
 405 410 415
 Lys Trp Glu Ala Phe Val Glu Leu Ser Ser Ser Lys Pro Arg Leu Tyr
 420 425 430
 Ser His Thr Asn Met Pro Ala Glu Tyr Ser Ile Phe Glu Arg His Gln
 435 440 445
 Lys Lys Ala Leu Ser Ala Ala Lys Glu Asp Lys Asp Ile Gly Leu Ser
 450 455 460
 Phe Ser Leu Met Ala Thr Tyr Asp Asp Asp Ile Glu Ile Lys Leu Thr
 465 470 475 480
 Ala Asp Ile Glu Lys Ser Val Lys Thr Val Ser His Val Leu Lys Thr
 485 490 495
 Ile Arg Asp Ala Leu Asp Val Leu Ser Phe Lys Lys Ser Val Asp Asp
 500 505 510
 Asn Lys Asp Lys Leu Lys Ala Arg Asn Val Leu Pro Lys Ser Ser Lys
 515 520 525
 Leu Pro Val Phe Ile Glu Ile Ser Ser Pro Val Leu Lys Ile Gly Gly
 530 535 540
 Gly Trp Gln Tyr Asp Leu Asn Ser Glu Asn Gln Leu Ile Arg Lys Gly
 545 550 555 560
 Glu Ile Ala Ile Ala Ala Ser Pro Leu Ile Glu Ala Lys Gly Gly Ile
 565 570 575
 Asp Leu Ile Ala Cys Ser Thr Phe Ile Pro Val Val Gly Gln Ile Ile
 580 585 590
 Lys Ala Ile Leu Lys Leu Asn Asp Phe Ala Glu Trp Ala Thr Lys Tyr
 595 600 605
 Leu Ser Asn Asp Lys Ala Lys Tyr Glu Gly Leu Ile Trp Phe Asn Ile
 610 615 620
 Tyr Leu Lys Gly Ser Leu Ser Ile Val Gly Thr Val Lys Leu Ser Glu
 625 630 635 640
 Glu Asn Arg Thr Val Lys Phe Glu Ser Pro Val Asn Ile Val Phe Val
 645 650 655
 Val Glu Leu Gly Ile Ser Ala Glu Val Lys Val Glu Thr Val Thr Ile
 660 665 670
 Thr Gly Asn Asn Thr Tyr Thr Val Arg Ala Gly Ala Ser Gly Glu Ala
 675 680 685
 Ser Thr Gly Leu Thr Phe Lys Pro Ser Met Gly Tyr Ser Thr Asp Glu
 690 695 700
 Gly Ile Tyr Leu Gly Phe Lys Val Ser Phe Asp Gly Ile Ile Leu Thr
 705 710 715 720
 Val Ser Gly Glu Ala Lys Phe Glu Gln Lys Lys Lys Gly Lys Lys Thr
 725 730 735
 Leu Ser Ile Gly Pro Glu Ile Asn Gly Glu Pro Leu Pro Pro Leu Ile
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Leu Leu Ala Glu Ala Gly Phe Asp Thr Ala Gln Ile Met Met Val Arg
      35      40      45
Asp Gly Asn Asn Leu Ser Asn Val Ser Lys Asp Ile Arg Ser Val Lys
      50      55      60
Tyr Arg Asn His Val Gly Ile Ala Glu Gly Thr Tyr Ile Glu Leu Lys
65      70      75      80
Thr Asn Arg Arg Gly Ile Tyr Asp Ser Leu Pro Glu Gly Leu Phe His
      85      90      95
Glu Ala Leu Phe Pro Gly Lys Val Lys Asp Leu Gly Leu Ile Leu Glu
      100     105     110
Glu Met Gln Gln His Ser Asn Glu Phe Phe Ile Arg Arg Phe Phe
      115     120     125
Ser Leu Leu Glu Ser Glu Val Asp Arg Glu Gly Ile Gln Ala Gln Leu
      130     135     140
Leu Glu Leu Arg Tyr Asp Lys Lys Asn Lys Tyr Ser Asp Tyr Ala Lys
145     150     155     160
Leu Phe Ala Ala Cys Trp Pro Val Ile His Ile Leu Ser Gly Gln Gly
      165     170     175
Ala Leu Leu Phe Ile Lys Phe Met Pro His Ile His Ser Ile Arg Gly
      180     185     190
Arg Leu Glu Glu Val Ser Asp Ala Leu Ser Gln Ile Leu Glu Ala Pro
      195     200     205
Val Lys Val Arg Pro Lys Met Val Gln Arg Thr Ile Arg Ala Gln Asn
      210     215     220
Pro Asn Arg Leu Gly Asn Met Arg Leu Gly Ala Asn Ser Val Asn Val
225     230     235     240
Gly Val Leu Asn Ser Ala Gly Ala Asp Leu His Ile His Ile Ser Asp
      245     250     255
Leu Pro Thr Arg Glu Val Glu Arg Phe Leu Pro Gly Asn Arg Ser Arg
      260     265     270
Lys Ala Leu Glu Met Leu Ala Asp Ile Phe Leu Gly Ala Trp Gln Glu
      275     280     285
Phe Asp Val Thr Val Ser Val Ser Pro Asp Glu Arg Lys Thr Tyr Leu
      290     295     300
Lys Pro Thr Gly Asp Ala Ser Pro Cys Tyr Leu Gly Ile Asn Thr Tyr
305     310     315     320
Leu

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<210> 7687
 <211> 307
 <212> PRT
 <213> B.fragilis

<400> 7687

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Gln Pro Asp Ile Met Asn Gly Leu Gln Ile Ile Lys Thr Leu Ala Leu
1      5      10      15
Lys Ile Arg Tyr Ala Ser Ile Val Glu Trp Tyr Asn Phe Trp Ser Ile
      20      25      30
Val Leu Gln His His Gln Asn Ile Val Pro Thr Val Ala Ser Ile Asp

```

35 40 45
 Glu Thr Ile Arg His Ile Thr Glu Gly Asn Arg Ser Ile Ser Arg Phe
 50 55 60
 Gly Asp Gly Glu Met Leu Leu Thr Ser Pro Ser Lys Ser Ile Gly Phe
 65 70 75 80
 Gln Glu Gly Ser Pro Leu Leu Ala Lys Arg Leu Arg Glu Val Leu Val
 85 90 95
 Ser His Glu Glu Gly His Leu Val Ala Ile Pro Asp Val Phe Ser Gly
 100 105 110
 Leu Asn Arg Tyr Arg Arg Lys Cys Arg Arg Phe Gln Arg Thr His Phe
 115 120 125
 Phe Ile Tyr Gly Lys Trp Trp Asp Gln Leu Leu Ile Pro Gly Arg Lys
 130 135 140
 Tyr Glu Asn Ala Phe Leu Ser Arg Pro Tyr Met Asp Tyr Thr Ser Lys
 145 150 155 160
 Glu His Cys Ala Arg Trp Phe Arg Glu Leu Lys Thr Ile Trp Glu Gly
 165 170 175
 Arg Asp Ile Val Phe Ile Glu Gly Ala Met Ser Arg Leu Gly Val Gly
 180 185 190
 Asn Asp Leu Phe Asp Asn Ala Gly Ser Ile Arg Arg Ile Leu Cys Pro
 195 200 205
 Pro Arg Asn Ala Phe Glu Arg Tyr Asp Arg Ile Leu Asn Glu Ala Leu
 210 215 220
 Lys Val Glu Lys Glu Val Leu Phe Leu Ile Ala Leu Gly Pro Thr Ala
 225 230 235 240
 Thr Val Leu Ala Tyr Asp Leu His Asn Ala Gly Tyr Gln Ala Val Asp
 245 250 255
 Ile Gly His Ile Asp Val Glu Tyr Glu Trp Trp Arg Met Lys Ala Arg
 260 265 270
 Arg Lys Val Lys Leu Glu Lys Lys Tyr Val Asn Glu Ala Phe Gly Asn
 275 280 285
 Lys Arg Val Thr Asp Ala Gly Glu Gly Tyr Arg Lys Glu Ile Ile Ala
 290 295 300
 Gln Ile Ser
 305

<210> 7688

<211> 158

<212> PRT

<213> B.fragilis

<400> 7688

Tyr Met Asp Ile Ala Lys Ile Ile Tyr Val Ser Leu Thr Met Leu Thr
 1 5 10 15
 Ala Trp Val Phe Met Ser Ile Ala Phe Pro Ile Asp Thr Tyr Lys His
 20 25 30
 Leu Leu Gly Val Val Gly Ser Tyr Ile Cys Val Ser Cys Ser Ala Leu
 35 40 45
 Phe Ala Ser Trp Phe Ala Trp His Trp Val His Pro Phe Ser Tyr Val
 50 55 60
 Lys Tyr Leu Leu Cys Gly Leu Leu Thr Ala Phe Leu Phe His Ala Gly
 65 70 75 80
 Leu Thr Ile Gly Cys Ser Ile Pro Ile Ile Phe Leu Ser Cys Cys Gly
 85 90 95
 Val His Val Ile Ser Thr Glu Ala Ile Thr Leu Trp Glu Val Leu Ser
 100 105 110
 Tyr Leu Phe Ser Ile Phe Ile Met Ser Phe Tyr Phe Val Gly Ile Phe
 115 120 125
 Thr Phe Gly Gln Cys Leu Leu Thr Ala Ser Ile Thr Lys Ile Ile Ile

130 135 140
 Trp Lys Leu Asn Ile Ser Asn Asn Ile Thr Asn Asn Ala Arg
 145 150 155

<210> 7689
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 7689
 Ile Thr Ser Ile Ser Ile Thr Ile Ser Ile Pro Lys Lys Leu Ser Ser
 1 5 10 15
 Ile Thr Pro Tyr Ile Pro Asn Ser Arg Pro Lys Pro Lys Pro Pro Lys
 20 25 30
 Lys Asn Val Ile Thr Ile Ser Lys Arg Leu Thr Ala Val Asn Asp Ser
 35 40 45
 Ile Asp Trp Thr Val Leu Phe Ile Ala Gln Leu Leu Val Met Val Gln
 50 55 60
 Gln Gly Thr Ala Cys Arg Tyr Leu Ala Leu Leu Val Ile Leu Leu Leu
 65 70 75 80
 Ile Phe Asn Phe His Ile Ile Ile Phe Val Met Leu Ala Val Ser Lys
 85 90 95
 His Cys Pro Lys Val Lys Ile Pro Thr Lys
 100 105

<210> 7690
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7690
 Asp Asn Thr Met Pro Tyr Ile Thr Ile Glu Gly Gly Ser Leu Thr Arg
 1 5 10 15
 Glu Gln Lys Ser Glu Leu Ile Arg Lys Val Thr Glu Val Ala Ser Glu
 20 25 30
 Val Met Gln Ile Pro Met Glu Phe Leu Cys Thr Val Lys Glu Leu
 35 40 45
 Pro Asp Glu Asn Ile Gly Ile Gly Gly Arg Thr Ile Asp Leu Ile Lys
 50 55 60

<210> 7691
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 7691
 Gln Met Lys Ile Met Glu Ile Lys Tyr Ile Phe Cys Ile Val Phe Cys
 1 5 10 15
 Phe Trp Ala Met Lys Thr Thr Met Ala Gln Ser Asp Asn Asn Leu Phe
 20 25 30
 Ala Leu Glu Lys Gln Leu Cys Phe Ile Gln Asp Thr Leu Ser Ile Leu
 35 40 45
 Arg Gln Asn Tyr Pro Tyr Thr Asp Asp Asn Tyr Cys Asp Ser Leu Gln
 50 55 60
 His Arg Phe Ser Ile Leu Leu Glu Glu Leu Cys Ala Val Asp Lys Glu
 65 70 75 80
 Met Lys Tyr Asp Phe Ile Glu Leu Arg Lys Lys Glu Arg Gln Phe Thr
 85 90 95
 Met Ala Val Ser Val Asp Glu Asp Met Arg Val Phe Ser Arg Asn Thr

4016 4017 4018 4019 4020 4021 4022 4023 4024 4025 4026 4027 4028 4029 4030 4031 4032 4033 4034 4035 4036 4037 4038 4039 4040 4041 4042 4043 4044 4045 4046 4047 4048 4049 4050 4051 4052 4053 4054 4055 4056 4057 4058 4059 4060 4061 4062 4063 4064 4065 4066 4067 4068 4069 4070 4071 4072 4073 4074 4075 4076 4077 4078 4079 4080 4081 4082 4083 4084 4085 4086 4087 4088 4089 4090 4091 4092 4093 4094 4095 4096 4097 4098 4099 4100


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<210> 7692
<211> 65
<212> PRT
<213> B.fragilis
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<210> 7693
<211> 112
<212> PRT
<213> B.fragilis
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<400> 7693															
Arg	Gln	Ser	Val	Leu	Pro	Arg	Asn	Lys	His	Leu	Phe	Ile	Arg	Ile	Met
1				5					10					15	
Lys	Ala	Lys	Asn	Ser	Glu	Lys	Ile	Ile	Arg	Gly	Tyr	Leu	Glu	Phe	Ala
			20					25					30		
Gly	Gly	Leu	Leu	Ile	Ser	Thr	Ala	Leu	Ser	Met	Ala	Leu	Leu	Thr	Gly
		35					40					45			
Phe	Ile	His	Thr	Asn	Gly	Ser	Glu	Tyr	Lys	Leu	Met	Glu	Ser	Lys	Thr

50 55 60
 Gln Glu Tyr Asp Lys Ile Tyr Ala Arg Gln Ile Ala Leu Val Asp Lys
 65 70 75 80
 Val Asp Ser Leu Tyr Asn Tyr Leu Val Leu Met Val Phe Thr Thr Gly
 85 90 95
 Leu Glu Arg Ala Ala Ala Ile Xaa Xaa Ser Xaa Ser Ile Xaa Xaa Pro
 100 105 110

<210> 7694
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7694
 Phe Val Arg Phe Arg Ile Val Gly Arg Thr Ile Glu Phe Gly Arg Asn
 1 5 10 15
 Ser Val His Gln Gln Ile Gly Tyr Ala Lys Cys Gln Arg Asn Glu Gln
 20 25 30
 Asp Pro Val Asp Gln Ala Gln Met Ser Ile Ile Ser Leu Asn Val Gly
 35 40 45
 Tyr Gly Ser Ile Tyr Leu Cys Lys Ser Val Gln Leu Trp Phe Thr Thr
 50 55 60
 Asp Tyr Thr Glu Asp His Phe Gly Arg Val Leu Gln Asn Pro Ile Glu
 65 70 75 80
 Ser Gln Arg Ile Pro Gln Asp Phe Thr Phe Ser Phe Met Asp Ile Pro
 85 90 95
 Gln Glu Asn Asp Ser Ser Leu Cys
 100

<210> 7695
 <211> 1248
 <212> PRT
 <213> B.fragilis

<400> 7695
 Lys Asn Gln Val Gln Asn Pro Lys Val Met Thr Ser Leu Lys His Gln
 1 5 10 15
 Leu Phe Ser Gly Val Phe Tyr Thr Ala Leu Ala Lys Tyr Ser Gly Ile
 20 25 30
 Gly Val Ser Leu Val Val Ala Gly Val Leu Ala Arg Leu Ile Ser Pro
 35 40 45
 Asp Asp Phe Gly Val Met Ala Val Ala Thr Val Ile Ile Ala Phe Phe
 50 55 60
 Asn Leu Phe Thr Asp Val Gly Leu Ser Pro Ala Ile Ile Gln His Lys
 65 70 75 80
 Thr Leu Thr Gly Glu Asn Leu Ser Gly Leu Phe Ser Phe Thr Val Trp
 85 90 95
 Thr Gly Ile Gly Leu Ala Leu Leu Phe Ala Ala Ala Ser Trp Pro Ile
 100 105 110
 Ala Ala Tyr Tyr Asp Arg Glu Ile Leu Arg Pro Leu Cys Gln Leu Leu
 115 120 125
 Ala Val Asn Leu Phe Phe Ala Ser Ala Thr Ile Val Pro Asn Ala Leu
 130 135 140
 Phe Tyr Arg Asn Lys Glu Phe Lys Phe Ile Ala Leu Arg Ser Phe Val
 145 150 155 160
 Ile Gln Ile Ala Thr Gly Thr Ala Ala Val Val Ala Ala Leu Cys Gly
 165 170 175
 Ala Gly Leu Tyr Ala Leu Ile Ile Gly Pro Ile Leu Ser Gly Ile Leu
 180 185 190

660	665	670
Pro Gln Lys Ile Thr Arg Asn Asp Thr Ser Arg Glu Leu His Leu Ile		
675	680	685
Gly Val Ala Glu Val His Tyr Trp His Gly Phe Asp Arg Ile Ile Lys		
690	695	700
Gly Met Ala Asp Tyr Tyr Ala Thr His Pro Ser Tyr Lys Val Tyr Phe		
705	710	715
His Ile Val Gly Ala Leu Thr Gly Glu Arg Glu Arg Arg Glu Ile Leu		
725	730	735
Pro Val Ile Ala Gln Tyr Lys Leu Glu Pro Phe Val Ile Leu His Gly		
740	745	750
Gln Gln His Gly Glu Gln Leu Asp Lys Ile Phe Glu Gln Ser Asp Phe		
755	760	765
Gly Ile Gly Ser Leu Ala Arg His Arg Ser Gly Ile Thr Thr Ile Lys		
770	775	780
Thr Leu Lys Asn Arg Glu Tyr Ala Ala Arg Gly Leu Pro Phe Ile Tyr		
785	790	795
Ser Glu Thr Asp Thr Asp Phe Asp Asp Lys Pro Tyr Val Leu Lys Ala		
805	810	815
Pro Ala Asn Glu Thr Pro Val Arg Ile Gln Ala Ile Val Asp Phe Tyr		
820	825	830
Gln Thr Gln Thr Trp Asp Pro Ala Gly Ile Arg Gln Ser Ile Ser His		
835	840	845
Leu Ser Trp His Ala Gln Met Gln Lys Val Ile Gly Lys Tyr Gln Val		
850	855	860
Thr Ser Glu Lys Lys Leu Lys Ile Ala Tyr Cys Ile Pro Ser Ile His		
865	870	875
Cys Pro Gly Gly Met Glu Arg Val Ile Ser Leu Lys Val Asn Tyr Phe		
885	890	895
Thr Lys Lys Phe Gly Tyr Asp Ile His Leu Ile Leu Thr Asp Gly Lys		
900	905	910
Asp Lys Ala Pro Tyr Tyr Pro Leu His Pro Ser Ile Thr Leu His Gln		
915	920	925
Leu Asp Ile Asn Tyr Asp Glu Met Asp Gly Met Pro Val Leu Arg His		
930	935	940
Ile Thr Arg Tyr Val Lys Lys Gln Lys Leu Phe Lys Lys Arg Leu Asp		
945	950	955
Ala Cys Leu Asn Glu Leu Lys Pro Asp Ile Thr Ile Ser Thr Leu Arg		
965	970	975
Arg Asp Ile Asn Ile Ile Asn Asn Met Thr Asp Gly Ser Ile Lys Leu		
980	985	990
Gly Glu Ile His Phe Asn Lys Ser Asn Tyr Arg Glu Leu Ser Asp Lys		
995	1000	1005
Pro Leu Pro Ala Phe Leu Lys Lys Trp Ile Arg Ser Tyr Trp Met Lys		
1010	1015	1020
Gln Leu Ile Arg Lys Leu Arg Lys Leu Lys Arg Phe Ile Val Leu Ser		
1025	1030	1035
Tyr Glu Asp Ala Ala Glu Trp Thr Glu Leu Asn Asn Val Thr Val Ile		
1045	1050	1055
His Asn Pro Leu Pro Phe Phe Pro Asp Arg Gln Ser Asp Gly Ser Arg		
1060	1065	1070
Lys Gln Val Ile Ala Ala Gly Arg Tyr Val Pro Gln Lys Gly Phe Asp		
1075	1080	1085
Met Leu Ile Lys Ala Trp Lys Ile Val Ser Glu Gln His Pro Asp Trp		
1090	1095	1100
Thr Leu Arg Ile Tyr Gly Asp Gly Phe Arg Glu Glu Leu Gln Lys Leu		
1105	1110	1115
Ile Asp Gly Leu Gly Ile Ser Arg Ser Cys Ile Leu Glu His Thr Val		
1125	1130	1135

Ser Asn Ile Val Asp Lys Tyr Cys Glu Ser Ser Ile Phe Ala Leu Ser
 1140 1145 1150
 Ser Arg Tyr Glu Gly Phe Gly Met Val Leu Val Glu Ala Met Val Cys
 1155 1160 1165
 Gly Val Pro Pro Val Ser Phe Ala Cys Pro Cys Gly Pro Arg Asp Ile
 1170 1175 1180
 Ile Asp Asp Gly Asn Asp Gly Leu Leu Val Pro Lys Glu Asn Ile Asn
 1185 1190 1195 1200
 Lys Leu Ala Glu Lys Ile Gly Tyr Leu Ile Ser His Glu Asn Ile Arg
 1205 1210 1215
 Lys Glu Met Gly Gln Arg Ala Arg Ile His Val Glu Arg Phe Lys Ile
 1220 1225 1230
 Asp His Ile Ala Ser Gln Trp Lys Glu Leu Phe Asn Ser Leu Ile Ser
 1235 1240 1245

<210> 7696
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 7696
 Tyr Glu Glu Val Asn Asn Ala Ile Glu Lys Ile Gly Gln Glu Met Tyr
 1 5 10 15
 Arg Glu Thr Glu Phe Leu Glu Lys Ala Met Ala Ile Tyr Leu Leu Asp
 20 25 30
 Asn Thr Ser Phe Gly Glu His Gly Phe Asp Leu Ala Asn Pro Lys Leu
 35 40 45
 Ile Glu Glu Ala Ile Asn Asp Gly Arg Ile Lys Pro Phe Pro Arg Ala
 50 55 60
 Thr Arg Lys Thr Lys Asp
 65 70

<210> 7697
 <211> 488
 <212> PRT
 <213> B.fragilis

<400> 7697
 Val Asn Gly Val Ile Leu Met Thr Cys Lys Tyr Asp Arg Ile Met Asn
 1 5 10 15
 Ile Lys Thr Leu Leu Ile Met Gly Leu Val Asn Met Phe Gly Leu Gly
 20 25 30
 Gly Cys Ala Asn Ala Glu Ile Gly Lys Gln Val Leu Asn Leu Asp Asp
 35 40 45
 Leu Asp Tyr Gly Ile Asp Val Val Arg Tyr Tyr Ala Pro Ala Met Glu
 50 55 60
 Glu Ser Lys Asp Thr Val Glu Glu His Tyr Tyr Val Asn Arg Asp Thr
 65 70 75 80
 Val Lys Phe Tyr Asp Thr Glu Thr Asp Lys Leu Leu Pro Val Leu Ile
 85 90 95
 Ala Tyr Arg His Leu Ala Gly Val Val Lys Glu Gln Ala Thr Phe Cys
 100 105 110
 Gly His Ser Phe Thr Asn Val Ser Met Ala Thr Met Glu Asp Gly His
 115 120 125
 Leu Ile Met Val Gln Cys Glu Val Glu Met Gln Pro Ala Asp Leu Ser
 130 135 140
 Gln Leu Leu Ala Ala Ala Val Lys Lys Tyr Gly Glu Pro Tyr Thr Glu
 145 150 155 160
 Glu Lys Asp Gln Phe Gly Lys Pro Asp Pro Lys Trp Arg Trp Glu Thr

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165      170      175
Lys Asp Glu Tyr Ile Gln Leu Asn Ala Lys Asn Met Ser Gly Lys Glu
180      185      190
Thr Leu Asn Ile Glu Thr Thr Asp Asn Val Glu Glu Pro Val Lys Ile
195      200      205
Gly Asn Pro Lys Pro Tyr Val Lys Val Ala Leu Tyr Arg Trp Ala Lys
210      215      220
Lys Tyr His Asp Leu Val Leu Ala Glu Glu Pro Leu Tyr Gly Phe Ser
225      230      235      240
Pro Leu Asn Lys Glu Ala Glu Thr Arg Trp Asp Asn Asp His Ile Lys
245      250      255
Ser Ala Lys Phe Tyr Thr Pro Glu Glu Val Lys Pro Phe Phe Ile Thr
260      265      270
Ala His Tyr Leu Asp Ser Leu Glu His Ser Gly Asp Val Trp Gly Lys
275      280      285
Ile Glu Ala Ser Phe Tyr Tyr Arg Ile Pro Asn Ser Lys Val Thr Asp
290      295      300
Glu Thr Gly Ile Thr Asp Ser Val Lys Ile Asn Gln Glu Gly Cys Leu
305      310      315      320
Pro Cys Trp Ser Phe Gly Gly Leu Asp Arg Asp Phe Lys Asn Gly Leu
325      330      335
Ser Asn Ala Ala Tyr Ile Ala Arg Gln Met Gln Lys Gly Val Lys Phe
340      345      350
Thr Glu Ile Met Glu Asp Lys Glu Leu Cys Pro Asp Val Tyr Tyr Tyr
355      360      365
Gly Glu Ala Glu Trp Trp Lys Lys Lys Lys Val Phe Gly Ile Val Arg
370      375      380
Phe Glu Arg Asp Glu Lys Asp Asn Met Val Leu Arg Glu Pro Glu Thr
385      390      395      400
Asp Arg Asp Asp Ile Arg Arg Arg Val Leu Ile Ile Asn Asp Asn Ile
405      410      415
Lys Glu Glu Leu Arg Lys Ser Gly Leu Asp Leu Glu His Thr Thr Ala
420      425      430
Arg Leu Met Asn Ala Pro Gly Asp Ile Thr Pro Leu Ala Phe Phe Thr
435      440      445
Asp Gly Lys Leu Asp Met Phe Met Cys Ile Asp Glu Gly Arg Tyr Ser
450      455      460
Phe Ser Thr Pro Asn His Glu Trp Glu Ser Asn Lys Ile Tyr Arg Leu
465      470      475      480
Tyr Asp Tyr Leu Ser Asp Ile Lys
485

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<210> 7698

<211> 119

<212> PRT

<213> B.fragilis

<400> 7698

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Leu Lys Ser Phe Pro Glu Phe Ser Phe Tyr Ser Ala Ala Val Val Pro
1      5      10      15
Gln Arg Val Ile Val Tyr His Pro Ala Phe Val Ser Ile Phe Leu Val
20      25      30
Gln Ile Thr Cys Val His Val His Ser Ala Leu Phe Gln Arg Phe Tyr
35      40      45
Leu Ile Ala Asp Phe Leu Ala Asp Ala Val Arg Phe Phe Lys Ser Val
50      55      60
Glu Tyr Lys Lys Gln Cys Phe His Arg Leu Phe Leu Phe Met Met Leu
65      70      75      80
Phe Ala Leu Ala Ser Asp Val Val Phe Thr Gly Gln Leu Tyr Ile Ala

```

85 90 95
 Pro Lys Tyr Thr Glu Lys Tyr Asn Ala Phe Tyr Asn Gln Gly Gln Lys
 100 105 110
 Asn Val Ala Ser Phe Cys His
 115

<210> 7699
 <211> 130
 <212> PRT
 <213> B.fragilis

<400> 7699
 Asn Met Ala Phe Arg Ala Thr Leu Ser Phe Ala Gly Lys Glu Phe Asp
 1 5 10 15
 Val Leu Asp Cys Thr Tyr Ser Leu Lys Arg Asp Val Asp Ser Lys Gly
 20 25 30
 Arg Pro Ser Ser Asn Ile Tyr Gly Gly Gln Ile Arg Leu His Val Glu
 35 40 45
 Ser Thr Asp Asp Thr Ser Ile Leu Glu Asn Met Thr Asn Gln Phe Lys
 50 55 60
 Pro His Ser Gly Ser Ile Val Phe Lys Lys Gly Asp Glu Glu Ala Lys
 65 70 75 80
 Met Lys Glu Leu Thr Trp Glu Asn Gly Tyr Ile Thr Glu Phe Thr Glu
 85 90 95
 Asn Ile Asp Ile Val Gly Ser Gln Pro Met Thr Ile Thr Phe Val Val
 100 105 110
 Ser Ala Gln Val Ile Lys Ile Gly Gly Ala Gln Phe Glu Gln Asn Trp
 115 120 125
 Pro Lys
 130

<210> 7700
 <211> 611
 <212> PRT
 <213> B.fragilis

<400> 7700
 Asn Ile Lys Leu Lys Arg Met Ala Asn Leu Phe Thr Lys Glu Ser Ile
 1 5 10 15
 Lys Ala Arg Met Phe Lys Gln Ala Ala Thr Leu Tyr Asp Ile Arg Asn
 20 25 30
 Ile Asp Gly Ile Asp Pro Leu Ile Arg Leu Leu Ile Glu Ala Leu Ser
 35 40 45
 Gly Glu Ile Phe Lys Leu Ser Gly Asp Met His Ala Ile Glu Ser Arg
 50 55 60
 Leu Leu Glu Lys Val Ala Ser Ala Leu Thr Pro His Thr Ala Leu Val
 65 70 75 80
 Ala Lys Pro Ala His Ala Ile Ala Ala Arg Pro Tyr Thr Pro Gln
 85 90 95
 Ala Thr Val Ser Pro Thr Asp Leu Phe Ser Tyr Lys Ser Thr Glu Ile
 100 105 110
 Val Lys Lys Tyr Lys Met Lys Asn Leu Phe Phe Thr Pro Leu His Glu
 115 120 125
 Thr Arg Ile Ile Asn Ala Glu Lys Phe Leu Val Thr Ala Asp Glu
 130 135 140
 Phe Cys Thr Ile Thr Pro Glu Gly Glu Arg Asp Ala Thr Ala Arg Phe
 145 150 155 160
 Arg Ser Asp Val Pro Val Met Gly Arg Lys Ile Ser Ile Gly Met Lys
 165 170 175

```

Ile Gly Asn Asn Val Thr Thr Leu Asn Asp Leu Pro Leu Tyr Ile Asp
      180      185      190
Ile Pro Leu Val Ala Asp Lys Ser Ser Tyr Leu Lys Leu Leu Pro Tyr
      195      200      205
Cys His Cys Thr Ile Ala Gly Ile Pro Val Glu Ile Lys Gly Gly Ile
      210      215      220
Glu Tyr Ala Pro Thr Arg Ser Val Ser Glu Lys Tyr Asp Leu Gly Arg
225      230      235      240
Leu Ile Thr Glu Glu Ile Thr Ser Lys Tyr Ala Ser His Tyr Leu Thr
      245      250      255
Leu Lys Ala His Gly Leu Lys Val Arg Asp Leu Ser Arg Ser Arg Val
      260      265      270
Pro Glu Glu Ile Ser Phe Leu Leu Pro Ser Asp Phe Ile Ala Glu Cys
      275      280      285
Asp Ala Asp Thr Val Trp Ile Asp Ile Glu Phe Pro Thr Ala Phe Ser
290      295      300
Lys Glu Ile Leu Glu Gln Ile Lys Val Gln Met Asn Thr Phe Ile Val
305      310      315      320
Val Asn Lys Tyr Pro Ala Lys Ile Thr Arg Lys Val Asp Ser Val Ser
      325      330      335
Ala Ile Leu Pro Leu Glu Lys Thr Glu Phe Glu Tyr Phe Leu Phe Val
      340      345      350
Asp Ser Ile Thr Asp Asn His Gly Asp Arg Leu Arg Glu Ile Ser Gly
      355      360      365
Thr Gln Asp Glu Gly Arg Ala Gly Cys Tyr Ser Val Arg Arg Gly Gly
370      375      380
Cys Glu Arg Phe Asn Ala Met Asp Ala Lys Asp Phe Leu Asn Arg Leu
385      390      395      400
Thr Asp Leu Leu Tyr Asp Glu Ser Met Ala Phe Ser Ser Thr Asp Lys
      405      410      415
Asp Gly Met Lys Glu Val Ile Glu Gln Ile Glu Glu Arg Val Ser Gln
      420      425      430
Leu Gly Asp Lys Asn Lys Asp Gly Val Gly Gly Gln Glu Met Leu Ser
      435      440      445
Tyr Val Val Ile Asp Gln Arg Tyr Asp Lys Asp Thr Arg Leu Thr Val
      450      455      460
Asp Tyr Thr Leu Thr Asn Gly Glu Phe Ala Asn Asp Ile Tyr Ala Gly
465      470      475      480
Glu Pro Leu Asn Asp Cys Ala Asn Pro Asp Ile Asp Lys Asp Thr Leu
      485      490      495
Arg Phe Val Thr Phe Ala His Gly Gly Glu Pro Ser Pro Ser Val Arg
      500      505      510
Arg Arg Met Asp Met Tyr Pro Ile Met Leu Leu Ser His Gly Ser Ile
      515      520      525
Tyr Thr Lys Glu Asp Ile Arg Asn Phe Cys Met Ala Arg Tyr Gly Asp
      530      535      540
Ser Ile Arg Ser Val Glu Val Lys Leu Gly Tyr Ala Ala Gly Lys Lys
545      550      555      560
Glu Ser Glu Gly Phe Ile Arg Thr Leu Asp Val Tyr Leu Arg Leu Ser
      565      570      575
Glu Gly Met Gln Gly Leu Asp Arg Asp Glu Phe Val Val Asp Leu Asp
      580      585      590
Ser Glu Leu Arg Arg Leu Ser Pro Glu Thr Tyr Asn Tyr Arg Val Phe
      595      600      605
Ile Asn Ser
      610

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<210> 7701

<211> 183

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (107)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7701

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Asn Ala Lys Phe Lys Thr Met Gly Lys Lys Ala Val Ser Lys Leu Phe
1          5          10          15
Tyr Cys Thr Ser Ile Ala Leu Thr Phe Val Leu Ala Gly Ile Thr Ile
          20          25          30
Ala Gly Ala Phe Ala Gly His Ile Pro Pro Glu His Ser Thr Leu Met
          35          40          45
Pro Phe Ile Gly Leu Ala Leu Ser Gly Leu Leu Leu Ile Asn Leu Val
          50          55          60
Ala Ala Ile Tyr Trp Gly Ile Arg Arg Arg Phe Trp Ile Ile Ile Pro
65          70          75          80
Leu Ile Ala Ile Ala Ala Asn Trp Gln Tyr Leu Gly Arg Ile Phe Gln
          85          90          95
Leu Leu Leu Arg Ser Glu Glu Lys Glu Ala Xaa Thr Leu Lys Ile Ala
          100          105          110
Thr Tyr Lys Val Asp Ser Phe Gly Thr Lys Gln Ser Gly Tyr Ser Cys
          115          120          125
Lys Glu Ile Ala Ala Tyr Met Lys Glu His Arg Val Asp Ile Ile Cys
          130          135          140
Phe Gln Glu Phe Val Gly Gln Pro Val Leu Leu Leu Gln Thr Ala Tyr
145          150          155          160
Gly Thr His Leu Gln Thr Gly Ser Met Pro Ser Phe Arg Lys Leu Arg
          165          170          175
Thr Ala His Leu Ser Cys Arg
          180

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<210> 7702

<211> 331

<212> PRT

<213> B.fragilis

<400> 7702

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Glu Leu Asn Ser Lys Ile Met Asn Ile Arg Asn Leu Phe Phe Leu Gly
1          5          10          15
Ser Ile Leu Leu Leu Leu Ser Cys Lys Asn Ser Lys Gln Gln Glu Gly
          20          25          30
Tyr Asn Ser Ile Asn Ile Ile Lys Tyr Ile Asn Ile Tyr Asn Glu Asn
          35          40          45
Asn Arg Ile Leu Thr Ala Gln Gly Thr Glu Tyr Asp Tyr Leu Tyr Phe
          50          55          60
Gly Asp Asn Lys Asp Lys Glu Ile Leu Ala Asn Val Asn Asn Phe Thr
65          70          75          80
Lys Thr Tyr Ser Tyr Asp Asn Asp Ser Ser Cys Tyr Thr Val Glu Glu
          85          90          95
Pro Leu Ser Glu Ser Leu Leu Lys Thr Met Arg Tyr Thr Glu Asn Thr
          100          105          110
Ile Glu Glu Leu Val Leu Glu Asn Lys Asp Thr Phe Ser Tyr Thr
          115          120          125
Phe Ser Thr Tyr Tyr Asp Lys Asn Lys Pro Lys Tyr Asn Lys Ser Ile
130          135          140
Ile Ile Leu Gly Asp Glu Pro Ser Ser Asp Ser Arg Tyr Glu Glu Tyr

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145 150 155 160
 Tyr Tyr Tyr Asp Asn Asn Gly Asn Asn Thr Lys Lys Ile His His Asp
 165 170 175
 Leu Asn Thr Gly Gln Arg Glu Glu Thr Tyr Lys Phe Asn Asp Thr Asp
 180 185 190
 Tyr Lys Glu Ala Val Asn Leu Val Pro Ser Ser Asp Tyr Lys Gln Asn
 195 200 205
 Ile Glu Cys Ser Leu Lys Gln Thr Val Asn Asp Thr Leu Ile Thr Arg
 210 215 220
 Ile Thr Leu Asn Gly Val Leu Asn Arg Val Met Lys Glu Tyr Ile Asp
 225 230 235 240
 Gly Lys Lys Lys Ile Lys Glu Glu Leu Asp Asn Asp Met Thr Leu Val
 245 250 255
 Asn Lys Lys Thr Glu Tyr Glu Glu Asn Gly Leu Lys Val Asn Val Asn
 260 265 270
 His Thr Ile Arg Ser Thr Gly Tyr Ser Thr Asp Ser Ile Tyr Tyr Lys
 275 280 285
 Gly Asn Lys Lys Val Lys His Ile Tyr Asn Ser Asp Tyr Asn Gly Thr
 290 295 300
 Ile Thr Leu Glu Ile Ser Glu Tyr Asp Glu Gln Gly Asn Ile Val Lys
 305 310 315 320
 Lys Thr Lys Lys Leu Arg Trp Pro Ser Asp Lys
 325 330

<210> 7703

<211> 100

<212> PRT

<213> B.fragilis

<400> 7703

Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30
 Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Ser
 100

<210> 7704

<211> 63

<212> PRT

<213> B.fragilis

<400> 7704

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
 1 5 10 15
 Phe Gly Asn Leu Arg Ile Lys Gly His Leu His Leu Pro Glu Ala Tyr
 20 25 30
 Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala
 35 40 45
 Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Asp His Phe Leu
 50 55 60

<210> 7705
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7705
 Cys Arg Gly Arg Gln Phe Asn Ser Ala Trp Asp Tyr Gln Gln Ile Asp
 1 5 10 15
 Ile Leu Ser Cys Met Ile Gly Gly Leu Ala Gln Leu Ala Arg Ala Ser
 20 25 30
 Ala Leu His Ala Glu Gly Gln Arg Phe Glu Ser Val Ile Leu His Ser
 35 40 45
 Asp Thr Ala Thr Glu Gln Ala Cys Val Leu Ser Asn Asp Leu
 50 55 60

<210> 7706
 <211> 667
 <212> PRT
 <213> B.fragilis

<400> 7706
 Ser Leu Ile Pro Leu Ile Met Lys Met Thr Leu Ser Asn Gln Leu Pro
 1 5 10 15
 Glu Tyr Pro Val Phe Ala Glu Gly Ile Arg Arg Ala Pro Asp Arg Gly
 20 25 30
 Tyr Thr Leu Ser Pro Ala Gln Thr Val Thr Ala Leu Lys Asn Ala Leu
 35 40 45
 Arg Tyr Ile Pro Val Glu Leu His Arg Lys Leu Ala Pro Glu Phe Leu
 50 55 60
 Glu Glu Leu Arg Thr Arg Gly Arg Ile Tyr Gly Tyr Arg Phe Arg Pro
 65 70 75 80
 Ala Gly Asp Leu Lys Ala Lys Pro Val Asp Glu Tyr Gln Gly Asn Cys
 85 90 95
 Ile Glu Gly Lys Ala Phe Gln Val Met Ile Asp Asn Asn Leu Cys Phe
 100 105 110
 Asp Ile Ala Leu Tyr Pro Tyr Glu Leu Val Thr Tyr Gly Glu Thr Gly
 115 120 125
 Gln Val Cys Gln Asn Trp Met Gln Tyr Arg Leu Ile Lys Gln Tyr Leu
 130 135 140
 Glu Leu Leu Thr Arg Glu Gln Thr Leu Val Ile Glu Ser Gly His Pro
 145 150 155 160
 Leu Gly Leu Phe His Ser Arg Pro Asp Ala Pro Arg Val Ile Ile Thr
 165 170 175
 Asn Ser Met Met Val Gly Met Phe Asp Asn Gln His Asp Trp His Glu
 180 185 190
 Ala Ala Gln Met Gly Val Ala Asn Tyr Gly Gln Met Thr Ala Gly Gly
 195 200 205
 Trp Met Tyr Ile Gly Pro Gln Gly Ile Val His Gly Thr Phe Asn Thr
 210 215 220
 Leu Leu Asn Ala Gly Arg Leu Lys Leu Gly Ile Pro Gln Asp Lys Asn
 225 230 235 240
 Leu Ser Gly His Leu Phe Val Ser Ser Gly Leu Gly Gly Met Ser Gly
 245 250 255
 Ala Gln Pro Lys Ala Ala Glu Ile Ala Gly Ala Ala Ser Ile Ile Ala
 260 265 270
 Glu Val Asp Arg Ser Arg Ile Glu Thr Arg Tyr Lys Gln Gly Trp Val
 275 280 285
 Glu His Val Thr Thr Asp Leu His Thr Asp Phe Arg Met Ala Leu Ser

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290          295          300
Ala Ala Glu Arg His Glu Ser Cys Ser Val Ala Tyr His Gly Asn Val
305          310          315          320
Val Asp Leu Leu Glu Tyr Ala Val Gln Glu Asp Ile Pro Ile Glu Leu
          325          330          335
Leu Ser Asp Gln Thr Ser Cys His Ala Val Tyr Glu Gly Gly Tyr Cys
          340          345          350
Pro Ala Gly Val Thr Phe Lys Glu Arg Thr Arg Leu Leu His Glu Ser
          355          360          365
Pro Glu Ala Phe Arg Arg Leu Val Asp Glu Ser Leu His Arg His Phe
          370          375          380
Ala Val Ile Lys Lys Leu Val Ser Arg Gly Thr Tyr Phe Phe Asp Tyr
385          390          395          400
Gly Asn Ser Phe Met Lys Ala Val Tyr Asp Ala Gly Val Lys Glu Ile
          405          410          415
Ser Arg Asn Gly Thr Asp Glu Lys Asp Gly Phe Ile Trp Pro Ser Tyr
          420          425          430
Val Glu Asp Ile Met Gly Pro Glu Leu Phe Asp Tyr Gly Tyr Gly Pro
          435          440          445
Phe Arg Trp Val Cys Leu Ser Gly Asn Pro Glu Asp Leu Ala Arg Thr
          450          455          460
Asp Cys Ala Ala Met Glu Cys Ile Asp Val Lys Arg Arg Gly Gln Asp
465          470          475          480
Leu Asp Asn Tyr Asn Trp Ile Arg Asp Ala Gly Lys Asn Arg Leu Val
          485          490          495
Val Gly Thr Gln Ala Arg Ile Leu Tyr Gln Asp Ala Val Gly Arg Leu
          500          505          510
Lys Ile Ala Leu Arg Phe Asn Gln Met Val Arg Asp Gly Glu Val Gly
          515          520          525
Pro Ile Met Leu Gly Arg Asp His His Asp Val Ser Gly Thr Asp Ser
          530          535          540
Pro Phe Arg Glu Thr Ser Asn Ile Lys Asp Gly Ser Asn Val Met Ala
545          550          555          560
Asp Met Ala Val Gln Cys Phe Ala Gly Asn Cys Ala Arg Gly Met Ser
          565          570          575
Leu Val Ala Leu His Asn Gly Gly Gly Val Gly Ile Gly Lys Ala Ile
          580          585          590
Asn Gly Gly Phe Gly Met Val Cys Asp Gly Ser Leu Arg Val Asp Glu
          595          600          605
Ile Leu Arg Ser Ser Met Leu Trp Asp Val Met Gly Gly Val Ala Arg
          610          615          620
Arg Ser Trp Ala Arg Asn Glu His Ala Met Glu Thr Ser Glu Ala Phe
625          630          635          640
Asn Leu Ser His Gly Asp Ala Tyr His Ile Thr Leu Pro Tyr Leu Ala
          645          650          655
Asp Glu Glu Leu Ile Lys Arg Ile Val Ala Glu
          660          665

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<210> 7707

<211> 81

<212> PRT

<213> B.fragilis

<400> 7707

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Val Glu Leu Phe Val Asn Gln Gln Val Asp Asn Gly Lys Ile Asp Ile
1          5          10          15
Ile Pro Glu Tyr Ala Leu Leu Asn Ala His Leu Lys Lys Phe Asp Arg
          20          25          30
Thr Val Arg Val Pro Leu Pro Ile Val Leu Gln Gln Thr Val Tyr Phe

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35 40 45
 Arg Ile Leu Leu Tyr Ile Phe Lys Lys Thr Leu Val Ser Pro Met Glu
 50 55 60
 Cys Leu Asn Ala Pro Leu Ile Thr His Lys Asn Asp Phe Lys Asn Ile
 65 70 75 80
 Leu

<210> 7708
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 7708
 Arg Ile Met Leu Ala Glu Leu Thr Val Lys Glu Phe Leu Asp Lys Val
 1 5 10 15
 Ala Gly Ser Asp Pro Val Pro Gly Gly Gly Ser Val Ala Ala Leu Asn
 20 25 30
 Gly Ala Val Ala Ser Ala Leu Thr Ala Met Val Ala Gly Leu Thr Ile
 35 40 45
 Gly Lys Lys Gly Tyr Glu Glu His Glu Glu Leu Met Lys His Ile Ser
 50 55 60
 Arg Leu Ser Ile Arg Gln Gln Glu Leu Phe Val Glu Tyr Ile Asp Arg
 65 70 75 80
 Asp Ser Glu Ala Tyr Asp His Val Phe Gly Cys Phe Lys Leu Pro Lys
 85 90 95
 Ser Thr Asp Glu Glu Lys Ala Ala Arg Ser Ala Ala Ile Gln Glu Ala
 100 105 110
 Thr Arg Phe Ala Ala Leu Val Pro Met Gln Val Ala Arg Asn Ala Cys
 115 120 125
 Glu Leu Met Glu Ile Ile Ala Asp Val Ala Arg Leu Gly Asn Gln Asn
 130 135 140
 Ala Ile Thr Asp Ala Cys Val Ala Met Met Ala Ala Arg Ser Ala Val
 145 150 155 160
 Leu Gly Ala Leu Leu Asn Val Arg Ile Asn Leu Gly Ser Leu Lys Asp
 165 170 175
 Lys Thr Phe Val Asp Glu Leu Lys Arg Glu Ala Asp His Leu Glu Gln
 180 185 190
 Leu Ala Cys Met Arg Glu Lys Glu Leu Leu Glu Val Val Asn Gln Glu
 195 200 205
 Leu Asn Gln
 210

<210> 7709
 <211> 327
 <212> PRT
 <213> B.fragilis

<400> 7709
 Ser Cys Gln Pro Arg Thr Glu Pro Met Asn Asn Val Tyr Tyr Val Gly
 1 5 10 15
 Ser Gly Glu Leu Thr Phe Ser Ile Ile Glu Arg Ile Ile Asn Glu Asn
 20 25 30
 Leu Lys Leu Glu Leu Ala Pro Glu Ala Glu Gln Arg Ile Arg Lys Cys
 35 40 45
 Arg Asp Tyr Leu Asp Arg Lys Ile Ala Ala Ser Thr Glu Pro Leu Tyr
 50 55 60
 Gly Ile Thr Thr Gly Phe Gly Ser Leu Cys Ser Lys Asn Ile Ser Ser
 65 70 75 80

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Asp Glu Leu Asn Thr Leu Gln Glu Asn Leu Val Lys Ser His Ala Cys
      85                      90                      95
Ser Val Gly Glu Leu Arg Pro Val Ile Ile Lys Leu Met Leu Leu
      100                    105                    110
Leu Lys Ala His Ala Leu Ser Leu Gly His Ser Gly Val Gln Val Ile
      115                    120                    125
Thr Val Gln Arg Ile Leu Asp Phe Phe Asn Asn Asp Val Met Pro Ile
      130                    135                    140
Val Tyr Asp Arg Gly Ser Leu Gly Ala Ser Gly Asp Leu Ala Pro Leu
      145                    150                    155                    160
Ala Asn Leu Phe Leu Pro Leu Ile Gly Val Gly Asp Val Tyr Tyr Lys
      165                    170                    175
Gly Lys Lys Arg Glu Ala Ile Ser Val Leu Asp Glu Phe Gly Trp Glu
      180                    185                    190
Pro Val Arg Leu Met Ser Lys Glu Gly Leu Ala Leu Leu Asn Gly Thr
      195                    200                    205
Gln Phe Met Ser Ala Asn Gly Val Phe Ala Leu Leu Lys Ala Trp Arg
      210                    215                    220
Leu Ser Lys Lys Ala Asp Met Ile Ala Ala Leu Ser Leu Glu Ala Phe
      225                    230                    235                    240
Asp Gly Arg Ile Asp Pro Phe Met Glu Cys Ile Gln Gln Ile Arg Pro
      245                    250                    255
His Pro Gly Gln Ile Glu Thr Gly Glu Ile Phe Arg Arg Leu Leu His
      260                    265                    270
Gly Ser Glu Leu Ile Ala Arg Thr Lys Lys His Val Gln Asp Pro Tyr
      275                    280                    285
Phe Phe Trp Leu Asp Ser Ser Gly Ala Trp Gly His Glu Arg Cys His
      290                    295                    300
Pro Gly Arg Leu Phe Arg Phe Gly Asp Arg Asp Asn Ser Lys Cys Gly
      305                    310                    315                    320
His Ser Ala Leu Phe Pro Gly
      325

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<210> 7710

<211> 309

<212> PRT

<213> B.fragilis

<400> 7710

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Ser Val Val Pro Leu Lys Arg Cys Ser Met Asn Trp Asn Lys Ile Val
1      5      10      15
Glu Cys Val Pro Asn Phe Ser Glu Gly Arg Asp Leu Glu Lys Met Asp
      20      25      30
Arg Ile Val Ala Pro Phe Arg Ala Arg Ser Gly Val Lys Leu Leu Asp
      35      40      45
Tyr Ser Asn Asp Glu Asp His Asn Arg Leu Val Val Thr Leu Ile Gly
      50      55      60
Glu Pro Glu Ala Leu Arg Asp Ala Val Ile Glu Ala Ile Gly Val Ala
      65      70      75      80
Val Glu Leu Ile Asp Leu Asn His His Arg Gly Gln His Pro Arg Met
      85      90      95
Gly Ala Val Asp Val Val Pro Phe Ile Pro Ile Lys Asn Val Thr Met
      100     105     110
Asp Glu Ala Val Ser Leu Ser Arg Glu Ile Gly Glu Lys Val Ala Gly
      115     120     125
Leu Tyr His Leu Pro Val Phe Leu Tyr Glu Lys Ser Ala Thr Ala Pro
      130     135     140
His Arg Glu Asn Leu Ala Ala Val Arg Lys Gly Glu Phe Glu Gly Met
      145     150     155     160

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<210> 7713
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 7713
 Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30
 Leu Val Gly Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Ser
 100

<210> 7714
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 7714
 Phe Met Glu Lys Asn Ser Met Lys Gly Glu Arg Pro Met Arg Leu Asn
 1 5 10 15
 Arg Trp Leu Gly Val Leu Ile Leu Leu Leu Ser Gly Val Trp Ser Val
 20 25 30
 Arg Ala Gln Asp Leu Leu Pro Ala Cys Pro Gln Val Asp Lys Gly Thr
 35 40 45
 Lys Ala Cys Lys Pro Met Arg Glu Pro Gly Ser Leu Gly Asp Thr Val
 50 55 60
 Ser Val Lys Ile Val Phe Pro Val Ala Phe Lys Gly Val Gly Arg Asn
 65 70 75 80
 Glu Val Val Asp Ser Leu Gly Ile Leu Ala Pro Val Leu Glu His Leu
 85 90 95
 Arg Leu Val Gln Asn Gly Ser Ser Glu Asp Thr Val Arg Ile Val His
 100 105 110
 Ile Gly Asp Ser His Ile Arg Gly His Ile Phe Pro Arg Thr Thr Gly
 115 120 125
 Ala Arg Leu Thr Glu Thr Phe Gly Ala Ile Ser Tyr Thr Asp Met Gly
 130 135 140
 Val Asn Gly Ala Thr Cys Leu Thr Phe Thr His Pro Asp Arg Ile Ala
 145 150 155 160
 Ala Ile Ala Ala Leu Lys Pro Glu Leu Leu Ile Leu Ser Phe Gly Thr
 165 170 175
 Asn Glu Ser His Asn Arg Lys Tyr Asn Ser Asn Val His Tyr Arg Gln
 180 185 190
 Met Glu Glu Leu Leu Glu Leu Leu Arg Asp Ser Leu Pro Asp Val Pro
 195 200 205
 Ile Leu Met Thr Thr Pro Pro Gly Ser Tyr Glu Ser Phe Arg Gln Arg
 210 215 220
 Arg Arg Arg Arg Thr Tyr Ala Ile Asn Pro Arg Thr Val Thr Ala Val
 225 230 235 240
 Asn Thr Ile His Asp Phe Ala Arg Arg His Lys Leu Val Val Trp Asp
 245 250 255

Met Tyr Asn Val Val Gly Gly Ser Leu Arg Ala Cys Lys Asn Trp Ser
 260 265 270
 Asp Ala Arg Leu Met Arg Pro Asp His Val His Tyr Leu Pro Glu Gly
 275 280 285
 Tyr Thr Leu Gln Gly Glu Leu Leu Tyr Glu Ala Ile Ile Lys Ala Tyr
 290 295 300
 Asn Glu Tyr Val Ser His
 305 310

<210> 7715
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 7715
 Gln Gln Lys Asn Gly Leu Met Ile Glu Asn Ala Lys Glu Asn Ser Gln
 1 5 10 15
 Arg Val Glu Leu Lys Asp Arg Ile Ile Glu Thr Ala Ser Glu Ala Phe
 20 25 30
 Thr Thr His Gly Ile Lys Ser Ile Thr Met Asp Asp Ile Ala Ala Ser
 35 40 45
 Leu Gly Ile Ser Lys Arg Thr Leu Tyr Glu Val Phe Gln Asp Lys Glu
 50 55 60
 Ser Leu Leu Thr Gln Cys Ile Leu Lys Arg Gln Glu Glu Met Asn Ala
 65 70 75 80
 Phe Leu Ala Glu Thr Leu Ala Asn Ser Lys Asn Val Leu Glu Val Ile
 85 90 95
 Leu Val Cys Tyr Gln Arg Ser Ile Glu Thr Phe His Arg Thr Asn Lys
 100 105 110
 Arg Phe Phe Glu Asp Ile Lys Lys Tyr Pro Lys Val His Ser Leu Leu
 115 120 125
 Lys Asn Tyr Arg Glu Arg Asp Ser Asp Ser Thr Ile Glu Phe Phe Lys
 130 135 140
 Met Gly Ile Lys Gln Gly Ile Phe Arg Asp Asp Val Asn Phe Ala Ile
 145 150 155 160
 Val Asn Leu Leu Val His Glu Gln Leu Asp Leu Leu Met Asn Thr Asp
 165 170 175
 Ile Cys Asn Lys Tyr Ser Phe Leu Glu Val Tyr Glu Ala Ile Met Phe
 180 185 190
 Thr Tyr Ile Arg Gly Ile Ser Thr Glu Lys Gly Ala Lys Val Leu Glu
 195 200 205
 Asp Phe Ile Thr Glu Tyr Arg Lys Gln Arg Ile His
 210 215 220

<210> 7716
 <211> 1021
 <212> PRT
 <213> B.fragilis

<400> 7716
 Leu Pro Ile Asp Leu Tyr Pro Asp Ile Asp Thr Asn Thr Ile Met Val
 1 5 10 15
 Met Thr Ala Tyr Pro Gly Ala Ser Ala Ser Asp Ile Glu Asn Asn Val
 20 25 30
 Thr Arg Pro Leu Glu Asn Thr Leu Asn Ala Val Ser Asn Leu Lys His
 35 40 45
 Ile Thr Ser Arg Ser Ser Glu Asn Met Ser Leu Ile Thr Leu Glu Phe
 50 55 60
 Glu Tyr Gly Asn Asp Ile Asp Val Leu Thr Asn Asp Val Arg Asp Lys

65		70		75		80
Leu Asp Met Val Ser Gln Leu Pro Asp Val Glu Asn Pro Ile						
	85		90		95	
Ile Phe Lys Phe Ser Thr Asp Met Ile Pro Ile Val Leu Leu Ser Val						
	100		105		110	
Gln Ala Asn Glu Ser Gln Ser Ala Leu Tyr Lys Ile Leu Asp Asp Arg						
	115		120		125	
Val Val Asn Pro Leu Ala Arg Ile Pro Gly Val Gly Thr Val Ser Ile						
	130		135		140	
Ser Gly Ala Pro Gln Arg Glu Ile Gln Val Tyr Cys Asp Pro Gly Lys						
145		150		155		160
Leu Glu Ala Tyr Asn Leu Thr Ile Glu Thr Ile Ser Ser Ile Ile Gly						
	165		170		175	
Ala Glu Asn Lys Asn Ile Pro Gly Gly Asn Phe Asp Ile Gly Asn Glu						
	180		185		190	
Thr Tyr Ser Leu Arg Val Glu Gly Glu Phe Asp Asp Ser Arg Gln Leu						
	195		200		205	
Glu Asp Val Val Val Gly Ser Tyr Asn Gly Ala Asn Val Tyr Leu Arg						
	210		215		220	
Asp Val Ala Arg Val Val Asp Thr Val Glu Glu Arg Ala Gln Glu Thr						
225		230		235		240
Tyr Asn Asn Gly Val Lys Gly Ala Met Ile Val Val Gln Lys Gln Ser						
	245		250		255	
Gly Ala Asn Ser Val Asp Ile Ser Lys Lys Val Ala Glu Ala Leu Pro						
	260		265		270	
Lys Leu Gln Lys Asn Leu Pro Ser Asp Val Lys Leu Gly Val Ile Val						
	275		280		285	
Asp Thr Ser Asp Asn Ile Leu Asn Thr Ile Asp Ser Leu Ala Glu Thr						
	290		295		300	
Val Leu Tyr Ala Leu Leu Phe Val Val Ile Val Val Phe Leu Phe Leu						
305		310		315		320
Gly Arg Trp Arg Ala Thr Leu Ile Ile Cys Ile Thr Ile Pro Leu Ser						
	325		330		335	
Leu Ile Ala Ser Phe Ile Tyr Leu Ala Val Thr Gly Asn Thr Ile Asn						
	340		345		350	
Ile Ile Ser Leu Ser Ser Leu Ser Ile Ala Ile Gly Met Val Val Asp						
	355		360		365	
Asp Ala Ile Val Val Leu Glu Asn Val Thr Thr His Ile Glu Arg Gly						
	370		375		380	
Ser Asp Pro Lys Gln Ala Ala Val His Gly Thr Asn Glu Val Ala Ile						
385		390		395		400
Ser Val Ile Ala Ser Thr Leu Thr Met Ile Ala Val Phe Phe Pro Leu						
	405		410		415	
Thr Met Val Ser Gly Met Ser Gly Val Met Phe Lys Gln Leu Gly Trp						
	420		425		430	
Met Met Cys Ala Ile Met Phe Ile Ser Thr Val Ala Ala Leu Ser Leu						
	435		440		445	
Thr Pro Met Leu Cys Ser Gln Leu Leu Arg Leu Gln Lys Lys Gln Ser						
	450		455		460	
Lys Thr Phe Lys Leu Leu Phe Gly Pro Ile Glu Lys Gly Leu Asp Ala						
465		470		475		480
Leu Asp Thr Gly Tyr Ala Arg Met Leu Asn Trp Ala Val Arg His Arg						
	485		490		495	
Pro Ile Val Ile Phe Gly Cys Ile Val Phe Phe Val Val Ser Leu Phe						
	500		505		510	
Cys Ala Lys Ser Ile Gly Thr Glu Phe Phe Pro Ala Gln Asp Asn Ala						
	515		520		525	
Arg Ile Ala Val Gln Leu Glu Leu Pro Ile Gly Thr Arg Lys Glu Leu						
	530		535		540	

Ala Gln Glu Val Ser Glu Lys Leu Thr Asn Gln Trp Leu Asn Lys Tyr
 545 550 555 560
 Lys Gly Val Met Thr Val Cys Asn Tyr Thr Val Gly Gln Ala Asp Ser
 565 570 575
 Asp Asn Thr Trp Ala Ser Met Gln Asp Asn Gly Ser His Ile Ile Ser
 580 585 590
 Phe Asn Ile Ser Leu Val Asp Pro Gly Asp Arg Asp Ile Ser Leu Glu
 595 600 605
 Gln Val Cys Asp Glu Met Arg Glu Asp Leu Lys Lys Tyr Pro Glu Phe
 610 615 620
 Ser Lys Ala Gln Val Ile Leu Gly Gly Ser Asn Thr Gly Met Ser Ala
 625 630 635 640
 Gln Ala Ser Ala Asp Phe Glu Val Tyr Gly Tyr Ser Met Glu Glu Thr
 645 650 655
 Asp Ser Val Ala Ala Arg Leu Lys Arg Glu Leu Leu Asn Val Lys Gly
 660 665 670
 Val Ser Glu Val Asn Ile Ser Arg Ser Asp Tyr Gln Pro Glu Tyr Gln
 675 680 685
 Val Asp Phe Asp Arg Glu Lys Leu Ala Leu His Gly Leu Asn Leu Ala
 690 695 700
 Thr Ala Gly Asn Tyr Leu Arg Asn Arg Ile Asn Gly Ala Ile Ala Ser
 705 710 715 720
 Lys Tyr Arg Glu Asp Gly Asp Glu Tyr Asp Ile Lys Val Arg Tyr Ala
 725 730 735
 Pro Glu Tyr Arg Thr Ser Ile Glu Ser Ile Glu Asn Ile Leu Ile Tyr
 740 745 750
 Asn Ser Arg Gly Glu Ala Val Arg Val Lys Glu Leu Gly Lys Val Val
 755 760 765
 Glu Arg Phe Ala Pro Pro Thr Ile Glu Arg Lys Asp Arg Glu Arg Ile
 770 775 780
 Val Thr Val Ser Ala Val Ile Ser Gly Glu Ala Leu Gly Asn Val Val
 785 790 795 800
 Asn Ala Gly Asn Ala Ile Ile Asp Lys Met Asp Ile Pro Ser Asn Val
 805 810 815
 Thr Ile Gln Val Ala Gly Ser Tyr Glu Asp Gln Gln Asp Ser Phe Arg
 820 825 830
 Asp Leu Gly Thr Leu Ala Ile Leu Ile Val Val Leu Val Phe Ile Val
 835 840 845
 Met Ala Ala Gln Phe Glu Ser Leu Thr Tyr Pro Phe Ile Ile Met Phe
 850 855 860
 Ser Leu Pro Phe Ala Phe Ser Gly Val Leu Met Ala Leu Phe Phe Thr
 865 870 875 880
 Lys Ser Thr Leu Ser Val Met Ser Leu Leu Gly Ala Ile Met Leu Ile
 885 890 895
 Gly Ile Val Val Lys Asn Gly Ile Val Leu Ile Asp Tyr Ile Thr Leu
 900 905 910
 Cys Arg Glu Arg Gly Leu Ala Val Leu Asn Ser Val Val Thr Ala Gly
 915 920 925
 Lys Ser Arg Leu Arg Pro Val Leu Met Thr Thr Ala Thr Thr Val Leu
 930 935 940
 Gly Met Ile Pro Met Ala Ile Gly Gly Gly Gln Gly Ser Glu Met Trp
 945 950 955 960
 Ser Pro Met Ala Ile Ala Val Ile Gly Gly Leu Thr Val Ser Thr Ile
 965 970 975
 Leu Thr Leu Val Leu Ile Pro Thr Leu Tyr Cys Val Phe Ala Gly Thr
 980 985 990
 Gly Ile Lys His Gln Arg Lys Val Leu Arg Arg Lys Arg Glu Leu Glu
 995 1000 1005
 Ala Tyr Phe Glu Glu His Lys Asp Glu Met Ile Lys Lys

1010

1015

1020

<210> 7717
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7717

Arg	Asn	Ile	Glu	Asn	Lys	Gly	Tyr	Thr	Lys	Thr	Gly	Asn	Lys	Glu	Ile
1				5					10					15	
Pro	Lys	Glu	Asp	Lys	Gln	Leu	Lys	Leu	Leu	Tyr	Glu	Gln	Asn	Glu	Met
			20					25					30		
Phe	Leu	Lys	Gln	Lys	Asp	Ala	Phe	Gly	Gly	Gly	Cys	Thr	Ala	Leu	Gly
		35					40					45			
Gly	Leu	Cys	Thr	Gly	Thr	Gly	Gly	Lys	Gly	His	Arg	Ala	Thr	Asp	Ala
	50					55					60				

<210> 7718
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 7718

Gly	Glu	Asn	Arg	Asp	Phe	Asn	Arg	Asn	Leu	Thr	Glu	Ile	Lys	Arg	Gly
1				5					10					15	
Leu	Ser	Lys	Lys	Leu	Gly	Gly	Thr	Pro	Trp	Arg	Glu	Leu	Asn	Gly	Asn
		20						25					30		
Gln	Thr	Glu	Ile	Glu	Arg	Lys	Thr	Ala	Leu	Thr	Leu	Leu	Met	Arg	Leu
		35					40					45			
Gly	Arg	His	Leu	Phe	Gln	Gly	Arg	Lys	Glu	Gln	Ser	Phe	Gly	Phe	Lys
	50					55					60				
Lys	Thr	Cys	Tyr	Leu	Glu	Thr	Lys	Gly	Leu	Ile					
65					70					75					

<210> 7719
 <211> 419
 <212> PRT
 <213> B.fragilis

<400> 7719

Arg	Ile	Met	Ser	Glu	Asn	Leu	Ile	Ile	Phe	Asn	Ala	Lys	Val	Val	Thr
1				5					10					15	
Pro	Leu	Gly	Phe	Ser	Ala	Arg	Lys	Gly	Lys	Glu	Met	Ala	Glu	Leu	Arg
		20						25				30			
Ile	Leu	Glu	Lys	Ala	Thr	Val	Glu	Val	Val	Asp	Gly	Ile	Ile	Thr	Tyr
		35					40					45			
Val	Gly	Pro	Asn	Arg	Gly	Glu	Val	Arg	Asp	Gly	Tyr	Tyr	His	His	Phe
	50				55					60					
Trp	His	Tyr	Asn	Ala	Arg	Gly	Lys	Cys	Leu	Leu	Pro	Gly	Phe	Val	Asp
65				70					75					80	
Ser	His	Thr	His	Phe	Val	Phe	Gly	Gly	Glu	Arg	Ala	Glu	Glu	Phe	Ser
			85					90					95		
Trp	Arg	Leu	Lys	Gly	Glu	Ser	Tyr	Met	Ser	Ile	Met	Gln	Arg	Gly	Gly
		100					105					110			
Gly	Ile	Ala	Ser	Thr	Val	Gln	Ala	Thr	Arg	Glu	Leu	Ser	Phe	Ile	His
	115					120						125			
Leu	Arg	Ser	Lys	Ala	Glu	Gly	Leu	Leu	Lys	Lys	Met	Thr	Ala	Met	Gly
	130					135					140				
Ile	Thr	Thr	Val	Glu	Gly	Lys	Ser	Gly	Tyr	Gly	Leu	Asn	Arg	Glu	Thr

145 150 155 160
 Glu Leu Leu Gln Leu Lys Val Met Arg Ser Leu Asn Lys Asp Glu Gly
 165 170 175
 Val Arg Val Asp Ile Val Pro Thr Phe Leu Gly Ala His Ala Leu Pro
 180 185 190
 Asp Glu Tyr Lys Glu Arg Pro Asp Asp Tyr Ile Asp Phe Leu Ile Arg
 195 200 205
 Glu Leu Leu Pro Val Ile Gln Arg Asp Ser Leu Ala Glu Phe Cys Asp
 210 215 220
 Val Phe Cys Glu Glu Gly Val Phe Ser Ile Glu Gln Ser Arg Arg Leu
 225 230 235 240
 Leu Thr Ala Ala Gly Asp Tyr Gly Leu Leu Pro Lys Leu His Ala Asp
 245 250 255
 Glu Ile Val Ser Leu Gly Gly Ala Glu Leu Ala Ala Glu Leu Gly Ala
 260 265 270
 Val Ser Ala Asp His Leu Leu His Ala Ser Asp Ala Gly Ile Glu Ala
 275 280 285
 Met Ala Arg Lys Gly Val Val Ala Thr Leu Leu Pro Leu Thr Ala Phe
 290 295 300
 Ala Leu Lys Glu Pro Tyr Ala Arg Gly Arg Asp Met Ile Asp Ala Gly
 305 310 315 320
 Cys Ala Val Ala Leu Ala Thr Asp Leu Asn Pro Gly Ser Cys Phe Ser
 325 330 335
 Gly Ser Ile Pro Leu Thr Phe Ala Leu Ala Cys Ile His Met Gln Leu
 340 345 350
 Thr Val Glu Glu Ala Ile Thr Ala Leu Thr Leu Asn Gly Ala Ala Ala
 355 360 365
 Leu Asn Arg Ala Asp Ser Ile Gly Ser Ile Glu Val Gly Lys Lys Gly
 370 375 380
 Asp Phe Val Val Leu Asp Ser Asp Asn Tyr His Ile Leu Pro Tyr Tyr
 385 390 395 400
 Val Gly Met Asn Cys Val Asn Thr Thr Ile Lys Gly Gly Met Leu Tyr
 405 410 415
 Pro Ser Val

<210> 7720

<211> 489

<212> PRT

<213> B.fragilis

<400> 7720

His Gln Arg Arg Ile Cys Val Asn Phe Met Gln Ile Leu Leu Ser Phe
 1 5 10 15
 Tyr Gly Phe Tyr Leu Ser Leu Gln Leu Leu Ile Lys Leu Arg Ala Cys
 20 25 30
 Met Lys Asn Tyr Leu Lys Tyr Ser Leu Trp Leu Thr Leu Ile Val Leu
 35 40 45
 Phe Ala Leu Ile Gly Met His Trp Leu Pro Ala Ile Thr Ile Asp Gly
 50 55 60
 His Thr Met Arg Arg Val Asp Leu Leu Ser Asp Val Arg Met Pro Glu
 65 70 75 80
 Pro Asp Lys Asp Glu Val Val Ala Asp Ser Leu Pro Pro Val Pro Val
 85 90 95
 Val Lys Pro Ala Phe Val Asp Thr Cys Arg Ser Gly Met Thr Cys Ile
 100 105 110
 Glu Asp Tyr Ser Asp Ser Thr Met Arg Gly Met Thr Pro Phe Tyr Arg
 115 120 125
 Ala Leu Asp Glu Ile Gln Ser Lys Gly Arg Leu Val Arg Ile Ala Val

130 135 140
 Phe Gly Asp Ser Phe Ile Glu Ala Asp Ile Phe Thr Ala Asp Leu Arg
 145 150 155 160
 Glu Met Leu Gln Lys Arg Phe Gly Gly Cys Gly Val Gly Phe Val Thr
 165 170 175
 Ile Thr Ser Met Thr Ser Gly Tyr Arg Pro Thr Val Arg His Ser Phe
 180 185 190
 Gly Gly Trp Ser Ser His Ala Val Thr Asp Ser Val Tyr Phe Asp Lys
 195 200 205
 Lys Lys Gln Gly Ile Ser Gly His Tyr Phe Val Pro Arg Glu Arg Ala
 210 215 220
 Tyr Val Glu Leu Arg Gly Gln Asn Lys Tyr Ala Ser Leu Leu Asp Thr
 225 230 235 240
 Cys Gln Ile Ala Ser Ile Phe Phe Tyr Asn Lys Gly Glu Val Asn Leu
 245 250 255
 Ser Val Cys Val Asn Arg Gly Glu Ala Glu Ala Arg Asp Phe Ser Thr
 260 265 270
 Thr Gly Arg Leu Gln Gln Met Lys Val Asn Gly Arg Ile Gly Ser Val
 275 280 285
 Arg Trp Asp Ile Asn Arg Ala Asp Ser Thr Leu Phe Tyr Gly Val Ala
 290 295 300
 Met Asp Gly Thr Gln Gly Val Val Val Asp Asn Phe Ser Leu Arg Gly
 305 310 315 320
 Ser Ser Gly Leu Ser Leu Arg Ser Ile Pro Ser Lys Met Leu Gln Glu
 325 330 335
 Phe Asn Ala Gln Arg Pro Tyr Asp Leu Ile Ile Leu Glu Tyr Gly Leu
 340 345 350
 Asn Val Ala Thr Glu Arg Gly Arg Asn Tyr Asp Pro Tyr Lys Lys Gly
 355 360 365
 Leu Leu Thr Ala Ile Asn His Leu Lys Glu Cys Phe Pro Gln Ala Gly
 370 375 380
 Phe Leu Leu Leu Ser Val Gly Asp Arg Asp Tyr Lys Thr Asp Thr Gly
 385 390 395 400
 Glu Leu Arg Thr Met Pro Gly Val Lys Asn Leu Ile Arg Tyr Gln Gln
 405 410 415
 Asn Ile Ala Ala Glu Ser Gly Ile Ala Phe Trp Asn Met Phe Glu Ala
 420 425 430
 Met Gly Gly Glu Gly Ser Met Ala Gly Leu Val His Ala Lys Pro Ser
 435 440 445
 Leu Ala Asn Tyr Asp Tyr Thr His Ile Asn Phe Arg Gly Gly Arg His
 450 455 460
 Leu Ala Gly Leu Leu Tyr Glu Thr Leu Ile Tyr Gly Lys Glu Gln Tyr
 465 470 475 480
 Glu Arg Arg Lys Ala Tyr Glu Ala Glu
 485

<210> 7721

<211> 213

<212> PRT

<213> B.fragilis

<400> 7721

Asp Ala Phe Met Lys Lys Leu Cys Phe Leu Leu Leu Met Ser Trp Val
 1 5 10 15
 Val Met Asp Val Thr Ala Gln Asn Val Val Tyr Ser Asn Leu Lys Gly
 20 25 30
 Leu Leu Ala Cys Glu Gly Asp Thr Val Ala Ser Leu Lys Val Glu Lys
 35 40 45
 Arg Thr Lys Asn His Ile Leu Met Thr Gly Gly Ala Asp Tyr Lys Ile

```

      50                      55                      60
Ser Ala Gly Pro Asp Asp Ser Met Cys Lys Tyr Leu Lys Ser Arg Cys
65                      70                      80
Tyr Ala Val Gln Ala Asp Thr Ser Leu Tyr Val Asn Cys Lys Arg Leu
                      85                      90                      95
Arg Tyr Lys Lys Phe Arg Phe Gly Gly Trp Tyr Ala Pro Ala Leu Arg
100                      105                      110
Ile Gly Asp His Ile Tyr Phe Ser Ala Ile Pro Leu Gly Ser Val Ala
115                      120                      125
Ala Gly Ser Asp Ala Thr Met Asp Val Met Leu Gly Gly Gln Phe Gly
130                      135                      140
Asp Ala Ile Ala Ala Ser Ala Leu Ile Ser Lys Arg Val Tyr Tyr Glu
145                      150                      155                      160
Ile Asp Pro Glu Thr Asn Lys Val Gly Phe Val Gly Lys Gly Arg Met
165                      170                      175
Glu Glu Leu Leu Gly Gly His Pro Asp Trp Lys Ala Ala Tyr Leu Asn
180                      185                      190
Glu Asn Ser Glu Ser Ala Lys Val Thr Asp Lys Tyr Leu Arg Leu Leu
195                      200                      205
Lys Ala Glu Glu Lys
210

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<210> 7722
<211> 309
<212> PRT
<213> B.fragilis

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<400> 7722
Asn Leu Asn Met Lys Arg Cys Phe Gln Leu Val Ala Leu Leu Ala Val
1      5      10      15
Val Leu Leu Gly Ser Cys Thr Gly Gly Lys Asp Lys Ser Ala Ala Glu
20      25      30
Lys Thr Glu Glu Lys Pro Lys Val Lys Leu Ala Asp Val Thr Ala Arg
35      40      45
Pro Val Glu Gln Ile Gln Glu Tyr Thr Ala Thr Val Glu Ala Glu Val
50      55      60
Lys Asn Asn Ile Ala Pro Ser Ser Pro Val Arg Ile Asp Lys Ile Phe
65      70      75      80
Val Glu Val Gly Asp His Val Ser Lys Gly Gln Lys Leu Val Gln Met
85      90      95
Asp Ala Ala Asn Leu Lys Gln Thr Lys Leu Gln Leu Asp Asn Gln Glu
100      105      110
Val Glu Phe Asn Arg Ile Asp Glu Leu Tyr Lys Val Gly Gly Ala Ser
115      120      125
Lys Ser Glu Trp Asp Ala Ala Lys Met Ala Tyr Asp Val Lys Lys Thr
130      135      140
Ala Tyr Gln Asn Leu Leu Glu Asn Thr Ser Leu Leu Ser Pro Ile Ser
145      150      155      160
Gly Val Val Thr Ala Arg Asn Tyr Asp Ser Gly Asp Met Tyr Ser Gly
165      170      175
Gly Asn Pro Val Leu Thr Val Glu Lys Ile Thr Pro Val Lys Leu Leu
180      185      190
Ile Asn Val Ser Glu Val Tyr Phe Thr Lys Val Lys Lys Gly Ala Pro
195      200      205
Val Asn Val Lys Leu Asp Val Tyr Gly Asp Glu Ala Phe Glu Gly Lys
210      215      220
Ile Ser Leu Ile Tyr Pro Thr Ile Asp Pro Ser Thr Arg Thr Phe Gln
225      230      235      240
Val Glu Ile Gln Leu Pro Asn Gln Asn Gln Lys Val Arg Pro Gly Met

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245 250 255
 Phe Ala Arg Ala Ser Leu Asn Phe Gly Thr Glu Glu Asn Val Val Val
 260 265 270
 Pro Asp Leu Ala Ile Val Lys Gln Ala Gly Ala Arg Arg Pro Leu Cys
 275 280 285
 Val Cys Ile Gln Gly Trp Lys Ser Asp Ile Gln Gln Ser Gly Thr Gly
 290 295 300
 Thr Ser His Gly Gly
 305

<210> 7723

<211> 453

<212> PRT

<213> B.fragilis

<400> 7723

Asn Tyr Cys Met Asn Lys Met Lys Cys Phe Leu Ser Lys Lys Met Leu
 1 5 10 15
 Leu Ala Val Val Val Leu Leu Ser Val Gly Tyr Val Gln Ala Gln Glu
 20 25 30
 Ala Lys Asp Ile Val Leu Leu Thr Leu Asp Lys Ala Leu Glu Ile Ala
 35 40 45
 Leu Ser Glu Asn Pro Thr Met Lys Val Ala Gly Gln Glu Ile Gln Leu
 50 55 60
 Lys Lys Glu Ala Lys Lys Glu Ala Tyr Gly Gly Leu Phe Pro Glu Val
 65 70 75 80
 Ser Leu Thr Gly Ser Tyr Ser Arg Thr Leu Lys Lys Gln Thr Met Val
 85 90 95
 Met Asp Phe Gly Gly Glu Ser Gln Thr Ile Gln Val Gly Ser Asp Asn
 100 105 110
 Ser Tyr Asn Gly Gly Leu Asn Val Ser Leu Pro Val Phe Ala Pro Thr
 115 120 125
 Leu Tyr Lys Ser Ile Asn Leu Thr Lys Thr Asp Val Glu Leu Ala Val
 130 135 140
 Glu Lys Ala Arg Ser Ser Lys Leu Asp Leu Val Asn Gln Val Thr Lys
 145 150 155 160
 Ala Tyr Tyr Gln Leu Leu Ala Gln Asp Ser Tyr Lys Val Leu Leu
 165 170 175
 Gln Ser Tyr Ala Gln Ala Glu Ala Asn Tyr Glu Val Val Lys Ala Lys
 180 185 190
 Tyr Glu Gln Gly Thr Val Ser Glu Tyr Asp Lys Ile Arg Ala Asp Val
 195 200 205
 Gln Val Arg Ser Leu Lys Pro Ser Val Val Ser Ala Gly Asn Gly Val
 210 215 220
 Asn Leu Ala Arg Leu Gln Leu Gln Val Leu Met Gly Met Asp Thr Glu
 225 230 235 240
 Val Glu Ile Ala Ala Asp Gly Asn Leu Lys Asp Tyr Glu Met Val Met
 245 250 255
 Phe Arg Arg Gln Met Glu Ser Asn Gln Leu Asn Leu Asn Asn Asn Ser
 260 265 270
 Asp Leu Lys Gln Leu Asp Leu Asn Ala Asp Leu Leu Lys Lys Thr Leu
 275 280 285
 Ala Val Gln Arg Thr Asn Phe Met Pro Thr Leu Ala Ala Ser Phe Asn
 290 295 300
 Tyr Ser Tyr Thr Ser Leu Asn Asn Asp Phe Lys Met Ser His Tyr Lys
 305 310 315 320
 Trp Phe Pro Tyr Ser Thr Val Gly Leu Ser Leu Ser Ile Pro Leu Phe
 325 330 335
 Lys Ala Ser Asn Phe Thr Lys Val Lys Gln Thr Lys Ile Gln Met Gln


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          340          345          350
Gln Leu Ala Glu Asn Arg Thr Asn Val Tyr Arg Gln Leu Thr Met Gln
          355          360          365
Ala Thr Ser Tyr Leu Asp Asn Met Ala Ala Ser Thr Glu Gln Val Val
          370          375          380
Ser Asn Lys Glu Gly Ile Val Gln Ala Glu Lys Gly Arg Leu Ile Ala
385          390          395          400
Gln Lys Arg Tyr Glu Val Gly Lys Gly Thr Ile Leu Glu Leu Asn Asp
          405          410          415
Ser Glu Val Ala Leu Thr Gln Ala Gln Leu Thr Tyr Asn Gln Ser Ile
          420          425          430
Tyr Asp Tyr Leu Val Ala Lys Ala Asp Leu Asp Gln Val Leu Gly Arg
          435          440          445
Glu Glu Val Thr Glu
          450

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<210> 7724

<211> 159

<212> PRT

<213> B.fragilis

<400> 7724

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Phe Ser Ala Ile Ala Met Ala Glu Leu Gly Asn Ile Ser Glu Arg Arg
1          5          10          15
Val Ala Pro Val Asn Tyr Gly Val Ala Cys Leu Pro Glu Phe Leu Val
          20          25          30
Ala Asn Pro Gly Leu Asn Ser Gly Phe Met Ile Pro Gln Tyr Ala Ala
          35          40          45
Ala Ser Met Val Ser Gln Asn Lys Met Tyr Cys Tyr Ala Ala Ser Ser
          50          55          60
Asp Ser Ile Val Ser Ser Asn Gly Gln Glu Asp His Val Ser Met Gly
65          70          75          80
Ala Asn Ala Ala Thr Lys Leu Phe Arg Ile Met Asp Asn Leu Glu His
          85          90          95
Ile Leu Ala Ile Glu Leu Met Asn Ala Ala Gln Gly Ile Glu Phe Arg
          100          105          110
Arg Pro Ala Lys Thr Ser Pro Ile Leu Glu Arg Tyr Leu Ala Ala Tyr
          115          120          125
Arg Lys Glu Val Pro Phe Val Lys Asp Asp Ile Val Met Tyr Lys Glu
          130          135          140
Ile His Lys Thr Val Ala Phe Leu Asn Arg Thr Arg Ser Glu Tyr
145          150          155

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<210> 7725

<211> 525

<212> PRT

<213> B.fragilis

<400> 7725

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Cys Val Arg Ile Thr Tyr Ile Ile Cys Leu Lys Ala Ile Arg Phe Arg
1          5          10          15
Glu Asn Tyr Tyr Met Lys Pro Leu Leu Lys Pro Ile Met Asn Met Phe
          20          25          30
Pro Ile Asp Ile Asp Phe Ser Arg Leu Leu Glu Ala Phe Lys Tyr Asn
          35          40          45
Pro Asp Ala Pro Met Ile Phe Ser Ser Gly Ile Phe Leu Trp Leu Phe
          50          55          60
Ala Ala Phe Met Val Ile Tyr Thr Leu Leu Gln His Arg Asn Thr Val
65          70          75          80

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Arg Ile Leu Phe Val Ala Leu Phe Ser Tyr Tyr Phe Tyr Tyr Lys Ser
 85 90 95
 Ser Gly Thr Tyr Phe Phe Leu Leu Ala Ile Val Thr Val Thr Asp Phe
 100 105 110
 Met Ile Ala Trp Leu Met Asp Arg Thr Asp Val Arg Trp Lys Arg Lys
 115 120 125
 Phe Cys Val Val Leu Ser Val Ser Val Asn Leu Gly Leu Leu Cys Tyr
 130 135 140
 Phe Lys Tyr Thr Asn Phe Leu Gly Gly Val Ile Ala Ser Leu Met Gly
 145 150 155 160
 Gly Glu Phe Thr Ala Leu Asp Ile Phe Leu Pro Val Gly Ile Ser Phe
 165 170 175
 Phe Thr Phe Gln Ser Leu Ser Tyr Thr Ile Asp Val Tyr Arg Lys Glu
 180 185 190
 Ile Lys Pro Leu Thr Ser Leu Leu Asp Tyr Ala Phe Tyr Val Ser Phe
 195 200 205
 Phe Pro Gln Leu Val Ala Gly Pro Ile Val Arg Ala Arg Asp Phe Ile
 210 215 220
 Pro Gln Ile Arg Lys Pro Leu Tyr Val Ser Gln Glu Met Phe Gly Arg
 225 230 235 240
 Gly Ile Phe Leu Ile Val Ala Gly Leu Phe Lys Lys Ala Val Ile Ser
 245 250 255
 Asp Tyr Ile Ser Ile Asn Phe Val Glu Arg Ile Phe Asp Asn Pro Thr
 260 265 270
 Leu Tyr Ser Gly Val Glu Asn Leu Met Gly Leu Tyr Gly Tyr Ala Leu
 275 280 285
 Gln Ile Tyr Cys Asp Phe Ser Gly Tyr Ser Asp Met Ala Ile Gly Ile
 290 295 300
 Ala Leu Leu Leu Gly Phe His Phe Asn Leu Asn Phe Asn Ser Pro Tyr
 305 310 315 320
 Lys Ser Ala Ser Ile Thr Glu Phe Trp Arg Arg Trp His Ile Ser Leu
 325 330 335
 Ser Ser Trp Leu Arg Asp Tyr Leu Tyr Ile Ser Leu Gly Gly Asn Arg
 340 345 350
 His Gly Lys Phe Arg Gln Tyr Leu Asn Leu Ile Ile Thr Met Phe Leu
 355 360 365
 Gly Gly Leu Trp His Gly Ala Ser Trp Asn Phe Val Leu Trp Gly Thr
 370 375 380
 Phe His Gly Val Ala Leu Ala Leu His Lys Ala Trp Met Ser Ile Ile
 385 390 395 400
 Gly Arg Lys Lys Gly Glu Thr Ser His Gly Ile Arg Arg Val Leu Gly
 405 410 415
 Val Ile Ile Thr Phe His Phe Val Cys Phe Cys Trp Ile Phe Phe Arg
 420 425 430
 Asn Ala Asp Phe His Asn Ser Met Asp Met Leu Asn Gln Ile Phe Thr
 435 440 445
 Ala Phe Arg Pro Gln Leu Phe Pro Gln Leu Ile Glu Gly Tyr Trp Arg
 450 455 460
 Val Phe Ala Leu Met Ala Val Gly Phe Leu Leu His Phe Ala Pro Asp
 465 470 475 480
 Ser Trp Glu Asn Ala Val Cys Arg Gly Val Ile Lys Leu Pro Phe Leu
 485 490 495
 Gly Lys Ala Ile Val Met Val Ala Met Ile Tyr Leu Val Ile Gln Met
 500 505 510
 Lys Ser Ser Glu Ile Gln Pro Phe Ile Tyr Phe Gln Phe
 515 520 525

<210> 7726

<211> 63

<212> PRT

<213> B.fragilis

<400> 7726

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Ser Lys Leu Val Pro Gly Asp Arg Tyr Val Tyr Val Tyr Lys Asp Gly
1          5          10          15
Lys Val Thr Tyr Asn Lys Val Glu Leu Gly Arg Arg Met Gly Ala Glu
          20          25          30
Tyr Glu Leu Lys Ser Gly Val Pro Asn Asn Ser Gln Val Val Ile Ala
          35          40          45
Gly Gln Thr Arg Leu Ile Asn Gly Thr Glu Val Glu Val Glu Lys
          50          55          60

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<210> 7727

<211> 197

<212> PRT

<213> B.fragilis

<400> 7727

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Ile Lys Glu Thr Ser Ser Ile Ser Arg Met Gln Ser Asn His Leu Leu
1          5          10          15
Lys Thr Gln Lys Ser Phe Ser Asp Ile Tyr Ser Ile Tyr Tyr Val Arg
          20          25          30
Met Leu Arg Phe Ser Gln Thr Tyr Val Ile Ala Glu Glu Asp Ala Glu
          35          40          45
Asn Ile Val Gln Asp Thr Phe Leu Tyr Leu Trp Glu His Leu Glu Leu
          50          55          60
Leu Glu Asp Ile Asp His Leu Asp Ala Phe Leu Phe Thr Leu Ile Lys
          65          70          75          80
Asn Arg Cys Leu Asn Phe Leu Lys His Gln Ser Tyr Ile Gln Ala Lys
          85          90          95
Thr Cys Ser Leu Lys Ala Asp Glu Glu Leu Glu Ser Gln Leu Asn Leu
          100          105          110
Tyr Ala Leu Glu Gln Phe Asp Glu Ala Val Ser Ser Ile Ser Glu Val
          115          120          125
Glu Asn Leu Leu Ser Arg Thr Met Gln Lys Leu Pro Glu Arg Cys Arg
          130          135          140
Glu Ile Phe Leu Leu Ser Arg Ile Glu Gly Leu Lys Tyr Lys Glu Ile
          145          150          155          160
Ala Glu Arg Leu Asp Ile Ser Val Asn Thr Val Glu Asn Gln Ile Ser
          165          170          175
Ile Ala Leu Arg Lys Leu Arg Ser Glu Leu Lys Glu Tyr Leu Pro Leu
          180          185          190
Leu Val Phe Ile Ile
          195

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<210> 7728

<211> 77

<212> PRT

<213> B.fragilis

<400> 7728

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Gln Lys Val Lys Ser Ser Asn Arg Lys Arg Lys Asn Lys Arg Gly Lys
1          5          10          15
Arg Ile Glu Asn Glu Gly Asn Arg Glu Lys Arg Gly Tyr Phe Leu Gly
          20          25          30
Lys Gly Ile Ser Ala Gly Pro Lys Gly Ile Val Val Ile Lys Ala Ser
          35          40          45
Met Gly Ala Gly Asn Phe Lys Lys Gln Gly Trp Glu Trp Lys Gln Glu

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50 55 60
 Glu Leu Thr Ile Lys Pro His Arg Thr Leu Leu Lys Asn
 65 70 75

<210> 7729
 <211> 811
 <212> PRT
 <213> B.fragilis

<400> 7729

Thr	Tyr	Asp	Lys	Val	Met	Lys	Lys	Asn	Leu	Leu	Gln	Lys	Trp	Tyr	Val
1				5					10					15	
His	Gln	Gln	Leu	Glu	Leu	Thr	His	Ile	Ile	Arg	Ile	Met	Lys	Leu	Ser
			20					25					30		
Val	Phe	Phe	Ile	Phe	Val	Phe	Leu	Phe	Gln	Leu	Gln	Ala	Gly	Asn	Val
		35					40					45			
Lys	Ser	Gln	Glu	Val	Arg	Val	Thr	Leu	Ser	Lys	Ser	Ser	Leu	Thr	Phe
	50					55					60				
Gly	Glu	Leu	Met	Arg	Glu	Ile	Glu	Lys	Gln	Thr	Asn	Tyr	Leu	Phe	Met
65					70				75					80	
Tyr	Arg	Asp	Ala	Glu	Ile	Asp	Leu	Ser	Gln	Lys	Ile	Glu	Val	Lys	Asn
				85					90					95	
Thr	Ser	Ala	Thr	Val	Lys	Glu	Ile	Leu	Thr	Thr	Ala	Leu	Arg	Asn	Lys
			100					105					110		
Lys	Leu	Thr	Tyr	Lys	Phe	Ser	Asn	Asn	Tyr	Ile	Ser	Leu	Tyr	Val	Asp
		115					120					125			
Lys	Glu	Lys	Ala	Pro	Glu	Thr	Met	Val	Thr	Gln	Gln	Glu	Arg	Lys	Ile
	130					135					140				
Lys	Ile	Lys	Gly	Val	Val	Ile	Asp	Gln	Val	Gly	Glu	Pro	Ile	Ile	Gly
145					150					155				160	
Ala	Asn	Ile	Ser	Leu	Lys	Gly	Gln	Pro	Gly	Thr	Gly	Asp	Ile	Thr	Asp
				165					170					175	
Ile	Glu	Gly	Asn	Phe	Thr	Leu	Glu	Val	Pro	Glu	Lys	Ala	Val	Leu	Val
			180					185					190		
Ile	Ser	Tyr	Ile	Gly	Tyr	Leu	Thr	Gln	Glu	Ile	Pro	Val	Asn	Gly	Lys
		195					200					205			
Ala	Ser	Phe	Asn	Ile	Gln	Met	Lys	Glu	Asp	Thr	Lys	Thr	Leu	Asp	Glu
		210				215					220				
Val	Val	Val	Val	Gly	Tyr	Gly	Ser	Gln	Lys	Lys	Gln	Thr	Val	Thr	Ala
225					230					235				240	
Ser	Ala	Ser	Thr	Leu	Lys	Val	Ser	Ser	Leu	Lys	Asn	Val	Pro	Thr	Ala
				245					250					255	
Asn	Leu	Ala	Ser	Ser	Leu	Gly	Gly	Arg	Val	Ser	Gly	Val	Leu	Ile	Gln
		260					265						270		
Gln	Thr	Gly	Gly	Glu	Ala	Gly	Tyr	Asp	Asp	Pro	Thr	Ile	Ile	Ile	Arg
		275					280					285			
Gly	Ser	Ser	Ser	Pro	Thr	Ser	Ser	Ser	Pro	Leu	Ile	Val	Val	Asp	Gly
	290					295					300				
Ile	Ile	Gly	Arg	Ser	Met	Ser	Gln	Leu	Asp	Pro	Ser	Glu	Ile	Glu	Ser
305					310					315				320	
Met	Thr	Val	Leu	Lys	Asp	Ala	Ser	Ala	Val	Ala	Pro	Tyr	Gly	Ala	Arg
				325					330					335	
Gly	Ala	Asn	Gly	Val	Ile	Leu	Ile	Thr	Lys	Arg	Gly	Lys	Ser	Gly	
		340						345				350			
Lys	Ala	Gln	Val	Asp	Tyr	Asn	Phe	Lys	Ile	Gly	Phe	Gly	Thr	Pro	Thr
		355					360					365			
Arg	Met	Pro	Glu	Ile	Ala	Ser	Ser	Tyr	Asp	His	Ala	Arg	Phe	Met	Asn
	370					375					380				
Asp	Ala	Trp	Arg	Asn	Lys	Glu	Met	Asp	Leu	Gly	Glu	Asp	Pro	Gly	Met

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385          390          395          400
Tyr Gly Ile Tyr Thr Glu Glu Glu Leu Gln Lys Phe Arg Asp Gly Ser
          405          410          415
Asp Pro Tyr Gly Tyr Pro Asn Thr Asp Trp Asn Lys Glu Val Leu Leu
          420          425          430
Pro Arg Ala Trp Gln Gln Met His Ser Leu Thr Ala Ser Gly Gly Ser
          435          440          445
Asp Lys Val Lys Tyr Phe Ala Gly Phe Gly Tyr Val Lys Gln Asp Ala
          450          455          460
Leu Tyr Gly Asp Thr Arg Thr Asn Lys Ser Thr Ser Gly Phe Asn Arg
465          470          475          480
Tyr Asn Ala Arg Val Asn Ile Asp Ala Asn Ile Val Asp Lys Tyr Leu
          485          490          495
Asn Leu Ser Ala Asp Met Ala Tyr Arg Gln Glu Asp Arg Asn Ser Ile
          500          505          510
Ala Gly Ser Thr Ser Asp Val Phe Asn Asn Met His Arg Asn Pro Gln
          515          520          525
Thr Asp Pro Gly Arg Phe Pro Asp Gly Asn Leu Gly Lys Val Ser Leu
          530          535          540
Gly Val Asn Pro Ile Gly Leu Ala Thr Glu Gly Gly Trp Val Lys Asp
545          550          555          560
Arg Lys Ser Val Leu Asn Thr Arg Phe Met Leu Asp Phe Asn Val Pro
          565          570          575
Gly Leu Glu Gly Leu Asn Leu Lys Gly Ile Phe Ser Tyr Asp Lys Ile
          580          585          590
Phe Asn Ser Ile Lys Arg Trp Thr Thr Pro Val Asp Phe Tyr Val Trp
          595          600          605
Asn Lys Ile Thr Gly Glu Tyr Asp Gly His Ser Pro Asn Arg Glu Gly
          610          615          620
Ala Glu Leu Lys Gln Thr Tyr Ser Thr Ser Gln Ala Met Thr Phe Glu
625          630          635          640
Phe Gln Ala Ala Tyr Asn Lys Thr Ile Ala Gln Asp His Gln Leu Gly
          645          650          655
Ala Leu Phe Val Phe Ser Arg Ser Glu Gly Ala Asp Glu Asn Phe Trp
          660          665          670
Ala Ser Arg Thr Lys Tyr Arg Ile Tyr Ser Ile Gln Gln Leu Phe Ala
          675          680          685
Gly Pro Asp Lys Asp Lys Asp Asn Ser Gly Ser Ala Ser Glu Thr Gly
          690          695          700
Lys Val Gly Ser Val Phe Arg Leu Thr Tyr Asn Tyr Lys Glu Lys Tyr
705          710          715          720
Met Leu Glu Ala Asn Gly Arg Leu Asp Gly Ser Glu Lys Phe Pro Lys
          725          730          735
Ser Lys Arg Tyr Gly Phe Phe Pro Ser Val Ser Ala Ala Trp Arg Ile
          740          745          750
Ser Ala Glu Pro Ile Met Glu Pro Phe Ser Gly Val Leu Ser Asn Leu
          755          760          765
Lys Leu Arg Thr Ser Trp Gly Arg Ala Gly Thr Asp Asn Ile Gly Gln
          770          775          780
Phe Gln Tyr Met Ser Ala Tyr Gly Thr Gly Gly Asp Ala Val Phe Gly
785          790          795          800
Arg Ser Glu Ser Gly Asn Ser Pro Gly Ile His
          805          810

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<210> 7730

<211> 346

<212> PRT

<213> B.fragilis

<400> 7730

Tyr Phe Phe Cys Ile Ser Phe Gly Gly Lys Cys Ile Leu Asp Cys Leu
 1 5 10 15
 Tyr Tyr Lys Thr Thr Gln Gly Thr Met Asn Asp Glu Leu Glu Lys Tyr
 20 25 30
 Phe Ala Gly Thr Leu Ser Ala Thr Glu Lys Thr Glu Phe Leu Asn Lys
 35 40 45
 Leu Arg Asp Asn Pro Glu Ala Lys Lys Glu Phe Ala Arg Met Lys Ala
 50 55 60
 Val Trp Ala Val Ser Gly Leu Met Ala Gln Glu Gly Asp Pro Gln Lys
 65 70 75 80
 Thr Val Arg Gly Ile Ala Glu Phe Asp Lys Arg Leu Lys Arg Arg Ser
 85 90 95
 Val His Arg Phe Arg Ile Gly Phe Phe Lys Tyr Ala Ala Met Ile Val
 100 105 110
 Leu Leu Ile Ser Thr Thr Trp Phe Ile Ala Asn Trp Tyr Thr Gln Lys
 115 120 125
 Glu Gln Lys Lys Gln Tyr Thr Glu Ile Asn Val Pro Lys Gly Gln Arg
 130 135 140
 Val Asn Met Thr Leu Pro Asp Gly Thr Ser Val Trp Leu Ser Pro Gln
 145 150 155 160
 Ser Lys Ile Lys Ile Pro Asn Glu Phe Asn Arg Lys Asn Arg Met Val
 165 170 175
 Glu Leu Asn Gly Glu Gly Tyr Phe Glu Val Thr Lys Asn Ala Lys Lys
 180 185 190
 Pro Phe Ile Val Lys Thr Gln Leu Phe Asn Ile Gln Val Leu Gly Thr
 195 200 205
 Arg Phe Asn Val Phe Ala Tyr Ala Gly Lys Glu Ser Lys Phe Glu Thr
 210 215 220
 Cys Leu Val Glu Gly Arg Val Leu Val Tyr Asn Lys Asn Asn Lys Asn
 225 230 235 240
 Glu Lys Val Tyr Leu Asn Pro His Glu Lys Val Ser Leu Val Asn Asn
 245 250 255
 Arg Met Val Val Ser Thr Ser Asn Phe Asp Asn Glu Glu Tyr Leu Lys
 260 265 270
 Ser Gly Ile Phe Ser Phe Arg Ser Lys Pro Phe Gly Glu Ile Leu Ser
 275 280 285
 Tyr Leu Thr Leu Trp Tyr Asn Val Gln Phe Asn Phe Thr Gly Asp Val
 290 295 300
 Lys Leu Asp Glu Arg Ile Ser Gly Lys Ile Arg Gln Ser Glu Asp Val
 305 310 315 320
 Asp Asn Ile Leu Ile Ala Leu Gln Gly Val Tyr Pro Phe Lys Phe Lys
 325 330 335
 Lys Thr Asp Asp Glu His Tyr Glu Ile Tyr
 340 345

<210> 7731

<211> 381

<212> PRT

<213> B.fragilis

<400> 7731

Glu Leu His Gly Asp Ala Pro Glu Gln Thr Thr Ser Val Asn Ser Ser
 1 5 10 15
 Ile Cys Pro Leu Met Val Pro Ala Val Met Pro Tyr Leu Ala Gly Gln
 20 25 30
 Asn Pro Glu Ile Ala Pro Gly Tyr Thr Glu Thr Arg Phe Pro Asn Pro
 35 40 45
 Asn Ile Thr Trp Glu Thr Ser Glu Met Phe Asn Ile Gly Ile Asp Ala

```

50          55          60
Ser Phe Phe Asn Gly Lys Leu Asn Leu Glu Ala Asp Trp Phe Tyr Lys
65          70          75          80
Lys Thr Asn Asp Ile Leu Arg Glu Arg Thr Asp Met Pro Ala Ile Leu
85          90          95
Gly Tyr Lys Leu Pro Ala Ala Asn Val Gly Lys Val Asp Asn Arg Gly
100          105          110
Ile Asp Leu Asn Ile Thr His Arg Asn His Leu Arg Asp Phe Asn Tyr
115          120          125
Ser Ile Ala Gly Asn Leu Thr Trp Ala Arg Asn Lys Val Ile Asp Leu
130          135          140
Leu Glu Pro Ala Gly Glu Lys Asn Asn Pro Arg Gln Arg Ser Thr Gly
145          150          155          160
His Ser Met Ser Gln Tyr Phe Gly Tyr Glu Ala Leu Gly Leu Phe Gln
165          170          175
Ser Asp Glu Glu Ala Asn Asn Trp Pro Gln Pro Gln Phe Gly Lys Ala
180          185          190
Lys Ala Gly Asp Ile Lys Tyr Lys Asp Gln Asn Gly Asp Gly Ile Ile
195          200          205
Asp Ala Glu Asp Glu Ile Ala Ile Gly Arg Ser Asn Tyr Pro Glu Leu
210          215          220
Val Tyr Gly Leu Asn Leu Asn Ala Glu Trp Lys Gly Phe Asp Ile Thr
225          230          235          240
Phe Phe Phe Gln Gly Ala Ala Leu Ala Asp Phe Tyr Tyr Asn Gly Tyr
245          250          255
Leu Ala Phe Pro Tyr Ile Glu Gly Arg Gly Gly Ala Leu Leu Glu His
260          265          270
His Ile Gly Asn Thr Trp Thr Pro Glu Asn Pro Lys Ala Glu Phe Pro
275          280          285
Arg Leu Tyr Tyr Gly Gly Asn Ala Asn Asn Gln Leu Phe Ser Ser Phe
290          295          300
Trp Met Arg Asn Gly Ser Tyr Leu Arg Leu Lys Asn Val Glu Ile Gly
305          310          315          320
Tyr Asp Phe Lys Lys Leu Leu Leu Ser Lys Val Ser Glu Ile Gln Gly
325          330          335
Leu Arg Leu Tyr Phe Ser Gly Ser Asn Leu Leu Thr Trp Ser Gln Ile
340          345          350
Lys Tyr Phe Asp Pro Glu Leu Arg Ser Thr Asp Gly Ser Ala Tyr Pro
355          360          365
Gln Met Lys Thr Phe Val Phe Gly Ala Asn Ile Thr Phe
370          375          380

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<210> 7732

<211> 167

<212> PRT

<213> B.fragilis

<400> 7732

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Phe Phe Phe Ile Phe Val Leu Met Glu Lys Tyr Tyr Ser Thr Asn Cys
1          5          10          15
Pro Ile Asn Thr Ile Thr Ile Ile Lys Thr Ile Ile Val Ala Met Leu
20          25          30
Phe Ile Ile Ala Ala Ile Ile Val Phe Ala Ser Gly Gly Tyr Trp Leu
35          40          45
Gly Ile Ser Ile Ile Leu Leu Leu Val Ile Met Val Val Thr Tyr
50          55          60
Phe Cys Ile Pro Arg Lys Ile Ile Val Thr Asp Thr Asp Ile Val Leu
65          70          75          80
Tyr Asn His Gly Phe Lys Arg Lys Ile Pro Lys Cys Asp Ile Leu Lys

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<210> 7733
<211> 95
<212> PRT
<213> B.fragilis
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<210> 7734
<211> 109
<212> PRT
<213> B.fragilis
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```
<210> 7735
<211> 431
<212> PRT
<213> B.fragilis
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1           5           10           15
Gly Arg Glu His Ala Leu Ala Trp Lys Ile Ala Gln Ser Pro Lys Val
      20           25           30
Glu Lys Leu Phe Ile Ala Pro Gly Asn Ala Gly Thr Gly Glu Val Gly
      35           40           45
Glu Asn Val Asn Ile Lys Ala Thr Asp Phe Ala Ala Leu Gly Ala Phe
      50           55           60
Ala Leu Glu Glu Ser Ile Asp Met Ile Val Val Gly Pro Glu Asp Pro
      65           70           75           80
Leu Val Glu Gly Ile Tyr Asp His Phe Gln Ser Asn Pro Cys Leu Lys
      85           90           95
Asn Ile Ala Ile Ile Gly Pro Ser Lys Glu Gly Ala Arg Leu Glu Gly
      100          105          110
Ser Lys Glu Phe Ala Lys Glu Phe Met His Arg His His Ile Pro Thr
      115          120          125
Ala Arg Tyr Gln Ser Val Thr Ala Asp Thr Leu Asn Glu Gly Leu Ala
      130          135          140
Phe Leu Glu Thr Leu Glu Ala Pro Tyr Val Leu Lys Ala Asp Gly Leu
      145          150          155          160
Cys Ala Gly Lys Gly Val Leu Ile Leu Pro Thr Leu Glu Glu Ala Lys
      165          170          175
Lys Glu Leu Lys Glu Met Leu Gly Gly Met Phe Gly Asn Ala Ser Ala
      180          185          190
Thr Val Val Ile Glu Glu Phe Leu Ser Gly Ile Glu Cys Ser Val Phe
      195          200          205
Val Leu Thr Asp Gly Asp His Tyr Lys Val Leu Pro Val Ala Lys Asp
      210          215          220
Tyr Lys Arg Ile Gly Glu Gly Asp Lys Gly Leu Asn Thr Gly Gly Met
      225          230          235          240
Gly Ser Val Thr Pro Val Pro Phe Ala Asp Glu Val Phe Met Glu Lys
      245          250          255
Val Arg Thr Arg Ile Ile Glu Pro Thr Val Asn Gly Leu Lys Ala Glu
      260          265          270
Gly Ile Thr Tyr Lys Gly Phe Ile Phe Leu Gly Leu Ile Asn Val Lys
      275          280          285
Gly Glu Pro Met Val Ile Glu Tyr Asn Val Arg Met Gly Asp Pro Glu
      290          295          300
Thr Glu Ser Val Met Leu Arg Ile Gln Ser Asp Leu Val Glu Leu Leu
      305          310          315          320
Glu Gly Val Ala Glu Gly Asn Leu Asp Ala Arg Ser Leu Val Ile Asp
      325          330          335
Pro Arg Thr Ala Thr Cys Val Met Met Val Ser Gly Gly Tyr Pro Glu
      340          345          350
Ala Tyr Gln Lys Gly Tyr Ala Ile Asn Gly Leu Glu Ala Ala Arg Ala
      355          360          365
Thr Asp Ser Ile Leu Phe His Ala Gly Thr Ala Met Lys Asp Gly Gln
      370          375          380
Ala Val Thr Ser Gly Gly Arg Val Leu Ala Ile Cys Ser Tyr Gly Asn
      385          390          395          400
Asp Lys Ala Asp Ala Leu Ala Gln Cys Tyr Lys Val Ala Asp Met Ile
      405          410          415
Asp Phe Lys Asp Lys Asn Tyr Arg Arg Asp Ile Gly Phe Asp Leu
      420          425          430

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<210> 7736

<211> 246

<212> PRT

<213> B.fragilis

<400> 7736

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Leu Phe Leu Ser Val Tyr Asn Phe Val Asp Ser Asn Ile Pro Met Lys
1          5          10          15
Ala Ile Glu Ile Gln Lys Glu Leu Glu Thr Tyr Ile Asp Pro Val Lys
          20          25          30
Arg Glu Tyr Leu Pro Gly Phe Phe Lys Thr Gly Lys Gly Gln Tyr Gly
          35          40          45
Glu Gly Asp Arg Phe Leu Gly Ile Val Val Pro Ala Thr Arg Leu Val
          50          55          60
Ala Lys Lys Tyr Lys Asn Ala Pro Phe Glu Val Met Ala Glu Leu Leu
65          70          75          80
Gln Ser Glu Trp His Glu Cys Arg Leu Cys Ala Leu Leu Met Met Val
          85          90          95
Glu Arg Phe Lys Lys Ser Gly Gly Glu Glu Arg Glu Ala Ile Tyr Arg
          100          105          110
Phe Tyr Leu Ser Gln Thr Glu Arg Ile Asn Asn Trp Asp Leu Val Asp
          115          120          125
Leu Ser Ala Pro Tyr Ile Val Gly Glu Tyr Leu Lys Asp Lys Ser Arg
          130          135          140
Asp Asp Leu Tyr Arg Leu Ala Glu Ser Thr Leu Leu Trp Asp Gln Arg
145          150          155          160
Ile Ala Val Val Ser Thr Val Thr Phe Ile Arg Asn Asn Asp Phe Ile
          165          170          175
Asp Ile Leu Arg Leu Ser Glu Leu Leu Gln His Lys His Asp Leu
          180          185          190
Met Arg Lys Ala Ile Gly Trp Met Leu Arg Glu Met Gly Lys Arg Asp
          195          200          205
Lys Thr Leu Leu Leu Gln Phe Leu Asp Lys Tyr Ser Lys Val Met Pro
          210          215          220
Arg Thr Met Leu Arg Tyr Ser Ile Glu Lys Leu Thr Asp Glu Glu Arg
225          230          235          240
Lys Leu Tyr Met Gly Arg
          245

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<210> 7737

<211> 65

<212> PRT

<213> B.fragilis

<400> 7737

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Asp Phe Arg Ser Glu Arg Glu Thr Ile Ile Lys Met Ala Tyr Glu Met
1          5          10          15
Ile Leu Ala Ser Tyr Leu His Met Pro Ser Tyr Phe Leu Lys Thr Phe
          20          25          30
Thr Glu Tyr Pro Val Val Trp Val Phe Val Ala Gly Pro Glu Ser Pro
          35          40          45
Phe Phe Lys Val Ser Gly Leu Leu Ala Ser Asp Phe Ile Trp Gln Thr
          50          55          60
Arg
65

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<210> 7738

<211> 68

<212> PRT

<213> B.fragilis

<400> 7738

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Thr Thr Leu Phe Arg Tyr Phe Leu Gly Leu Val Val Val Arg Ile Val
1          5          10          15

```

Phe Lys Glu Leu Ile Ser Met Ile Phe Arg His Tyr Leu Phe Ala Asn
 20 25 30
 Ile Thr Glu Ala Pro Lys Ser Arg Ser Asp Ile Glu Glu Asn Arg Glu
 35 40 45
 Met Ser Asn Trp Thr Ala Cys Pro Val Arg Val Leu Leu His Lys Lys
 50 55 60
 Asn Thr Ile Phe
 65

<210> 7739

<211> 614

<212> PRT

<213> B.fragilis

<400> 7739

Ser Leu Cys Pro Phe Phe Met Asp Thr Asn Gln Glu Leu Lys Thr Ser
 1 5 10 15
 Glu Tyr Leu Lys Gly Ile Val Ser Asn Leu Pro Glu Arg Pro Gly Ile
 20 25 30
 Tyr Gln Tyr Leu Asn Ala Glu Gly Thr Ile Ile Tyr Val Gly Lys Ala
 35 40 45
 Lys Asn Leu Lys Arg Arg Val Tyr Ser Tyr Phe Ser Lys Glu His Gln
 50 55 60
 Pro Gly Lys Thr Arg Val Leu Val Ser Lys Ile Ala Asp Ile Arg Tyr
 65 70 75 80
 Ile Val Val Asn Ser Glu Glu Asp Ala Leu Leu Leu Glu Asn Asn Leu
 85 90 95
 Ile Lys Lys Tyr Lys Pro Arg Tyr Asn Val Leu Leu Lys Asp Asp Lys
 100 105 110
 Thr Tyr Pro Ser Ile Cys Val Gln Asn Glu Tyr Phe Pro Arg Val Phe
 115 120 125
 Lys Thr Arg Arg Ile Ile Arg Asn Gly Ser Ser Tyr Tyr Gly Pro Tyr
 130 135 140
 Ser His Ser Pro Ser Met His Ala Val Leu Asp Leu Ile Lys His Leu
 145 150 155 160
 Tyr Pro Leu Arg Thr Cys Asn Leu Asn Leu Ser Pro Glu Asn Ile Arg
 165 170 175
 Ala Gly Lys Phe Asn Val Cys Leu Glu Tyr His Ile Lys Asn Cys Ala
 180 185 190
 Gly Pro Cys Ile Gly Leu Gln Ser Gln Glu Glu Tyr Leu Lys Asn Ile
 195 200 205
 Ala Glu Ile Lys Glu Ile Leu Lys Gly Asn Thr Gln Glu Ile Ser Arg
 210 215 220
 Leu Leu Tyr Glu Arg Met Gln Asp Leu Ala Ala Glu Met Lys Phe Glu
 225 230 235 240
 Glu Ala Gln Lys Val Lys Glu Lys Tyr Ala Leu Ile Glu Asn Tyr Arg
 245 250 255
 Ser Lys Ser Glu Val Val Ser Ser Val Leu His Asn Ile Asp Val Phe
 260 265 270
 Ser Ile Glu Glu Asp Gly Glu Lys Ser Ala Phe Ile Asn Tyr Leu His
 275 280 285
 Ile Thr Asn Gly Ala Ile Asn Gln Ala Phe Thr Phe Glu Tyr Lys Lys
 290 295 300
 Lys Leu Asn Glu Thr Lys Glu Glu Leu Leu Thr Leu Gly Ile Ile Glu
 305 310 315 320
 Met Arg Glu Arg Tyr Lys Ser Ala Ser Arg Glu Ile Ile Val Pro Phe
 325 330 335
 Asp Ile Glu Ile Glu Leu Asn Asp Val Thr Phe Thr Ile Pro Gln Arg
 340 345 350

Gly Asp Lys Lys Lys Leu Leu Glu Leu Ser Leu Leu Asn Val Lys Gln
 355 360 365
 Tyr Lys Ala Asp Arg Met Lys Gln Ala Glu Lys Leu Asn Pro Glu Gln
 370 375 380
 Arg Ser Met Arg Leu Met Lys Glu Ile Gln Gln Glu Leu His Leu Asp
 385 390 395 400
 Arg Leu Pro Met Gln Ile Glu Cys Phe Asp Asn Ser Asn Ile Gln Gly
 405 410 415
 Thr Asp Ala Val Ala Ala Cys Val Val Phe Lys Lys Ala Lys Pro Ser
 420 425 430
 Lys Ser Asp Tyr Arg Lys Tyr Asn Ile Lys Thr Val Val Gly Ala Asp
 435 440 445
 Asp Tyr Ala Ser Met Lys Glu Val Val Arg Arg Arg Tyr Gln Arg Ala
 450 455 460
 Ile Glu Glu Glu Ser Pro Leu Pro Asp Leu Ile Ile Thr Asp Gly Gly
 465 470 475 480
 Lys Gly Gln Met Glu Val Val Arg Gln Val Met Glu Glu Leu Gln Leu
 485 490 495
 Asp Ile Pro Ile Ala Gly Leu Ala Lys Asp Arg Lys His Arg Thr Ser
 500 505 510
 Glu Val Leu Phe Gly Phe Pro Pro Gln Thr Ile Gly Ile Lys Gln His
 515 520 525
 Ser Pro Leu Phe Arg Leu Leu Glu Gln Ile Gln Asp Glu Val His Arg
 530 535 540
 Phe Ala Ile Thr Phe His Arg Asp Lys Arg Ser Lys Arg Gln Val Ala
 545 550 555 560
 Ser Ala Leu Asp Asn Ile Lys Gly Ile Gly Glu Lys Thr Lys Thr Ala
 565 570 575
 Leu Leu Lys Glu Phe Lys Ser Val Lys Arg Ile Lys Glu Ala Thr Ile
 580 585 590
 Glu Glu Val Ser Ala Ile Ile Gly Glu Ser Lys Ala Lys Ile Ile Lys
 595 600 605
 Glu Gly Leu Asp Asn His
 610

<210> 7740

<211> 288

<212> PRT

<213> B.fragilis

<400> 7740

Thr Arg Ile Pro Ile Thr Asn Leu Lys Gln Phe Met Asp Lys Glu Arg
 1 5 10 15
 Lys Pro His Lys His Thr Glu Ala Ala Thr Ser Ser Pro Leu Leu Ser
 20 25 30
 Ile Arg Gly Leu Ser Ala Ala Tyr Asp Gly Arg Thr Val Leu His Asp
 35 40 45
 Val Asp Leu Glu Val Tyr Glu His Asp Phe Leu Gly Ile Ile Gly Pro
 50 55 60
 Asn Gly Gly Gly Lys Thr Thr Leu Ile Lys Cys Ile Leu Gly Leu Leu
 65 70 75 80
 Arg Pro Thr Gly Gly Glu Ile Ile Lys Tyr His Glu Pro Leu Thr Thr
 85 90 95
 Gly Tyr Leu Pro Gln Tyr Asn Ser Ile Asp Arg Ser Phe Pro Ile Ser
 100 105 110
 Val Leu Glu Val Val Leu Ser Gly Leu Ser Ser Lys Lys Ser Leu Thr
 115 120 125
 Gly Arg Phe Asn Asp Arg His Arg Glu Lys Ala Arg Gln Val Ile His
 130 135 140

Arg Met Gly Leu Glu Gly Leu Glu His Arg Ala Ile Gly Gln Leu Ser
 145 150 155 160
 Gly Gly Gln Leu Gln Arg Ala Leu Leu Gly Arg Ala Ile Ile Ser Asp
 165 170 175
 Pro Gln Leu Leu Ile Leu Asp Glu Pro Ser Thr Tyr Ile Asp Lys Arg
 180 185 190
 Phe Glu Ala Arg Leu Tyr Gln Leu Leu Ala Glu Ile Asn Arg Asp Cys
 195 200 205
 Ala Ile Ile Leu Val Ser His Asp Ile Gly Thr Val Leu Gln Gln Val
 210 215 220
 Lys Asn Ile Ala Cys Val Asn Glu Thr Leu Asp Tyr His Pro Ala Ala
 225 230 235 240
 Ser Val Asn Thr Glu Trp Leu Glu Arg Asn Phe Asn Cys Pro Ile Glu
 245 250 255
 Leu Leu Gly His Gly Thr Leu Pro His Arg Val Leu Gly Glu His Cys
 260 265 270
 His Cys His Glu Lys Ser Ser Asp Thr Pro His Pro Gln Thr Asp Lys
 275 280 285

<210> 7741

<211> 530

<212> PRT

<213> B.fragilis

<400> 7741

Arg Asn Ser Pro Ile Ser Ile Trp Gly Ala Val Ser Thr Ile Val Arg
 1 5 10 15
 Lys His Cys Leu Met Ile Ser Gly Asn Thr Ile Asn His Lys Asn Asn
 20 25 30
 Met Ala Gly Leu Lys Ser Leu Val Lys Asp Thr Ala Leu Tyr Gly Leu
 35 40 45
 Ser Ser Met Val Gly Arg Phe Leu Asn Tyr Leu Leu Val Pro Leu Tyr
 50 55 60
 Thr Ala Val Leu Pro Ala Ala Ser Gly Gly Tyr Gly Val Val Thr Asn
 65 70 75 80
 Val Tyr Ala Trp Ala Gly Leu Ile Met Val Leu Leu Thr Phe Gly Met
 85 90 95
 Glu Thr Gly Phe Phe Arg Phe Ala Asn Lys Ser Glu Glu Asp Pro Val
 100 105 110
 Lys Val Tyr Ala Asn Ser Leu Ile Ser Val Gly Gly Ile Ser Leu Ile
 115 120 125
 Phe Ala Ile Leu Cys Leu Thr Phe Leu Gln Pro Val Ser His Leu Leu
 130 135 140
 Glu Tyr Gly Asp His Pro Asp Phe Ile Gly Met Met Ile Ile Val Met
 145 150 155 160
 Ala Leu Asp Ala Phe Leu Cys Ile Pro Phe Ala Tyr Leu Arg Phe Lys
 165 170 175
 Lys Arg Pro Ile Lys Phe Val Ala Ile Lys Phe Val Ser Ile Ile Ala
 180 185 190
 Asn Ile Val Leu Asn Leu Phe Phe Leu Leu Leu Cys Pro Trp Leu His
 195 200 205
 Glu His Phe Pro Ala Trp Val Asp Trp Phe Tyr Asn Pro Thr Tyr Leu
 210 215 220
 Val Gly Tyr Ile Phe Val Ser Asn Leu Ile Thr Thr Cys Leu Gln Leu
 225 230 235 240
 Phe Cys Leu Ile Pro Glu Leu Arg Gly Phe Ala Tyr Arg Val Asp Lys
 245 250 255
 Gln Leu Leu Lys Arg Met Leu Ile Tyr Ser Phe Pro Ile Leu Ile Phe
 260 265 270

Gly Leu Val Gly Ile Leu Asn Gln Thr Val Asp Lys Ile Ile Tyr Pro
 275 280 285
 Phe Leu Phe Ala Asp Arg Gln Glu Gly Leu Val Gln Leu Gly Ile Tyr
 290 295 300
 Gly Ala Ala Thr Lys Ile Ala Met Val Met Ala Met Phe Thr Gln Ala
 305 310 315 320
 Phe Arg Tyr Ala Tyr Glu Pro Phe Val Phe Gly Lys Gln Lys Glu Gly
 325 330 335
 Asp Asn Arg Arg Met Tyr Ala Gln Ala Met Lys Tyr Phe Leu Ile Phe
 340 345 350
 Ala Met Phe Ala Phe Leu Val Val Met Phe Tyr Leu Asp Leu Leu Arg
 355 360 365
 Tyr Met Val Ala Pro Asp Tyr Trp Ala Gly Leu Ser Val Val Ala Ile
 370 375 380
 Val Ile Gly Ala Glu Ile Phe Lys Gly Ile Tyr Phe Asn Leu Ser Phe
 385 390 395 400
 Trp Tyr Lys Leu Ile Asp Glu Thr Arg Trp Gly Ala Tyr Phe Ser Ile
 405 410 415
 Val Gly Cys Val Ile Ile Val Gly Met Asn Val Met Leu Val Pro Thr
 420 425 430
 Tyr Gly Phe Val Ala Ser Ala Trp Ala Ser Val Ala Gly Tyr Ala Val
 435 440 445
 Ile Thr Ile Leu Ser Tyr Trp Ile Gly Gln Lys Lys Tyr Pro Ile His
 450 455 460
 Tyr Asp Leu Lys His Leu Gly Thr Tyr Val Leu Phe Thr Ala Val Leu
 465 470 475 480
 Tyr Val Ile Gly Glu Trp Val Pro Ile Glu Asn Ile Val Leu Arg Leu
 485 490 495
 Ala Phe Arg Thr Val Leu Leu Leu Ile Phe Met Ala Tyr Val Val Arg
 500 505 510
 Lys Asp Leu Pro Leu Ser Gln Ile Pro Val Ile Asn Arg Ile Ile Lys
 515 520 525
 Lys Lys
 530

<210> 7742

<211> 451

<212> PRT

<213> B.fragilis

<400> 7742

Ile Ser Ile Ala Phe Ile Gly Ile Phe Glu Ser Thr Lys Leu Tyr Thr
 1 5 10 15
 Asp Lys Asn Ser Gln Lys Ser Arg Asn Glu Trp Lys His Ile Leu Asn
 20 25 30
 Phe Val Gly Lys Leu Thr Gly Ile Phe Met Val Leu Asn Tyr Ile Trp
 35 40 45
 Ile Ala Phe Phe Val Ile Ala Phe Val Val Ala Val Cys Lys Leu Leu
 50 55 60
 Phe Phe Gly Asp Thr Gln Ile Phe Thr Glu Ile Ile Asn Ser Thr Phe
 65 70 75 80
 Asp Ser Ser Lys Thr Ala Phe Glu Ile Ser Leu Gly Leu Thr Gly Val
 85 90 95
 Leu Ser Leu Trp Leu Gly Val Met Lys Ile Gly Glu Asn Ser Gly Leu
 100 105 110
 Ile Asn Ala Leu Ser Arg Trp Leu Ser Pro Val Phe Cys Arg Leu Phe
 115 120 125
 Pro Asp Ile Pro Lys Gly His Pro Val Met Gly Ser Ile Phe Met Asn
 130 135 140

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Met Ser Ala Asn Met Leu Gly Leu Asp Asn Ala Ala Thr Pro Met Gly
145          150          155          160
Leu Lys Ala Met Lys Glu Leu Gln Glu Leu Asn Pro Lys Lys Asp Thr
          165          170          175
Ala Ser Asn Pro Met Ile Met Phe Leu Val Ile Asn Thr Ser Gly Leu
          180          185          190
Ile Ile Ile Pro Ile Ser Ile Met Val Tyr Arg Ala Gln Met Gly Ala
          195          200          205
Ala Gln Pro Thr Asp Ile Phe Ile Pro Ile Leu Leu Ser Thr Phe Ile
          210          215          220
Ser Thr Leu Val Gly Val Ile Ala Val Ser Ile Ser Gln Arg Ile Asn
225          230          235          240
Leu Ile Asn Lys Ala Ile Leu Thr Leu Met Gly Cys Leu Ser Leu Phe
          245          250          255
Phe Gly Gly Ile Ile Tyr Leu Thr Thr Thr Leu Ser Arg Glu Glu Met
          260          265          270
Gly Val Tyr Ser Thr Leu Ile Ala Asn Val Ile Leu Phe Ser Val Ile
          275          280          285
Leu Leu Phe Ile Ile Ala Gly Ile Arg Lys Lys Ile Asn Val Tyr Asp
290          295          300
Ser Phe Val Glu Gly Ala Lys Glu Gly Phe Thr Thr Ala Val Arg Ile
305          310          315          320
Ile Pro Tyr Leu Val Ala Phe Leu Val Gly Ile Ala Val Phe Arg Thr
          325          330          335
Ser Gly Ala Met Asp Ile Leu Val Gly Gly Ile Gly Ala Ile Val Glu
          340          345          350
Phe Cys Gly Leu Asp Thr Gly Phe Val Gly Ala Leu Pro Thr Ala Leu
          355          360          365
Met Lys Ser Leu Ser Gly Ser Gly Ala Asn Gly Leu Met Ile Asp Thr
          370          375          380
Met Lys Gln Phe Gly Pro Asp Ser Phe Val Gly Arg Val Ser Cys Val
385          390          395          400
Val Arg Gly Ala Ser Asp Thr Thr Phe Tyr Ile Leu Ala Val Tyr Phe
          405          410          415
Gly Ser Val Gly Ile Thr Lys Thr Arg Asn Ala Val Thr Cys Gly Leu
          420          425          430
Ile Ala Asp Phe Ala Gly Ile Ile Ala Ala Ile Leu Ile Ser Tyr Leu
          435          440          445
Phe Phe Phe
          450

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<210> 7743

<211> 159

<212> PRT

<213> B.fragilis

<400> 7743

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Tyr Met Asp Ala Phe Ile Glu Thr Val Ser Gln Ile Leu Ile Asp Trp
1          5          10          15
Gly Tyr Pro Gly Leu Phe Ile Ser Ala Leu Leu Ala Gly Ser Ile Val
          20          25          30
Pro Phe Ser Ser Glu Ile Val Leu Leu Gly Leu Val Lys Leu Gly Leu
          35          40          45
Asp Pro Thr Leu Cys Leu Ile Ser Ala Ser Leu Gly Asn Thr Ala Gly
          50          55          60
Gly Met Thr Cys Tyr Tyr Met Gly Arg Leu Gly Arg Ile Asp Trp Ile
65          70          75          80
Glu Lys Tyr Phe Lys Val Lys Lys Glu Lys Ile Asp Lys Met Gln Arg
          85          90          95

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Phe Leu Gln Gly Lys Gly Ala Leu Met Ala Phe Phe Ala Phe Leu Pro
 100 105 110
 Ala Ile Gly Glu Val Ile Ser Ile Ala Leu Gly Tyr Met Arg Ser Asn
 115 120 125
 Val Trp Leu Thr Thr Ala Ser Met Phe Ala Gly Lys Leu Ile Arg Tyr
 130 135 140
 Ile Ile Leu Leu Lys Ala Met Gln Glu Ala Leu Asn Leu Val Met
 145 150 155

<210> 7744

<211> 408

<212> PRT

<213> B.fragilis

<400> 7744

Arg Arg Pro Ala Val Leu Leu Cys Leu Ala Cys Asn Glu Ala Gly Arg
 1 5 10 15
 Thr Val Ser Val Thr Val Ser Asn Ala Thr Ser Leu Glu Arg Ser Gly
 20 25 30
 Glu Met Val Glu Val Ser Met Gly Glu Val Ser Ser Lys Leu His Leu
 35 40 45
 Pro Asp Thr Ala Gln Ile Val Val Val Asp Ala Glu Gly Gln Gln Val
 50 55 60
 Pro Tyr Gln Ile Thr Ser Asp Glu Lys Val Ile Phe Pro Val Thr Val
 65 70 75 80
 Gln Ala Asn Gly Ser Ala Val Tyr Thr Ile Lys Ala Gly Ile Pro Gln
 85 90 95
 Glu Cys Pro Val Lys Ala Cys Gly Arg Tyr Tyr Pro Glu Arg Val Asp
 100 105 110
 Asp Val Ala Trp Glu Asn Asp Leu Thr Ala Phe Arg Ala Tyr Gly Pro
 115 120 125
 Ala Leu Gln Glu Thr Gly Glu Arg Ala Phe Gly Tyr Asp Ile Trp Thr
 130 135 140
 Lys Tyr Asn Thr Thr Glu Pro Val Val Glu Ala Arg Tyr Glu Gly Glu
 145 150 155 160
 Leu Asn Ser Asp Met Lys Ala Lys Ile Ala Glu Leu Gly Lys Thr Asp
 165 170 175
 Pro Lys Ala Ala Gln Glu Leu Tyr Arg Ser Val Ser Tyr His Val Asp
 180 185 190
 His Gly Asn Gly Leu Asp Cys Tyr Lys Val Gly Pro Thr Leu Gly Gly
 195 200 205
 Gly Thr Thr Ala Leu Met Ala Gly Asp Thr Ile Ile Tyr Pro Tyr Cys
 210 215 220
 Tyr Ala Thr Gln Glu Ile Leu Asp Asn Gly Pro Leu Arg Phe Thr Val
 225 230 235 240
 Lys Leu Val Tyr Asn Pro Leu Val Val Lys Gly Asp Ser Thr Ile Ile
 245 250 255
 Glu Thr Arg Ile Ile Thr Leu Asp Ala Gly Ser Tyr Cys Asn Lys Thr
 260 265 270
 Val Val Ser Tyr Thr Asn Leu Lys Glu Thr Met Pro Leu Ala Val Gly
 275 280 285
 Ile Val Leu His Glu Pro Asp Gly Ala Ile Val Ala Asp Ala Ala Asn
 290 295 300
 Gly Tyr Met Thr Tyr Val Asp Pro Thr Asp Asn Ala Gly Gly Asp Asn
 305 310 315 320
 Gly Lys Ile Phe Val Gly Ala Ala Phe Pro Thr Leu Val Lys Glu Ala
 325 330 335
 Lys Gly Val Leu Phe Pro Glu Lys Glu Lys Lys Glu Leu Arg Gly Gly
 340 345 350

4056 7744 408 PRT B.fragilis 7744

Ala Asp Gly His Val Leu Ala Ile Ser Glu Tyr Glu Pro Gly Ala Asp
 355 360 365
 Phe Thr Tyr Tyr Trp Gly Ala Ala Trp Ser Lys Ala Asp Ile Lys Asp
 370 375 380
 Ser Ala Ala Trp Asn Ala Tyr Met Ala Asp Phe Ala Gln Lys Val Arg
 385 390 395 400
 Asn Pro Leu Thr Val Thr Val Lys
 405

<210> 7745

<211> 253

<212> PRT

<213> B.fragilis

<400> 7745

Glu Ile Met Tyr Lys Val Ile Ile Ile Asp Asp Glu Lys Ala Ala Ile
 1 5 10 15
 Glu Thr Leu Arg Arg Asp Leu Glu Val Gln Ala Asp Leu Glu Ile Lys
 20 25 30
 Gly Thr Ala Gly Asn Gly Ala Lys Gly Lys Lys Leu Ile Met Asp Ile
 35 40 45
 His Pro Asp Leu Leu Phe Leu Asp Ile Glu Leu Pro Asp Ile Gln Gly
 50 55 60
 Ile Arg Leu Leu Ser Glu Ile Arg Glu Gln Val Leu Trp Asp Met Lys
 65 70 75 80
 Val Val Phe Tyr Thr Ala Tyr Asp Lys Tyr Leu Leu Gln Ala Leu Arg
 85 90 95
 Glu Ser Ala Phe Asp Tyr Leu Leu Lys Pro Tyr Asp Ile Glu Glu Leu
 100 105 110
 Asn Leu Ile Ile Glu Arg Tyr Arg Lys Thr Met Ala Ser Ala Arg Pro
 115 120 125
 Leu Pro Ser Phe Ala Ser Ala Val Gly Thr Leu Met Pro Gly Arg Asp
 130 135 140
 Leu Phe Met Ile Ser Thr Val Thr Gly Phe Arg Phe Leu Arg Leu Glu
 145 150 155 160
 Glu Ile Gly Tyr Phe Glu Tyr Leu Lys Asp Lys Arg Leu Trp Gln Val
 165 170 175
 Glu Leu Phe Asn Gln Thr Lys Leu Cys Leu Lys Lys Asn Thr Thr Ala
 180 185 190
 Gly Asp Ile Ile Gly Tyr Ser Asp Val Phe Val Gln Ile Ser Gln Ser
 195 200 205
 Ala Ile Ile Asn Ile Asn Tyr Leu Ala Met Ile Lys Ser Lys Gln Cys
 210 215 220
 Leu Leu Tyr Pro Pro Phe Ser Asp Lys Glu Asp Leu Ile Ile Ser Arg
 225 230 235 240
 Gly Phe Leu Lys Glu Leu Gln Glu Arg Phe Cys Ile Ile
 245 250

<210> 7746

<211> 245

<212> PRT

<213> B.fragilis

<400> 7746

Glu His Pro Tyr Lys Pro His Phe Thr Phe Cys Ser Ser Arg Pro Ala
 1 5 10 15
 Pro Gly Met His Leu Leu Tyr Ala Gly Asp Val Ala Ala Val Thr Phe
 20 25 30
 Leu Ile Ser Leu Tyr Phe Leu Phe Lys Ser Tyr Gln Gln Pro Arg Pro

```

      35              40              45
Ala Gly Tyr Leu Phe His Ser Phe Ala Leu Leu Ser Ala Gly Ser Val
 50              55              60
Ala Phe Pro Gln Leu Thr Tyr Phe Ile Pro Ile Trp Leu Met Gly Ala
65              70              75              80
Ser Gly Phe Gln Ser Leu Thr Phe Arg Ser Phe Cys Gly Ala Ile Ile
      85              90              95
Gly Trp Ser Ile Pro Tyr Trp Phe Leu Leu Gly His Ala Phe Phe His
      100              105              110
Asn Glu Ile Glu Leu Phe Tyr Gln Pro Phe Ile His Leu Ala Asp Phe
      115              120              125
Arg Asp Ile Asp Phe Gly Arg Asp Phe Gln Leu Trp Glu Val Val Thr
      130              135              140
Leu Gly Tyr Leu Phe Ile Leu Tyr Ile Val Ser Ser Ile His Cys Ile
      145              150              155              160
Val Ala Gly Tyr Glu Asp Lys Ile Arg Thr Arg Ala Tyr Leu His Phe
      165              170              175
Leu Ile Phe Leu Asn Phe Cys Ile Phe Leu Phe Ile Val Leu Gln Pro
      180              185              190
Ala Leu Ser Met Asn Leu Leu Ser Leu Leu Leu Ile Gly Ile Ser Ile
      195              200              205
Leu Val Gly His Leu Phe Val Leu Thr Asn Ser Lys Ser Ser Asn Leu
      210              215              220
Phe Phe Ile Gly Ser Met Ile Thr Leu Ile Ala Leu Phe Cys Phe Asn
      225              230              235              240
Ile Trp Thr Leu Leu
      245

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<210> 7747

<211> 1119

<212> PRT

<213> B.fragilis

<400> 7747

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Met Lys Gln Tyr Lys Thr Val Asn Asn Leu Val Gly Trp Ile Thr Phe
1              5              10              15
Leu Ile Ala Ala Thr Val Tyr Cys Met Thr Ile Glu Pro Thr Ala Ser
      20              25              30
Phe Trp Asp Cys Pro Glu Phe Ile Thr Thr Ala Tyr Lys Leu Glu Val
      35              40              45
Gly His Pro Pro Gly Ala Pro Phe Phe Met Leu Thr Ala Asn Leu Phe
      50              55              60
Thr Gln Phe Val Ser Asp Pro Ala Leu Val Ala Lys Met Val Asn Tyr
      65              70              75              80
Met Ser Ala Leu Met Ser Gly Ala Cys Ile Leu Phe Leu Phe Trp Ser
      85              90              95
Ile Thr His Leu Val Arg Lys Leu Val Ile Thr Asp Glu Thr Asn Ile
      100              105              110
Thr Arg Gly Gln Leu Ile Thr Val Met Gly Ser Gly Leu Val Gly Ala
      115              120              125
Leu Ala Tyr Thr Phe Ser Asp Thr Phe Trp Phe Ser Ala Val Glu Gly
      130              135              140
Glu Val Tyr Ala Tyr Ser Ser Met Phe Thr Ala Ile Val Phe Trp Leu
      145              150              155              160
Ile Leu Lys Trp Glu Asp Val Ala Asp Gln Pro His Ser Asp Arg Trp
      165              170              175
Ile Ile Leu Ile Ala Tyr Leu Thr Gly Leu Ser Ile Gly Val His Leu
      180              185              190
Leu Asn Leu Leu Cys Leu Pro Ala Ile Val Leu Val Tyr Tyr Tyr Lys

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		195					200					205				
Lys	Val	Pro	Gly	Ala	Asn	Ala	Lys	Gly	Ser	Leu	Leu	Ala	Leu	Ala	Gly	
	210					215					220					
Ser	Met	Val	Leu	Val	Ala	Ala	Val	Leu	Tyr	Gly	Ile	Val	Pro	Gly	Val	
225					230					235					240	
Val	Lys	Val	Gly	Gly	Trp	Phe	Glu	Leu	Leu	Phe	Val	Asn	Ser	Leu	Gly	
				245						250				255		
Met	Pro	Phe	Asn	Thr	Gly	Val	Ile	Val	Tyr	Val	Ala	Leu	Leu	Ala	Ala	
			260					265					270			
Ala	Ile	Ile	Trp	Gly	Ile	Tyr	Glu	Ser	Tyr	Asn	Glu	Lys	Ser	Arg	Thr	
		275					280					285				
Arg	Met	Asn	Leu	Ser	Phe	Leu	Leu	Thr	Ile	Ala	Met	Leu	Gly	Ile	Pro	
	290					295					300					
Phe	Tyr	Gly	His	Gly	Ala	Ser	Ala	Val	Ile	Ile	Gly	Ile	Leu	Val	Leu	
305					310					315					320	
Gly	Val	Leu	Ala	Ala	Tyr	Leu	Phe	Ala	Ser	Lys	Leu	Asn	Glu	Lys	Ile	
				325						330				335		
Arg	Met	Ser	Ala	Arg	Thr	Met	Asn	Thr	Ala	Leu	Leu	Cys	Thr	Met	Met	
			340					345					350			
Ile	Met	Val	Gly	Tyr	Ser	Ser	Tyr	Ala	Leu	Ile	Val	Ile	Arg	Ser	Val	
		355					360					365				
Ala	Asn	Thr	Pro	Met	Asp	Gln	Asn	Ser	Pro	Glu	Asp	Ile	Phe	Thr	Leu	
	370					375					380					
Gly	Glu	Tyr	Leu	Gly	Arg	Glu	Gln	Tyr	Gly	Thr	Arg	Pro	Leu	Phe	Tyr	
385					390					395					400	
Gly	Pro	Ala	Tyr	Ser	Ser	Lys	Val	Ala	Leu	Asp	Val	Glu	Asp	Gly	Tyr	
				405						410				415		
Cys	Val	Pro	Arg	Gln	Lys	Ser	Thr	Asp	Thr	Lys	Tyr	Val	Arg	Lys	Glu	
			420					425					430			
Lys	Thr	Ser	Pro	Asp	Glu	Lys	Asp	Ser	Tyr	Val	Glu	Leu	Pro	Gly	Arg	
		435					440					445				
Val	Glu	Tyr	Glu	Tyr	Ala	Gln	Asn	Met	Leu	Phe	Pro	Arg	Met	Tyr	Ser	
	450					455					460					
Ser	Ala	His	Thr	Ala	Tyr	Tyr	Lys	Ser	Trp	Gln	Asp	Ile	Thr	Gly	Tyr	
465					470					475					480	
Asp	Val	Pro	Tyr	Asp	Gln	Cys	Gly	Glu	Met	Leu	Met	Val	Asn	Met	Pro	
				485						490				495		
Thr	Gln	Trp	Asp	Asn	Ile	Lys	Phe	Phe	Phe	Ser	Tyr	Gln	Leu	Asn	Phe	
			500					505					510			
Met	Tyr	Trp	Arg	Tyr	Phe	Met	Trp	Asn	Phe	Ala	Gly	Arg	Gln	Asn	Asp	
		515					520					525				
Ile	Gln	Ser	Ser	Gly	Glu	Ile	Glu	His	Gly	Asn	Trp	Ile	Thr	Gly	Ile	
	530					535					540					
Pro	Phe	Ile	Asp	Asn	Leu	Leu	Tyr	Gly	Asp	Gln	Asn	Met	Leu	Pro	Gln	
545					550					555						

Ile Gln Met Ala Ser Gln Thr Trp Asp Asp His Asp Arg Ser Gly Arg
 675 680 685
 Tyr Val Ala Arg Asp Phe Gly Gln Asn Tyr Leu Met Ser Leu Gln Glu
 690 695 700
 Ser Gly Asn Pro Ile Ile Tyr Thr Asn Gly Asp Asn Asp Thr Phe Pro
 705 710 715 720
 Leu Trp Tyr Asn Gln Glu Thr Glu Ser Phe Arg Thr Asp Ala Arg Thr
 725 730 735
 Cys Asn Leu Ser Tyr Leu Gln Thr Asp Trp Tyr Ile Asp Gln Met Lys
 740 745 750
 Arg Pro Ala Tyr Asp Ser Pro Ala Leu Pro Ile Thr Trp Asp Arg Thr
 755 760 765
 Glu Tyr Met Glu Gly Gln Asn Glu Tyr Val Pro Ile Arg Pro Asp Phe
 770 775 780
 Lys Lys Gln Ile Asp Lys Ala Tyr Lys Ala Ala Glu Glu Glu Val Leu
 785 790 795 800
 Asn Gly Lys Asn Pro Glu Ala Leu Asn Asn Ile Arg Ala Gln Phe Gly
 805 810 815
 Asp Asn Pro Tyr Glu Leu Lys Asn Ile Leu Lys Tyr Trp Val Arg Thr
 820 825 830
 Lys Asp Gly Gln Ala Val Ile Pro Thr Asp Ser Ile Val Val Lys Ile
 835 840 845
 Asp Lys Glu Ala Val Arg Arg Ser Gly Met Met Ile Pro Glu Ala Leu
 850 855 860
 Gly Asp Ser Ile Pro Asp Tyr Met His Ile Ser Leu Lys Asp Glu Lys
 865 870 875 880
 Gly Asn Pro Lys Arg Ala Leu Tyr Lys Ser Glu Leu Met Met Leu Glu
 885 890 895
 Met Leu Ala Asn Ala Asn Trp Glu Arg Pro Ile Tyr Met Ala Ile Thr
 900 905 910
 Val Gly Thr Asp Asn Gln Leu Asn Met Arg Glu His Phe Ile Gln Glu
 915 920 925
 Gly Leu Thr Tyr Arg Phe Thr Pro Phe Asp Thr Glu Ala Leu Gly Ala
 930 935 940
 Thr Ile Asp Ser Glu Lys Met Tyr Asp Asn Leu Met Asn Lys Phe Lys
 945 950 955 960
 Phe Gly Gly Ile Asp Lys Pro Gly Ile Tyr Ile Asp Glu Asn Thr Met
 965 970 975
 Arg Met Cys Tyr Thr His Arg Arg Ile Phe Ala Gln Leu Ile Thr Gln
 980 985 990
 Leu Met Lys Glu Gly Lys Lys Asp Lys Ala Leu Ala Ala Leu Glu Tyr
 995 1000 1005
 Ala Glu Lys Met Ile Pro Ala Phe Asn Val Pro Tyr Asp Val Gln Asn
 1010 1015 1020
 Gly Ala Leu Glu Met Ala Glu Ala Tyr Tyr Gln Leu Gly Asn Asn Thr
 1025 1030 1035 1040
 Lys Ala Asp Gln Ile Ile Asp Glu Leu Ala Asn Lys Ser Val Glu Tyr
 1045 1050 1055
 Leu Thr Trp Tyr Leu Ser Leu Asp Asp Asn His Leu Leu Met Ser Gln
 1060 1065 1070
 Arg Glu Phe Ile Met His Leu Ser Ala Leu Asp Met Glu Val Lys Met
 1075 1080 1085
 Met Glu Lys Tyr Lys Ser Lys Leu Ala Gly Asn Tyr Thr Pro Lys Val
 1090 1095 1100
 Asn Glu Leu Tyr Asn Ile Tyr Val Gly Arg Met Lys Ala His Gln
 1105 1110 1115

<210> 7748

<211> 305

<212> PRT

<213> B.fragilis

<400> 7748

Ser Asp Ile His Ser Pro Arg Ile Tyr Glu Glu Gln Cys Met Ala Asp
 1 5 10 15
 His Gly Phe Asn Val Arg Arg Lys Thr Asp Thr Leu His His Pro Ala
 20 25 30
 Glu Ser His Ala Gly Ser Pro Glu Pro Gly Tyr Val Lys Lys Asn Met
 35 40 45
 Glu Arg Ile Ile Glu Tyr Thr Ala Asp Gly Ser Ala Thr Leu Phe Val
 50 55 60
 Pro Glu Leu Asn Glu His Tyr His Ser Val Lys Gly Ala Leu Thr Glu
 65 70 75 80
 Ser Ser His Ile Phe Ile Asp Met Gly Leu Lys Ala Ser Ala Ser Pro
 85 90 95
 Ala Pro His Ile Leu Glu Ile Gly Phe Gly Thr Gly Leu Asn Ala Leu
 100 105 110
 Leu Thr Leu Ile Glu Ala Glu Arg Ser Gly Arg Gln Ile His Tyr Thr
 115 120 125
 Gly Ile Glu Leu Tyr Pro Leu Pro Trp Glu Thr Val Glu Lys Leu Arg
 130 135 140
 Tyr Asn Asp Arg Pro Gly Gly Asp Gly Glu Gln Arg Leu Thr Thr Gly
 145 150 155 160
 Asp Glu Gln Ala Ala Gln Trp Met Lys Ala Leu His Thr Ser Pro Trp
 165 170 175
 Gly Glu Asp Val Arg Ile Thr Pro His Phe Thr Leu Arg Lys Ile Gln
 180 185 190
 Gly Asp Phe Thr Ile Met Asp Arg Ser Ser Leu Ile Thr Asp Arg Thr
 195 200 205
 Ser Leu Phe Ser Leu Leu Tyr Phe Asp Ala Phe Ala Pro Glu Lys Gln
 210 215 220
 Pro Glu Met Trp Thr Gln Glu Leu Phe Asp Glu Leu Tyr Val Met Met
 225 230 235 240
 Glu Glu Glu Gly Ile Leu Thr Thr Tyr Cys Ala Lys Gly Val Val Arg
 245 250 255
 Arg Met Leu Gln Ala Ala Gly Phe Ile Val Glu Arg Leu Pro Gly Pro
 260 265 270
 Pro Gly Gly Lys Arg Glu Ile Leu Arg Ala Lys Lys Arg Ser Gln Asp
 275 280 285
 Ser Pro Ala Val Thr Gln Cys Asn Ala Gln Pro Thr Leu Lys Gln Lys
 290 295 300
 Gly
 305

<210> 7749

<211> 323

<212> PRT

<213> B.fragilis

<400> 7749

Arg Ala Thr His Ile Lys Thr Glu Arg Ile Asn Ile Met Arg Met Asn
 1 5 10 15
 Arg Ile His Gln Ser Ile Val Thr His Ile Pro Gly Arg Gly Met Arg
 20 25 30
 Gly Gln Thr Val Leu Phe Leu Phe Leu Leu Leu Ser Ala Cys Ser
 35 40 45
 Gly Arg Gly Lys Gly Asp Ala Gly Glu Arg Ile Ile Thr Val Thr Met
 50 55 60

Glu Pro Gln Arg Tyr Phe Thr Glu Ala Ile Ala Gly Asp Lys Phe Thr
 65 70 75 80
 Val Arg Ser Met Val Pro Lys Gly Ser Ser Pro Glu Thr Tyr Asp Pro
 85 90 95
 Thr Pro Gln Gln Leu Val Ser Leu Gly Glu Ser Glu Ala Tyr Leu Arg
 100 105 110
 Ile Gly Tyr Ile Gly Phe Glu Arg Ser Trp Met Asp Arg Leu Met Asn
 115 120 125
 Asn Thr Pro His Ile Gln Val Phe Asp Thr Ser Thr Gly Val Asp Leu
 130 135 140
 Ile Phe Glu Ser Ala Phe Asp His Gly Asp His Arg His Glu Gly Gly
 145 150 155 160
 Val Glu Pro His Ile Trp Asn Ser Thr Ala Asn Ala Leu Ile Ile Ala
 165 170 175
 Gly Asn Thr Phe Lys Ala Leu Thr Val Leu Asp Lys Gly Asn Glu Ala
 180 185 190
 Tyr Tyr Lys Ala Arg Tyr Asp Ser Leu Cys Gln Arg Ile Glu Gln Thr
 195 200 205
 Asp Ser Leu Ile Arg Gln Thr Leu Ser Val Pro Gly Ala Asp Arg Ala
 210 215 220
 Phe Ile Ile Tyr His Pro Ala Leu Ser Tyr Phe Ala Arg Asp Tyr Gly
 225 230 235 240
 Leu His Gln Ile Ser Ile Glu Glu Gly Gly Lys Glu Pro Ser Pro Ala
 245 250 255
 His Leu Lys Gly Leu Met Asp Leu Cys Lys Lys Glu Gly Val Arg Val
 260 265 270
 Ile Phe Val Gln Pro Glu Phe Asp Arg Arg Asn Ala Glu Ile Ile Ala
 275 280 285
 Lys Gln Thr Gly Thr Arg Val Ile Ser Ile Asn Pro Leu Ser Tyr Asp
 290 295 300
 Trp Glu Glu Glu Met Leu Asn Val Ala Arg Ser Leu Arg Gly Glu Pro
 305 310 315 320
 Gly Tyr Gln

<210> 7750

<211> 243

<212> PRT

<213> B.fragilis

<400> 7750

Gln Arg Ile Lys Ile Asn Lys Ser Met Ala Glu Gln Ala Leu Phe Gln
 1 5 10 15
 Pro Phe Asn Arg Asn Gln Gln Arg Glu Asn Leu Glu Asn Thr Lys Glu
 20 25 30
 Thr Gly Leu Leu Ile Ser Leu Ile Pro Ser Leu Gln Glu Asp Phe Tyr
 35 40 45
 Val Asp Ser Leu Thr Thr Gly Ala Ser Lys Glu Thr Leu Ser Lys Leu
 50 55 60
 Leu Leu Arg Asn Pro Gly Ile Lys Asn Glu Thr Ala Val Ile Glu Met
 65 70 75 80
 Ile His Phe Leu His Asp Glu Gly Asp Arg Ile Ser Phe Ser Ile Leu
 85 90 95
 Leu Pro Phe Leu Val Ala Glu Tyr Asp Pro Lys Glu Leu Glu Lys
 100 105 110
 Ile Arg Glu Arg Phe Phe Gly Ile Glu Leu Phe Ile Arg Lys Cys Asn
 115 120 125
 Asn Leu His His Phe Ile Thr Cys Ile Lys Ala Asp Gln Thr Ile Lys
 130 135 140

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Ile Gly Glu Glu Glu Leu Lys Arg Gly Val Leu Ala Trp Asp Met Gly
145          150          155          160
Arg Met Val Cys Leu Thr Arg Ile Ala Tyr Asp Ala Gly Phe Ile Asp
          165          170          175
Glu Ser Leu Ala Trp Asn Tyr Ile Cys Ser Ala Gly Gln Gln Cys Ile
          180          185          190
Gln Ala Phe Asn Asp Trp Thr Glu Val Gly Lys Ser Phe Leu Leu Gly
          195          200          205
Gln Ala Met Glu Ala Thr Glu Lys Arg Lys Gln Glu Leu Tyr Ile Arg
          210          215          220
Leu Tyr Arg Gln Ala Thr Glu Asn Pro Asn Ser Pro Trp Lys Lys Arg
225          230          235          240
Thr Leu Lys

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<210> 7751

<211> 293

<212> PRT

<213> B.fragilis

<400> 7751

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Pro Asn Tyr Lys Glu Glu Ile Val Met Lys Ala Asp Asn Arg Asn Ile
1          5          10          15
Phe Ala Ile Lys Ala Phe Leu Arg Glu Tyr Leu Asp Leu Arg Lys Asp
          20          25          30
Lys Asp Asn Glu Leu Ala Thr Val Asp Ser Ile Arg Lys Gly Val Glu
          35          40          45
Phe Lys Gly Ala Asn Leu Trp Ile Leu Ile Phe Ala Ile Phe Met Ala
          50          55          60
Ser Leu Gly Leu Asn Val Asn Ser Thr Ala Val Ile Ile Gly Ala Met
65          70          75          80
Leu Ile Ser Pro Leu Met Gly Pro Ile Met Gly Ala Gly Leu Ser Val
          85          90          95
Gly Met Asn Asp Phe Glu Leu Met Lys Arg Ser Leu Lys Ser Phe Leu
          100          105          110
Ile Thr Thr Ala Phe Ser Val Thr Thr Ala Thr Val Phe Phe Leu Phe
          115          120          125
Thr Pro Ile Ala Glu Ala Gln Ser Glu Leu Leu Ala Arg Thr Ser Pro
          130          135          140
Thr Ile Tyr Asp Val Phe Ile Ala Leu Phe Gly Gly Leu Ala Gly Val
145          150          155          160
Val Ala Leu Ser Thr Lys Glu Lys Gly Asn Val Ile Pro Gly Val Ala
          165          170          175
Ile Ala Thr Ala Leu Met Pro Pro Leu Cys Thr Ala Gly Tyr Gly Leu
          180          185          190
Ala Ser Gly Asn Leu Ile Tyr Phe Leu Gly Ala Phe Tyr Leu Tyr Phe
          195          200          205
Ile Asn Ser Val Phe Ile Ser Leu Ala Thr Phe Ile Gly Val Arg Leu
          210          215          220
Met His Phe Gln Arg Lys Glu Phe Val Asp Lys Asn Arg Glu Lys Lys
225          230          235          240
Val Arg Lys Tyr Ile Val Leu Ile Val Ile Leu Thr Met Cys Pro Ala
          245          250          255
Ile Tyr Leu Thr Met Gly Ile Ile Arg Ser Thr Phe Phe Glu Ala Ala
          260          265          270
Ala Asn Arg Phe Val Ser Glu Gln Leu Asn Phe Asp Asn Thr Gln Val
          275          280          285
Leu Asn Lys Lys Ile
          290

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145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290

<210> 7752
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 7752

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Lys Ser Asn Asn Met Ala Ile Thr Tyr Gln Thr Glu Gly Ile Lys Met
1          5          10          15
Pro Asp Ile Lys Lys Arg Glu Thr Thr Glu Trp Ile Lys Ala Val Ala
          20          25          30
Ala Thr Tyr Glu Lys Arg Ile Gly Glu Ile Ala Tyr Ile Phe Cys Ser
          35          40          45
Asp Glu Lys Ile Leu Glu Val Asn Arg Gln Tyr Leu Gln His Asp Tyr
          50          55          60
Tyr Thr Asp Ile Ile Thr Phe Asp Tyr Cys Glu Gly Asn Arg Leu Ser
65          70          75          80
Gly Asp Leu Phe Ile Ser Leu Glu Thr Val Lys Thr Asn Ser Glu Gln
          85          90          95
Phe Asn Thr Pro Tyr Glu Glu Glu Leu His Arg Thr Ile Ile His Gly
          100          105          110
Ile Leu His Leu Cys Gly Ile Asn Asp Lys Gly Pro Gly Glu Arg Glu
          115          120          125
Ile Met Glu Ala Ala Glu Asn Lys Ala Leu Ala Met Arg Lys Gln
          130          135          140

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<210> 7753
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 7753

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Ile Met Ile Lys Gln Ile Met Lys Thr Asn Ser Lys Gln Lys Ser Ala
1          5          10          15
Leu Leu Val Met Leu Leu Ser Leu Leu Ile Pro Asn Ile Met Ala Gln
          20          25          30
Glu Pro Lys Ile Pro Thr Leu Glu Asp Leu Ile Pro Gly Gly Ala Thr
          35          40          45
Tyr Arg Ser Ala Glu Asn Ile Ser Gly Leu Gln Trp Trp Gly Asp Gln
          50          55          60
Cys Ile Lys Pro Gly Ile Glu Ala Val Phe Met Ile Asn Pro Lys Asn
65          70          75          80
Gly Lys Glu Thr Pro Leu Thr Thr Arg Asn Ile Val Asn Lys Ala Leu
          85          90          95
Glu Ala Gly Asn His Gly Lys Leu Gln His Phe Tyr Asn Ala Ser Phe
          100          105          110
Pro Trp Pro Lys Lys Thr Leu Cys
          115          120

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<210> 7754
 <211> 409
 <212> PRT
 <213> B.fragilis

<400> 7754

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Tyr Glu Met Lys Glu Ile Phe Lys Leu Ile Leu Leu Leu Val Ile Leu
1          5          10          15
Ser Gly Cys Ile Glu Asn Asp Glu Glu Ile Ile Leu Asn Asn Ser Asp
          20          25          30

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Leu Glu Asp Val Ser Glu Tyr Lys Arg Ala Glu Asp Leu Ile Cys Gln
 35 40 45
 Phe Ser Glu Arg Ile Asp Lys Glu Lys Gly Gly Thr Arg Ser Ser Thr
 50 55 60
 Ser Gln Ile Ile Leu Ser Leu Ala Gly Lys Lys Ser Val Val Ile Pro
 65 70 75 80
 Lys Ile Ala Thr Arg Thr Gly Glu Ile Ser Thr Asp Ser Val Asn Met
 85 90 95
 Phe Ile Phe Asp Thr Glu Lys Asp Gly Arg Phe Gly Phe Ala Ile Ala
 100 105 110
 Thr Gly Lys Ala Glu Val Gly Arg Val Tyr Ala Tyr Val Glu Asn Gly
 115 120 125
 Ile Leu Ser Asp Thr Ile Glu Asn Glu Gly Met Ala Tyr Leu Val Ser
 130 135 140
 Gln Ile Pro Asp Ile Ile Lys Gln Asp Gln Leu Asn Pro Asn Leu Thr
 145 150 155 160
 Arg Ser Gly Glu Gln Arg Thr Thr His Val Ser Ile Pro Leu Val Lys
 165 170 175
 Thr Glu Trp Asn Gln His Tyr Pro Tyr Asn Ala Gln Met Pro Thr Asn
 180 185 190
 Gly Lys Cys Ser Ile Ser Tyr Tyr Tyr Ala Gly Cys Ile Pro Ile Ala
 195 200 205
 Val Ala Gln Ala Ile Thr Tyr Tyr Arg Lys Cys Pro Val Ala Tyr Asp
 210 215 220
 Trp Asp Ala Phe Thr Val Asn Thr Gly Ile Tyr Asp Thr Asn Leu Ile
 225 230 235 240
 Ala Pro Val Ser Gln Phe Val Lys Lys Val Ala Asp Gly Ile Lys Val
 245 250 255
 Gly Tyr Lys Cys Asp Gly Thr Gly Ala Lys Asn Leu Gly Ser Thr Asn
 260 265 270
 Asp Phe Leu Lys Gly Trp Gly Tyr Asn Val Glu Arg His Lys Thr Asn
 275 280 285
 Asp Val Asp Lys Asn Leu Leu Tyr Lys Cys Leu Ile Thr Lys Asn Val
 290 295 300
 Val Ile Phe Gly Gly Lys Lys Lys Lys Ser Thr Gly His Val Trp Leu
 305 310 315 320
 Val Asp Gly Gly Val Phe Glu Tyr Ser Gly Asn Met Met Ile Gly Cys
 325 330 335
 Thr Asn Ile Gln Val Lys Ala Ile His Cys Asn Phe Gly Trp Asn Arg
 340 345 350
 Ala Asn Asn Gly Trp Tyr Ala Ile Lys Asp Gly Ala Tyr Asn Arg Pro
 355 360 365
 Ala Asn Ser Ala Ser Gln Asp Gly Asn Asn Pro Thr Asn Asp Lys Asn
 370 375 380
 Ser Pro Asn Gly Asn Phe Tyr Thr Glu Asn Asp Tyr Ile Tyr Phe His
 385 390 395 400
 Glu Ala Met Gly Thr Glu Ile Leu Trp
 405

<210> 7755

<211> 405

<212> PRT

<213> B.fragilis

<400> 7755

Phe Val His Leu Arg Gly Ile Val Thr Gly Glu Phe Arg Leu Ile Phe
 1 5 10 15
 Leu His His Phe Asp Phe His Ile Gln Cys Ala Glu Val His Asp Lys
 20 25 30

Phe Thr Leu Arg His Glu Gln Met Ile Val Val Gln Ala Glu Val Pro
 35 40 45
 Gly Glu Val Phe Tyr Arg Leu Val Cys Gln Phe Ile Asp Asn Leu Val
 50 55 60
 Gly Phe Arg Ile Val Ser Gln Leu Val Val Ser Phe Cys His Phe Glu
 65 70 75 80
 Cys Ser Val Leu Tyr Ile Val Gly His Val Glu Ser Arg Asn His Leu
 85 90 95
 Phe Gly Val Phe Gln Cys Cys Gln Arg Phe Val Leu Phe Ala Phe Phe
 100 105 110
 His Gln Leu Gly Asp Gln Leu Gly Lys Asp Ala Ala Met Gly Val Ala
 115 120 125
 His Ala His Arg Ile Leu Val Asp Val Asp Ala Gly Phe Val Asp Ala
 130 135 140
 Ser Glu Leu Glu Leu Val His Gln Val Val Ile His Leu Phe Thr Val
 145 150 155 160
 Asp Gly Gly Ser Glu Ser Phe Arg Ile Glu Arg Cys Glu Ala Val Cys
 165 170 175
 Gln Thr Leu Leu Asn Glu Met Leu Ala His Val Gln Leu Ile Val Arg
 180 185 190
 Thr Asp Gly Asp Gly His Val Asn Gly Ala Phe Pro Val Gly Ile Gly
 195 200 205
 Gln His Phe Glu His His Gln Leu Ala Leu Val Glu Ser Pro Phe Arg
 210 215 220
 Val Thr Leu Phe Val Phe Glu Arg Tyr Val His Val Val Gly Asp Gly
 225 230 235 240
 Val Thr Gln Cys Leu Arg Asn His His Thr Arg Thr Ala Asn Gly Phe
 245 250 255
 Phe Val Asp Phe Asp Asn Asp Ala Val Gly Arg Tyr His Cys Leu Ser
 260 265 270
 Val Phe Gly Ala Tyr Pro Ile Phe Gln Asp Val Leu Gln Leu Val Arg
 275 280 285
 Ile Ile Ala Glu Leu Gly Thr Asp Val Val Gln Cys Phe Arg Ile Leu
 290 295 300
 Ala Val Gln His Leu Phe Phe Gly Gly Phe Val Gly Phe Val Asp Leu
 305 310 315 320
 Leu Leu Glu Val Arg Thr Asp Gly Asp Val Phe Val Leu Thr Phe His
 325 330 335
 Val Phe Arg Ser Val Pro Ser Asp Gly Gln Cys Arg Arg Val Val Gly
 340 345 350
 Arg Thr Phe His Leu Val Asp Val Pro Val Gly Leu Glu Val Ala Gln
 355 360 365
 Val Thr Gly Thr Cys Val Gly Ala Glu Ala Phe Gly Phe Leu Val Val
 370 375 380
 Pro Gln Arg Glu Gly Ile Val Ile Thr Val Gly Ile Asp Asp Arg Val
 385 390 395 400
 Ala Ala Phe Leu Lys
 405

<210> 7756

<211> 140

<212> PRT

<213> B.fragilis

<400> 7756

Gln Phe Lys Asp Leu Lys Thr Asp Ile Met Lys Thr Thr Gly Phe Leu
 1 5 10 15
 Lys Thr Val Ala Leu Ser Ala Val Leu Leu Val Ser Ser Val Ala Val
 20 25 30

Ser Ala Arg Asn Tyr Asp Asn Asn Leu Ile Tyr Asn Ser Glu Glu Glu
 35 40 45
 Asn Gly Met Leu Ile Gly Gln Thr Val Tyr Lys Lys Glu Gly Ser Ser
 50 55 60
 Leu Ala Asn Tyr Met Lys Tyr Asn Tyr Lys Tyr Asp Asp Asn Lys Arg
 65 70 75 80
 Met Ile Glu Ser Gln Thr Met Lys Trp Asn Ser Tyr Lys Asn Asn Trp
 85 90 95
 Glu Asn Asp Leu Leu Val Arg Tyr Thr Tyr Glu Gly Lys Thr Ile Thr
 100 105 110
 Thr Asn Tyr Tyr Lys Trp Asn Asn Arg Lys Ser Glu Phe Ile Leu Ala
 115 120 125
 Pro Glu Met Thr Val Thr Met Asp Asn Pro Asn Leu
 130 135 140

<210> 7757

<211> 302

<212> PRT

<213> B.fragilis

<400> 7757

Val Asn Met Glu Met Asn Asp Thr Pro Gln Asp Lys Tyr Leu Thr Ala
 1 5 10 15
 Leu Ala Lys Tyr Asp Thr Gln Leu Asn Asp Ala Asp Val Gln Val Gln
 20 25 30
 Val Ala Ala Leu Ile Glu Lys Lys Val Pro Glu Asn Asn Thr Glu Glu
 35 40 45
 Val Lys Lys Phe Leu Phe Asn Cys Ile Asp Leu Thr Thr Leu Asn Thr
 50 55 60
 Thr Asp Ser Asp Glu Ser Val Met Arg Phe Thr Glu Lys Val Asn Arg
 65 70 75 80
 Phe Asp Asp Glu Phe Pro Asp Leu Lys Asn Val Ala Ala Ile Cys Val
 85 90 95
 Tyr Pro Asn Phe Ala Gln Val Val Lys Asp Thr Leu Glu Val Glu Gly
 100 105 110
 Ile Asn Ile Ala Cys Val Ser Gly Gly Phe Pro Ser Ser Gln Thr Phe
 115 120 125
 Thr Glu Val Lys Ile Ala Glu Thr Ala Met Ala Leu Ala Asp Gly Ala
 130 135 140
 Asp Glu Ile Asp Ile Val Ile Pro Val Gly Ala Phe Leu Ser Gly Asp
 145 150 155 160
 Tyr Glu Thr Met Cys Glu Glu Ile Met Glu Leu Lys Glu Thr Cys Lys
 165 170 175
 Glu His His Leu Lys Val Ile Leu Glu Thr Gly Ala Leu Lys Thr Ala
 180 185 190
 Ser Asn Ile Lys Lys Ala Ser Ile Leu Ser Met Tyr Ser Gly Ala Asp
 195 200 205
 Phe Ile Lys Thr Ser Thr Gly Lys Gln Gln Pro Ala Ala Thr Pro Glu
 210 215 220
 Ala Ala Tyr Val Met Cys Gln Ala Ile Lys Glu Tyr Tyr Glu Gln Thr
 225 230 235 240
 Gly Asn Lys Val Gly Phe Lys Pro Ala Gly Gly Ile Asn Thr Val Asn
 245 250 255
 Asp Ala Leu Ile Tyr Tyr Thr Ile Val Lys Glu Val Leu Gly Lys Glu
 260 265 270
 Trp Leu Ser Asn Glu Leu Phe Arg Leu Gly Thr Ser Arg Leu Ala Asn
 275 280 285
 Leu Leu Leu Ser Glu Ile Lys Gly Glu Glu Leu Lys Phe Phe
 290 295 300

<210> 7758
 <211> 627
 <212> PRT
 <213> B.fragilis

<400> 7758

Thr	Arg	Arg	Trp	Lys	Pro	Glu	Ile	Thr	Val	Ser	Cys	Asn	Thr	Ser	Thr
1				5					10					15	
Met	Pro	Val	Ser	His	Gly	Gln	Arg	Lys	Pro	Tyr	Ala	Asp	Arg	Pro	Ala
			20					25					30		
Asp	Lys	Tyr	Ile	Val	Tyr	Asp	Phe	Asp	Tyr	Arg	Glu	Val	Ile	Ser	Thr
		35					40					45			
Arg	Pro	Leu	Pro	Lys	Glu	Gly	Ala	Asn	Arg	Asp	Tyr	His	Pro	Glu	Thr
		50				55					60				
Gly	His	Val	Ala	Tyr	Thr	Ile	Gly	Asn	Asn	Leu	Tyr	Val	Asp	Asp	Arg
65					70					75					80
Ala	Val	Thr	Asn	Glu	Pro	Glu	Gly	Ile	Val	Cys	Gly	Gln	Ser	Val	His
			85						90					95	
Arg	Asn	Glu	Phe	Gly	Ile	Lys	Lys	Gly	Thr	Phe	Trp	Ser	Pro	Ser	Gly
			100					105					110		
Asn	Leu	Leu	Ala	Phe	Tyr	Arg	Met	Asp	Gln	Ser	Met	Val	Ala	Gln	Tyr
		115					120					125			
Pro	Leu	Val	Asp	Val	Thr	Ala	Pro	Ile	Ala	Glu	Val	Asn	Asn	Ile	Arg
	130					135					140				
Tyr	Pro	Met	Ala	Gly	Met	Thr	Ser	His	Gln	Val	Lys	Val	Gly	Ile	Tyr
145					150						155				160
Asn	Pro	Ala	Thr	Gly	Lys	Ser	Ile	Tyr	Leu	Asn	Ala	Gly	Asp	Pro	Thr
				165					170					175	
Asp	Arg	Tyr	Phe	Thr	Asn	Ile	Ser	Trp	Ala	Pro	Asp	Glu	Lys	Ser	Leu
			180					185				190			
Tyr	Leu	Ile	Glu	Leu	Asn	Arg	Asp	Gln	Asn	His	Ala	Lys	Leu	Cys	Arg
		195					200					205			
Tyr	Asp	Val	Glu	Thr	Gly	Glu	Leu	Thr	Ala	Thr	Leu	Phe	Glu	Glu	Lys
	210					215					220				
Ser	Asp	Lys	Tyr	Val	Glu	Pro	Gln	Asp	Pro	Ile	Ile	Phe	Leu	Pro	Trp
225					230				235						240
Asp	Asn	Ser	Lys	Phe	Ile	Tyr	Gln	Ser	Gln	Lys	Asp	Gly	Phe	Ser	His
				245					250					255	
Leu	Tyr	Leu	Tyr	Asp	Thr	Asn	Gly	Arg	Gln	Ile	Arg	Gln	Leu	Thr	Glu
		260					265						270		
Gly	Asp	Trp	Leu	Val	Lys	Glu	Val	Leu	Gly	Phe	Asp	Thr	Lys	Lys	Lys
		275					280					285			
Glu	Ile	Ile	Ile	Ala	Ser	Thr	Glu	Phe	Ser	Pro	Leu	Gln	Asn	Asn	Leu
	290					295					300				
Phe	Arg	Leu	Asp	Thr	Lys	Thr	Gly	Thr	Arg	Thr	Pro	Leu	Gly	Ser	Ala
305					310					315					320
Glu	Gly	Val	His	Ser	Gly	Gln	Leu	Ser	Pro	Ser	Gly	Arg	Tyr	Leu	Ile
				325					330					335	
Asp	Gln	Tyr	Asn	Ser	Pro	Thr	Val	Pro	Arg	Ser	Ile	Asn	Ile	Ile	Asp
			340					345					350		
Val	Gln	Ser	Gly	Lys	Ser	Val	Asn	Leu	Leu	Thr	Ala	Ala	Asp	Pro	Phe
		355					360					365			
Thr	Gly	Tyr	Lys	Met	Pro	Gly	Ile	Glu	Thr	Gly	Thr	Ile	Lys	Ala	Ala
	370					375					380				
Asp	Gly	Lys	Thr	Asp	Leu	Tyr	Tyr	Arg	Leu	Ile	Lys	Pro	Ala	Asp	Phe
385					390					395					400
Asp	Pro	Asn	Lys	Lys	Tyr	Pro	Ala	Ile	Val	Tyr	Val	Tyr	Gly	Gly	Pro
				405					410					415	

4068 7758 627 PRT B.fragilis

His Ala Gln Leu Val Thr Asn Gly Trp Gln Asn Gly Ala Arg Gly Trp
 420 425 430
 Asp Ile Tyr Met Ala Asn Lys Gly Tyr Ile Met Phe Thr Val Asp Gly
 435 440 445
 Arg Gly Ser Ser Asn Arg Gly Leu Asp Phe Glu Asn Val Thr Phe Arg
 450 455 460
 Gln Leu Gly Ile Glu Glu Gly Arg Asp Gln Val Lys Gly Thr Glu Phe
 465 470 475 480
 Leu Lys Ser Leu Pro Tyr Val Asp Gly Asn Arg Ile Gly Val His Gly
 485 490 495
 Trp Ser Phe Gly Gly His Met Thr Thr Ala Leu Leu Leu Arg Tyr Pro
 500 505 510
 Glu Ile Phe Lys Val Gly Val Ala Gly Gly Pro Val Ile Asp Trp Gly
 515 520 525
 Tyr Tyr Glu Val Met Tyr Gly Glu Arg Tyr Met Asp Thr Pro Gln Ser
 530 535 540
 Asn Pro Lys Gly Tyr Lys Glu Cys Asn Leu Lys Asn Leu Ala Gly Asn
 545 550 555 560
 Leu Lys Gly His Leu Met Ile Ile His Asp Asp His Asp Asp Thr Cys
 565 570 575
 Val Pro Gln His Thr Leu Ser Phe Met Lys Ala Cys Ile Asp Ala Arg
 580 585 590
 Thr Tyr Pro Asp Leu Phe Ile Tyr Pro Cys His Lys His Asn Val Ser
 595 600 605
 Gly Arg Asp Arg Val His Leu His Glu Lys Ile Thr Arg Tyr Phe Glu
 610 615 620
 Asp Tyr Leu
 625

<210> 7759

<211> 132

<212> PRT

<213> B.fragilis

<400> 7759

Lys Lys Lys Cys Gly Asn Phe Ala Phe Glu Ile Lys Lys His Ile Thr
 1 5 10 15
 Met Lys Thr Lys Met Ile Val Leu Val Gly Met Leu Phe Thr Gln Ile
 20 25 30
 Val Phe Thr Ser Asn Asn Val Tyr Gly Glu Asp Val Met Ala Ile Met
 35 40 45
 Lys Asp Arg His Lys Val His Leu Ile Thr His Lys Glu Ala Asn Leu
 50 55 60
 Gln Arg Ser Thr Leu Leu Val Ala Cys Gly Tyr Ile Glu Glu Ser Gln
 65 70 75 80
 Leu Phe Leu Asn Phe Asn Ser Ser Leu Glu Asn Arg Lys Ile Gln Val
 85 90 95
 Val Asp Ser Glu Thr Gly Gln Thr Val Phe Asp Asp Thr Ile Thr Gly
 100 105 110
 Thr Ser Phe Ser Ile Phe Leu Glu Arg Asp Ser Asp Ser Phe Asp Ile
 115 120 125
 Tyr Ile Gly Arg
 130

<210> 7760

<211> 151

<212> PRT

<213> B.fragilis

<400> 7760

Phe Glu Leu Cys Ile Arg Glu Arg Ser Glu Asn Arg Arg Ile Arg Ser
 1 5 10 15
 Arg His Glu Ser Arg Val Ile Glu Arg Arg Thr Cys Asn Tyr Leu His
 20 25 30
 Arg Tyr Gln Lys Gln Gly Ile Met Thr Leu Glu Glu Ala Gln Lys Ala
 35 40 45
 Val Asp Glu Trp Ile His Lys Tyr Gly Val Arg Tyr Phe Ser Glu Leu
 50 55 60
 Thr Asn Met Ala Val Leu Thr Glu Glu Val Gly Glu Leu Ala Arg Ile
 65 70 75 80
 Met Ala Arg Lys Tyr Gly Asp Gln Ser Phe Lys Glu Gly Glu Lys Asp
 85 90 95
 Asp Ile Ser Asp Glu Ile Thr Asp Val Leu Trp Val Leu Leu Cys Ile
 100 105 110
 Ala Asn Gln Thr Gly Val Asn Leu Thr Glu Ala Phe Ala Arg Asn Leu
 115 120 125
 Glu Lys Lys Thr Gln Arg Asp Asn Lys Arg His Ile Asn Asn Pro Lys
 130 135 140
 Leu Ser Glu His Gly Asn Glu
 145 150

<210> 7761

<211> 377

<212> PRT

<213> B.fragilis

<400> 7761

Val Arg Lys Cys Phe Ala Pro Ser Phe Leu Trp Phe Leu Phe Ile Gly
 1 5 10 15
 Leu Gly Met Gly Cys Val Gly Thr Leu Leu Val Ala Met Thr Met Leu
 20 25 30
 Ala Gln His Pro Val Arg Gln Cys Ala Val Ser Gln Gln Leu Asp Arg
 35 40 45
 Ala Val Glu Val Pro Phe Gln Pro Phe Gly Val Asp Ala Cys Gly Arg
 50 55 60
 Val Ile Val Gln Cys Phe Val His Ala Gly Asp Val Leu Tyr Leu Leu
 65 70 75 80
 Gln His Arg Pro Asp Val Met Ala Asp Glu Asp Asp Gly Ala Val Ala
 85 90 95
 Val Asp Leu Arg Gln Gln Leu Val Glu Ala Gly Phe Glu Ala Leu Val
 100 105 110
 Asp Val Gly Ala Arg Leu Val Glu Asn Lys Gln Leu Arg Val Ala Asp
 115 120 125
 Asp Gly Ser Ser Gln Gln Gly Ala Leu Gln Leu Ser Ala Ala Gln Leu
 130 135 140
 Ser Asp Gly Pro Val Phe Lys Ser Leu Glu Ser His Ala Val Asp His
 145 150 155 160
 Leu Ser Gly Phe Leu Ala Val Thr Val Ile Glu Thr Ala Gly Gln Arg
 165 170 175
 Leu Leu Gly Ala Glu Ser Arg Glu Asp Tyr Leu Glu Asn Arg Asp Gly
 180 185 190
 Glu Gly Ala Val Asp Arg Val Val Leu Arg Glu Ile Ala Arg Arg Glu
 195 200 205
 Trp Phe Val Ile Phe Asp Asp Phe Ser Ser Cys Gly Ala Lys Gln Ser
 210 215 220
 Gln Asn Ala Phe Asp Lys Ser Cys Leu Ala Ser Ala Val Gly Pro Asp
 225 230 235 240
 Asp Ala Glu Glu Ile Val Leu Val Asp Leu Gln Ile Asp Ile Val Glu

				245					250					255			
His	Arg	Ala	Ser	Val	Ile	Gly	Gly	Gly	Glu	Ser	Ser	Asp	Gly	Glu	Glu		
			260						265				270				
Gly	Gly	Gly	Ser	Arg	Cys	Phe	Arg	Met	Leu	Val	Gly	Phe	Ser	Phe	Phe		
		275					280					285					
Ile	His	Glu	Leu	Leu	Glu	Val	Gly	Tyr	Trp	Tyr	Pro	Gly	Ser	Pro	Arg		
	290					295					300						
Arg	Leu	Leu	Ala	Thr	Phe	Ser	Ile	Ser	Ser	Ser	Gln	Ser	Tyr	Glu	Arg		
305				310						315					320		
Gly	Leu	Met	Glu	Ile	Thr	Arg	Val	Pro	Val	Cys	Phe	Ala	Met	Ile	Ser		
			325					330					335				
Ala	Phe	Arg	Arg	Ser	Asn	Ser	Gly	Trp	Thr	Lys	Met	Thr	Arg	Thr	Pro		
		340					345					350					
Ser	Phe	Leu	Gln	Arg	Ser	Ile	Ser	Pro	Phe	Arg	Trp	Ala	Gly	Asp	Gly		
	355					360					365						
Ser	Leu	Pro	Pro	Ser	Ser	Ile	Leu	Ile									
	370					375											

<210> 7762

<211> 304

<212> PRT

<213> B.fragilis

<400> 7762

Asn	Ile	Asn	Arg	Leu	Lys	Arg	Ile	Thr	Glu	Ser	Met	Lys	Ile	Val	Ile		
1				5					10					15			
Lys	Glu	Lys	Val	Ile	Pro	Tyr	Ile	Leu	Ile	Ser	Leu	Phe	Ser	Phe	Ile		
			20					25				30					
Gly	Leu	Ser	Ala	Tyr	Gly	Tyr	Lys	Ala	Glu	Gly	Gln	Gly	Gly	Ser	Lys		
	35					40					45						
Ala	Val	Val	Trp	Ser	Ile	Ser	Lys	Ile	Asp	Thr	Met	Gln	Lys	Asn	Val		
	50					55				60							
Gln	Arg	Asn	Asp	Glu	Arg	Asn	Pro	Asn	Ile	Gln	Asn	Ile	Glu	Tyr	Leu		
65				70					75					80			
Lys	Lys	Met	Phe	Arg	Gln	Lys	Ala	Val	Asp	Glu	Ile	Ser	Glu	Asn	Ile		
			85					90					95				
Val	Tyr	Pro	Leu	Lys	Arg	Thr	Ser	Pro	Ile	Pro	Ser	Val	Glu	Asn	Ala		
		100						105					110				
Glu	Glu	Leu	Lys	Glu	Arg	Phe	Asp	Ser	Ile	Phe	Asp	Glu	Asp	Leu	Ile		
	115					120					125						
Arg	Ile	Ile	Thr	Ser	Ser	Asp	Ile	Asp	Gln	Trp	Ser	Glu	Met	Gly	Trp		
	130					135				140							
Arg	Gly	Ile	Met	Leu	Asp	Asp	Gly	Ile	Leu	Trp	Met	Asp	Tyr	Asp	Gly		
145				150					155					160			
Lys	Ile	Thr	Ala	Val	Asn	Tyr	Gln	Ser	Lys	Tyr	Glu	Lys	Lys	Leu	Ala		
			165					170						175			
Lys	Lys	Leu	Thr	Ser	Lys	Val	Lys	Gly	Asp	Leu	Ser	Ser	Asp	Leu	Arg		
		180					185						190				
His	Asn	Phe	Lys	Gly	Glu	Val	Tyr	Lys	Phe	Lys	Thr	Lys	Asn	Tyr	Phe		
	195					200						205					
Ile	Arg	Ile	Asp	Glu	Leu	Lys	Asn	Gly	Met	Tyr	Arg	Tyr	Ala	Cys	Trp		
	210					215					220						
Lys	Lys	Glu	Asn	Pro	Glu	Ser	Thr	Lys	Pro	Asp	Leu	Val	Leu	Glu	Asn		
225				230						235					240		
Gly	Lys	Ile	Glu	Phe	Ser	Gly	Ser	Gly	Gly	Asn	His	Val	Ile	Thr	Phe		
			245					250					255				
Lys	Asn	Asn	Ile	Tyr	Glu	Tyr	Lys	Val	Phe	His	Asn	Lys	Ile	Ala	Ala		
	260						265						270				
Ser	Gly	Ile	Ala	Asp	Ile	Thr	Leu	Val	Val	Glu	Lys	Asn	Gly	Lys	Glu		

275	280	285
Ile Leu Ser Glu Asp Gly Lys	Leu Glu Asp Asp	Ile Thr Gln Thr Asp
290	295	300

<210> 7763

<211> 544

<212> PRT

<213> B.fragilis

<400> 7763

Tyr Met Asn Arg Thr Phe Ile Met Arg Glu Cys Leu Gly Lys Ala Leu	
1	5 10 15
Trp Leu Cys Phe Cys Leu Ser Ile Thr Gly Cys Ala Glu Asp Asp Arg	
	20 25 30
Met Thr Pro Leu Ser Ala Asp Ser Gly Asp Thr Ala Asp Glu Leu Ile	
	35 40 45
Pro Ile His Ile Ser Leu Thr Gly Asp Asn Asp Tyr His Ser Ser Ser	
	50 55 60
Phe Asn Asp Ala Ser Thr Arg Ser His Ser Pro Leu Ile Ala Glu Trp	
65	70 75 80
Val Gly Val Lys Ala Phe Ser Pro Thr Arg Thr Gly Glu Gln Pro Asp	
	85 90 95
Tyr Asp Gly Pro Arg Ile Ala Ser Met Glu Leu Thr Glu Asp Thr Leu	
	100 105 110
Pro Arg Val Ser Thr Arg Ala Thr Val Pro Ala Gly Val Tyr Phe Arg	
	115 120 125
Leu Ile Val Phe Arg Lys Ser Gly Ser Glu Tyr Val Phe Gln Ser Ala	
	130 135 140
Ala Asp Tyr Thr Ser Asn Gly Thr Gly Thr Pro Val Leu Lys Gln Gly	
145	150 155 160
Arg Leu Leu Thr Arg Ser Gly Thr Ile Arg Val Val Gly Tyr Ser Phe	
	165 170 175
Asn Thr Thr Thr Ala Ala Asp Leu Gly Thr Met Pro Ser Thr Tyr Ala	
	180 185 190
Tyr Asn Ser Ser Thr Val Ser Ile Pro Asn Met Ser Lys Asp Phe Met	
	195 200 205
Thr Phe Asp Ser Gly Asp Ile Thr Asn Val Asn Ser Leu Ser His Asn	
	210 215 220
Leu Pro Val Ser Phe Asn Gln Lys Leu Cys Lys Leu Thr Ile Thr Ile	
225	230 235 240
Ser Pro Thr Gly Phe Pro Ser Asn Thr Ile Thr Asn Cys Thr Gly Val	
	245 250 255
Tyr Val Lys Gln Gly Gly Asn Ser Thr Ser Trp Lys Ile Gly Pro Ser	
	260 265 270
Thr Asn Val Val Ala Ala Asn Thr Asn Asn Thr Ala Ala Phe Ser Pro	
	275 280 285
Lys Thr Thr Leu Ser Thr Thr Ile Arg Met Val Pro Phe Ala Gly Ala	
	290 295 300
Arg Thr Ile Thr Val His Phe Asn Thr Leu Thr Ile Ser Gly Arg Thr	
305	310 315 320
Val Pro Asn Asn Thr Glu Ile Thr Ser Thr Gln Ser Val Gln Leu Lys	
	325 330 335
Glu Gly Lys Ser Tyr Thr Met Lys Ile Gln Phe Lys Lys Ala Ile Gly	
	340 345 350
Ile Asn Val Pro Ala Ser Asn Ile Asn Leu Thr Gln Asn Gly Cys Thr	
	355 360 365
Glu Asn Asp Lys Thr Ile Leu Ser Lys Leu Arg Trp Ala Glu Gly Asn	
	370 375 380
Leu Asn Ser Gln Ser Asn Tyr Asn Leu Thr Trp Ala Ser Ser Thr Thr	

4072 7763 544 PRT B.fragilis
 Tyr Met Asn Arg Thr Phe Ile Met Arg Glu Cys Leu Gly Lys Ala Leu
 1 5 10 15
 Trp Leu Cys Phe Cys Leu Ser Ile Thr Gly Cys Ala Glu Asp Asp Arg
 20 25 30
 Met Thr Pro Leu Ser Ala Asp Ser Gly Asp Thr Ala Asp Glu Leu Ile
 35 40 45
 Pro Ile His Ile Ser Leu Thr Gly Asp Asn Asp Tyr His Ser Ser Ser
 50 55 60
 Phe Asn Asp Ala Ser Thr Arg Ser His Ser Pro Leu Ile Ala Glu Trp
 65 70 75 80
 Val Gly Val Lys Ala Phe Ser Pro Thr Arg Thr Gly Glu Gln Pro Asp
 85 90 95
 Tyr Asp Gly Pro Arg Ile Ala Ser Met Glu Leu Thr Glu Asp Thr Leu
 100 105 110
 Pro Arg Val Ser Thr Arg Ala Thr Val Pro Ala Gly Val Tyr Phe Arg
 115 120 125
 Leu Ile Val Phe Arg Lys Ser Gly Ser Glu Tyr Val Phe Gln Ser Ala
 130 135 140
 Ala Asp Tyr Thr Ser Asn Gly Thr Gly Thr Pro Val Leu Lys Gln Gly
 145 150 155 160
 Arg Leu Leu Thr Arg Ser Gly Thr Ile Arg Val Val Gly Tyr Ser Phe
 165 170 175
 Asn Thr Thr Thr Ala Ala Asp Leu Gly Thr Met Pro Ser Thr Tyr Ala
 180 185 190
 Tyr Asn Ser Ser Thr Val Ser Ile Pro Asn Met Ser Lys Asp Phe Met
 195 200 205
 Thr Phe Asp Ser Gly Asp Ile Thr Asn Val Asn Ser Leu Ser His Asn
 210 215 220
 Leu Pro Val Ser Phe Asn Gln Lys Leu Cys Lys Leu Thr Ile Thr Ile
 225 230 235 240
 Ser Pro Thr Gly Phe Pro Ser Asn Thr Ile Thr Asn Cys Thr Gly Val
 245 250 255
 Tyr Val Lys Gln Gly Gly Asn Ser Thr Ser Trp Lys Ile Gly Pro Ser
 260 265 270
 Thr Asn Val Val Ala Ala Asn Thr Asn Asn Thr Ala Ala Phe Ser Pro
 275 280 285
 Lys Thr Thr Leu Ser Thr Thr Ile Arg Met Val Pro Phe Ala Gly Ala
 290 295 300
 Arg Thr Ile Thr Val His Phe Asn Thr Leu Thr Ile Ser Gly Arg Thr
 305 310 315 320
 Val Pro Asn Asn Thr Glu Ile Thr Ser Thr Gln Ser Val Gln Leu Lys
 325 330 335
 Glu Gly Lys Ser Tyr Thr Met Lys Ile Gln Phe Lys Lys Ala Ile Gly
 340 345 350
 Ile Asn Val Pro Ala Ser Asn Ile Asn Leu Thr Gln Asn Gly Cys Thr
 355 360 365
 Glu Asn Asp Lys Thr Ile Leu Ser Lys Leu Arg Trp Ala Glu Gly Asn
 370 375 380
 Leu Asn Ser Gln Ser Asn Tyr Asn Leu Thr Trp Ala Ser Ser Thr Thr


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385          390          395          400
Asp Tyr Gly Tyr Tyr Tyr Ile Trp Lys Asn Val Tyr Val Ser Ser Gly
          405          410          415
Tyr Thr Gly Tyr Gly Ala Val Asp Pro Cys Thr Arg Leu Asp Glu Ser
          420          425          430
Lys Tyr Gly Ser Gly Trp Arg Thr Pro Thr Arg Ser Glu Phe Ile Ser
          435          440          445
Leu Ser Arg Cys Ser Asn Lys Gln Leu Val Lys Tyr Asn Gly Ile Gln
          450          455          460
Gly Met Trp Phe Met Asn Ser Ser Thr Gly Leu Phe Leu Pro Ala Ala
465          470          475          480
Gly Trp Arg Asp Gly Asn Asn Gly Ser Gly Thr Thr Ala Thr Ala Tyr
          485          490          495
Thr Asp Gly Thr Gly Ser Tyr Tyr Trp Ser Ser Asp Leu Asn Gly Asn
          500          505          510
Ser Ala Tyr Gly Leu Tyr Ile Leu Lys Asn Asp Val Phe Val Asp Ala
          515          520          525
Asn Gly Asn Arg Lys Ser Gly Val Ser Val Arg Cys Val His Asn Leu
          530          535          540

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<210> 7764

<211> 154

<212> PRT

<213> B.fragilis

<400> 7764

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Gln Leu Ser Arg Ser Asp Ile Thr Ile Thr Tyr Asn Thr Met Thr Glu
1          5          10          15
Phe Arg Tyr Ser Ile Cys Glu Pro Leu Asn Pro Lys Val Ile Glu Lys
          20          25          30
Gly Met Ile Ala Pro Asp Ser Val Ile Gly Leu Phe Asn Asp Phe Gln
          35          40          45
Trp Asp Tyr Tyr Leu Lys Gln Ile Glu Val Ala Glu Thr Arg Lys Met
          50          55          60
Asp Ile Tyr Phe Ser Pro Ser Leu Glu Val Glu Asn Lys Ala Asn Lys
65          70          75          80
Asn Gly Leu Thr Ile Ser Ala Val Gly Asp Pro Glu Asp Pro Glu Phe
          85          90          95
Tyr Ile Phe Tyr Lys Arg Pro Ile Ser Val Val Lys Lys Gln Phe Phe
          100          105          110
Arg Lys Pro Gln Thr Val Val Glu Asp Tyr Val Ser Glu Ile Thr Gly
          115          120          125
Gln Thr Lys Glu Asp Ile Ile Glu Cys Leu Asn Ala Leu Ile Lys Asn
          130          135          140
Asp Gln Glu Phe Leu Arg Arg Lys Ile Ala
145          150

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<210> 7765

<211> 158

<212> PRT

<213> B.fragilis

<400> 7765

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Gln Arg Leu Ser Asn Ile Ile Arg Met Arg Val Val Ile Gln Arg Val
1          5          10          15
Ser His Ala Ser Val Thr Ile Asp Gly His Cys Lys Ser Ala Ile Gln
          20          25          30
Lys Gly Met Met Ile Leu Val Gly Ile Glu Glu Thr Asp Ser Arg Glu
          35          40          45

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Asp Ile Asp Trp Leu Cys Lys Lys Ile Val Asn Leu Arg Ile Phe Asp
 50 55 60
 Asp Glu Asn Gly Val Met Asn Lys Ser Ile Leu Glu Asp Glu Gly Asn
 65 70 75 80
 Ile Leu Val Leu Ser Gln Phe Thr Leu His Ala Ser Thr Lys Lys Gly
 85 90 95
 Asn Arg Pro Ser Tyr Ile Lys Ala Ala Lys Pro Glu Ile Ser Ile Pro
 100 105 110
 Leu Tyr Glu Gln Phe Cys Asn Asp Leu Ser Cys Ala Leu Gly Lys Glu
 115 120 125
 Val Lys Thr Gly Glu Phe Gly Ala Asp Met Lys Val Glu Leu Leu Asn
 130 135 140
 Asp Gly Pro Val Thr Ile Cys Ile Asp Thr Lys Asn Lys Glu
 145 150 155

<210> 7766

<211> 191

<212> PRT

<213> B.fragilis

<400> 7766

Thr Arg Lys Arg Arg Ser His Ala Leu Pro Gln Thr Leu Pro Pro Leu
 1 5 10 15
 Ser Ala Ser Pro Pro Phe Pro Gln Asn Pro Thr Ile Met Ala Lys Tyr
 20 25 30
 Lys Leu Thr Leu Lys Lys Asn Pro Asn Lys Arg Asn Glu Pro Gly Lys
 35 40 45
 Trp Tyr Ala Ile Pro Thr Thr Val Asn Ser Leu Asp Thr Arg Ala Val
 50 55 60
 Thr Arg Ala Val Thr Arg Asn Thr Thr Val Ala Pro Thr Glu Leu Glu
 65 70 75 80
 Thr Ser Met Asn Leu Val Cys Asp Gly Ile Pro Ala Leu Leu Gln Gln
 85 90 95
 Gly Asn Ser Val Arg Ile Gly Ser Leu Gly Thr Leu Arg Leu Ser Phe
 100 105 110
 Gly Ser Thr Gly Thr Glu Asn Ile Asp Asp Phe Asn Ala Ala Thr Met
 115 120 125
 Ile Lys Asn Val Lys Ile Val Phe Thr Pro Ser Lys Glu Leu Lys Ala
 130 135 140
 Ala Val Gln Glu Gly Leu Ser Phe Glu Asn Ala Gly Val Ile Glu Thr
 145 150 155 160
 Gly Phe Thr Tyr Pro Ser Val Gln Asp Tyr Lys Lys Tyr Lys Val Ala
 165 170 175
 Asp Arg Pro Ala Gly Gly Gly Asp Ile Val Asp Asp Pro Thr Ala
 180 185 190

<210> 7767

<211> 303

<212> PRT

<213> B.fragilis

<400> 7767

Asn Ser Leu Ile Met Ser Pro Leu Asn Phe Thr His Ile Leu Thr Gln
 1 5 10 15
 Thr Val Asp Glu Leu Ser Glu Ser Glu Ser Tyr Lys Gly Leu Phe His
 20 25 30
 Gln His Lys Asp Gly Glu Pro Leu Pro Ser Pro Arg Val Leu Cys Asp
 35 40 45
 Val Ile Glu Leu Ala Arg Ser Ile Leu Phe Pro Gly Tyr Tyr Gly Asn

50		55		60
Ser Thr Val Asn Ser Arg Thr Ile Asn Tyr His Ile Gly Val Asn Val				
65		70		80
Glu Lys Leu Phe Asn Leu Leu Thr Glu Gln Ile Leu Ala Gly Leu Cys				
	85		90	95
Phe Gly Asn Gly Asp Arg Cys Asp Glu Cys Thr Glu Ala Lys Arg Glu				
	100		105	110
Glu Ala Ala Arg Leu Ala Ala Lys Phe Ile Ser Lys Leu Pro His Leu				
	115		120	125
Arg Arg Val Leu Ala Thr Asp Val Glu Ala Ala Tyr Asn Gly Asp Pro				
	130		135	140
Ala Ala Gln Ser Phe Gly Glu Val Ile Phe Cys Tyr Pro Ala Ile Lys				
	145		150	155
Ala Ile Ser Asn Tyr Arg Ile Ala His Glu Leu Leu Glu Leu Gly Val				
	165		170	175
Pro Leu Ile Pro Arg Ile Ile Thr Glu Met Ala His Ser Glu Thr Gly				
	180		185	190
Ile Asp Ile His Pro Gly Ala Arg Ile Gly Thr His Phe Thr Ile Asp				
	195		200	205
His Gly Thr Gly Val Val Ile Gly Ala Thr Ser Ile Ile Gly Asn Asn				
	210		215	220
Val Lys Leu Tyr Gln Gly Val Thr Leu Gly Ala Arg Ser Phe Pro Leu				
	225		230	235
Asp Ala Asp Gly Lys Pro Ile Lys Gly Ile Pro Arg His Pro Ile Leu				
	245		250	255
Glu Asp Asn Val Ile Val Tyr Ser Asn Ala Thr Ile Leu Gly Arg Ile				
	260		265	270
Thr Ile Gly Arg Asp Ala Thr Val Gly Gly Asn Ile Trp Val Thr Glu				
	275		280	285
Asn Ile Pro Ala Gly Ala Arg Ile Val Gln Thr Lys Ala Lys Lys				
	290		295	300

<210> 7768

<211> 631

<212> PRT

<213> B.fragilis

<400> 7768

Glu Ile Asn Ile Asp Ser Met Asp Phe Lys Tyr Asp Val Ile Val Ile		
1	5	10
Gly Ala Gly His Ala Gly Cys Glu Ala Ala Ala Ala Ala Ala Asn Leu		
	20	25
Gly Ser Lys Thr Cys Leu Ile Thr Met Asp Met Asn Lys Val Ala Gln		
	35	40
Met Ser Cys Asn Pro Ala Val Gly Gly Ile Ala Lys Gly Gln Ile Val		
	50	55
Arg Glu Ile Asp Ala Leu Gly Gly Tyr Met Gly Leu Val Thr Asp Gln		
	65	70
Thr Ala Ile Gln Phe Arg Ile Leu Asn Arg Ser Lys Gly Pro Ala Met		
	85	90
Trp Ser Pro Arg Ala Gln Cys Asp Arg Asn Lys Phe Ile Trp Ala Trp		
	100	105
Arg Glu Ile Leu Glu Asn Ile Pro Asn Leu His Ile Trp Gln Asp Thr		
	115	120
Val Lys Glu Ile Ile Val Glu Asn Gly Glu Val Val Gly Leu Lys Thr		
	130	135
Phe Trp Asp Val Thr Phe His Ala Arg Cys Ile Val Leu Thr Ala Gly		
	145	150
Thr Phe Leu Asn Gly Leu Met His Val Gly Lys Thr Gln Leu Pro Gly		
	155	160

<210> 7769
 <211> 454
 <212> PRT
 <213> B.fragilis

<400> 7769

His	Thr	Gly	Met	Leu	Ser	Ile	Phe	Met	Ser	Glu	Gln	Phe	Glu	Met	Ile
1				5					10					15	
Ala	Lys	Thr	Phe	Gln	Gly	Leu	Glu	Glu	Ile	Leu	Ala	Glu	Glu	Leu	Thr
			20					25					30		
Thr	Leu	Gly	Ala	Asn	Asp	Val	Gln	Ile	Gly	Arg	Arg	Met	Val	Ser	Phe
		35					40					45			
Thr	Gly	Asp	Lys	Glu	Met	Met	Tyr	Lys	Ala	Asn	Phe	Cys	Leu	Arg	Thr
	50					55					60				
Ala	Ile	Arg	Ile	Leu	Lys	Pro	Ile	Lys	His	Phe	Thr	Ala	Lys	Asp	Ala
65					70					75				80	
Asp	Ala	Val	Tyr	Glu	Gln	Ile	Lys	Ala	Ile	Arg	Trp	Glu	Glu	Ile	Leu
			85						90					95	
Asp	Val	Asp	Lys	Thr	Phe	Ala	Val	Asp	Ala	Val	Val	Phe	Ser	Asp	Glu
			100					105					110		
Phe	Arg	His	Ser	Lys	Phe	Val	Ser	Tyr	Lys	Val	Lys	Asp	Ala	Ile	Val
		115					120					125			
Asp	Tyr	Phe	Arg	Glu	Leu	Asn	Gly	Lys	Arg	Pro	Ser	Val	Arg	Ile	Ser
	130					135					140				
Arg	Pro	Asp	Val	Leu	Leu	Asn	Ile	His	Ile	Ala	Gln	Thr	Thr	Cys	Thr
145					150					155				160	
Leu	Ser	Leu	Asp	Ser	Ser	Gly	Glu	Ser	Leu	His	Arg	Arg	Gly	Tyr	Arg
			165						170					175	
Gln	Glu	Ala	Val	Glu	Ala	Pro	Leu	Asn	Glu	Val	Leu	Ala	Ala	Gly	Met
			180					185					190		
Ile	Leu	Met	Thr	Gly	Trp	Lys	Gly	Glu	Cys	Asp	Leu	Ile	Asp	Pro	Met
		195					200					205			
Cys	Gly	Ser	Gly	Thr	Ile	Pro	Ile	Glu	Ala	Ala	Leu	Ile	Ala	Arg	Asn
	210					215					220				
Ile	Ala	Pro	Gly	Val	Phe	Arg	Lys	Glu	Phe	Ala	Phe	Glu	Lys	Trp	Gly
225					230					235				240	
Asp	Phe	Asp	Gln	Asn	Leu	Phe	Asp	Arg	Ile	Tyr	Asn	Asp	Asp	Ser	Gln
			245						250					255	
Glu	Arg	Glu	Phe	Thr	His	Lys	Ile	Tyr	Gly	Tyr	Asp	Asn	Asn	Pro	Lys
			260					265					270		
Ala	Asn	Glu	Ile	Ala	Thr	His	Asn	Val	Lys	Ala	Ala	Gly	Val	Ser	Lys
	275						280					285			
Asp	Ile	Ile	Leu	Lys	Leu	Gln	Pro	Phe	Gln	Gln	Phe	Glu	Gln	Pro	Ala
	290					295					300				
Glu	Lys	Ser	Ile	Ile	Ile	Thr	Asn	Pro	Pro	Tyr	Gly	Glu	Arg	Ile	Ser
305					310					315				320	
Thr	Asn	Asp	Leu	Leu	Gly	Leu	Tyr	Asn	Met	Ile	Gly	Glu	Arg	Leu	Lys
			325						330					335	
His	Ala	Phe	Val	Gly	Asn	Asp	Ala	Trp	Ile	Leu	Ser	Tyr	Arg	Glu	Glu
			340					345					350		
Cys	Phe	Asp	Gln	Ile	Gly	Leu	Lys	Pro	Ser	Val	Lys	Thr	Pro	Leu	Phe
	355						360					365			
Asn	Gly	Pro	Leu	Glu	Cys	Glu	Phe	Arg	Lys	Tyr	Gln	Ile	Phe	Asp	Gly
	370					375					380				
Lys	Tyr	Lys	Glu	Phe	Lys	Ser	Gln	Glu	Gly	Gly	Asp	Glu	Asn	Gly	Glu
385					390						395			400	
Arg	Ala	Pro	Lys	Glu	Arg	Arg	Glu	Phe	Lys	Pro	Arg	Arg	Glu	Glu	Gly
			405						410					415	

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Ser 1	Ile	Leu	Ile	Met 5	Asn	Lys	Thr	Phe	Val 10	Gly	Phe	Ile	Phe	Leu 15	Leu
Phe	Leu	Val	Gly 20	Gly	Val	Val	Ser	Cys 25	Gln	Arg	Ser	Ser	Ser	Pro 30	Tyr
Pro	Tyr	Ser 35	Leu	Arg	Tyr	Ala	Asp 40	Ser	Leu	Met	Glu	Ile 45	Ser	Pro	Glu
Arg	Thr 50	Leu	Ala	Tyr	Leu	Arg 55	Lys	Leu	Asp	Val	Ser 60	Thr	Tyr	Ser	Ala
Gly 65	Asp	Arg	Ala	Tyr 70	Phe	Ser	Leu	Leu	Phe 75	Thr	Gln	Ala	Thr	Asp 80	Lys
Asn	Met	Leu	Ser 85	Leu	Leu	Pro	Cys	Asp 90	Ser	Leu	Ile	Asp 95	Thr	Ala	Leu
Asp	Tyr	Tyr 100	Ile	Lys	Lys	Asp	Gly 105	Val	Asn	Leu	Ala 110	Lys	Ala	Trp	Leu
Tyr	Lys 115	Gly	Arg	Ile	Gln	Lys	Lys 120	Met	Asn	Met	Thr 125	Glu	Gln	Ala	Leu
Lys	Ser 130	Cys	Phe	Thr	Ala	Leu 135	Gln	Gly	Val	Glu	Gly 140	Asn	Thr	Gly	Glu
Glu 145	Leu	Lys	Leu	Lys 150	Gly	Met	Leu	Tyr	Glu	Asp 155	Met	Gly	Ser	Ile 160	Tyr
Leu	His	Gln	Ser 165	Leu	Tyr	Gln	Lys	Ala 170	Phe	Asp	Ala 175	Phe	Tyr	Arg	Ser
Tyr	Gln	Cys 180	Asp	Ser	Leu	Leu	Asn 185	Asp	His	Arg	Leu 190	Val	Met	Tyr	Pro
Leu	Ser 195	Asn	Met	Gly	Trp	Val	Arg 200	Val	Ile	Gln	Gly 205	Lys	Thr	Val	Glu
Ala	Phe 210	Tyr	Tyr	Leu	Asn 215	Gln	Ser	Ile	Gln	Leu 220	Ala	Leu	Arg	Leu	Asn
Asp 225	Ser	Ala	Phe	Val 230	Ser	Asp	Ile	Tyr	Glu	Arg 235	Met	Ser	Leu	Asn	Cys
Glu	Asn	Val	Asp 245	Ser	Ala	Phe	Leu	Tyr	Ala 250	His	Leu	Ser	His	Gln 255	Tyr
Leu	Thr 260	Lys	Asp	Gly	Asp	Ser	Ile 265	Ser	Leu	Trp	Leu 270	Thr	Phe	Gly	Asp
Leu	Tyr 275	Leu	Asp	Lys	Gln	Glu	Leu 280	Asp	Ser	Ala	Glu 285	Tyr	Tyr	Leu	Lys
Arg	Ile 290	Leu	Asp	Thr	Ala 295	Asp	Phe	Lys	Arg	Lys 300	Ile	Leu	Ala	Ser	Tyr
Ser 305	Leu	Ala	Glu	Val 310	Glu	Lys	Ile	Arg	Gly	Asn 315	Tyr	Gln	Arg	Ala	Phe
Glu	Tyr	Gln	Ser 325	Tyr	Tyr	Gly	Asp	Asn 330	Ile	Asp	Ser 335	Ile	Phe	Leu	Leu
Asn	Lys 340	Ala	Ser	Asp	Ile	Glu	Arg 345	Leu	Ala	Tyr	Lys 350	Tyr	Asp	Ser	Glu
Ala	Lys 355	Val	Val	Lys	Glu	Lys	Glu 360	Lys	Gln	Arg	Phe 365	Phe	Ile	Gln	Gln

Leu Cys Tyr Gly Gly Val Leu Phe Leu Leu Val Ile Ala Ile Ile Phe
 370 375 380
 Gln Arg Ile Tyr Arg Arg Arg Gln Ile Ala Arg Leu Leu Tyr Glu Gln
 385 390 395 400
 Arg Ile Thr Tyr Leu Asn Glu Lys Thr Ala Leu Ser Gln Leu Gln Ile
 405 410 415
 Glu Arg Leu Glu Val Gln Ile Ser Ala Leu Lys Gln Ser Gly Met Glu
 420 425 430
 Arg Glu Gln Glu Ile Asp Leu Lys Gln Ala Glu Leu Cys Cys Val Ile
 435 440 445
 Asp Glu Lys Ala Arg Leu Arg Asn Cys Leu Phe Met Glu Thr Ser Ile
 450 455 460
 Phe Lys His Ile Arg Glu Leu Ser Thr Gln Pro Arg Leu Gly Gln Asn
 465 470 475 480
 Gly Thr Lys Gly Ser Pro Lys Val Leu Leu Met Lys Glu Gln Glu Gln
 485 490 495
 Leu Lys Asn Ile Leu Phe Gly Ile Tyr Asp Asp Tyr Ile Arg Tyr Leu
 500 505 510
 Lys Gly Thr Tyr Pro Lys Ile Thr Asp Asn Asp Cys Ile Tyr Cys Cys
 515 520 525
 Leu Lys Leu Cys Glu Phe Asp Asp Gln Thr Ile Ala Tyr Cys Phe Gly
 530 535 540
 Asn Val Ser Lys Gln Ile Val Ala Gln Arg Arg Leu Arg Leu Lys Lys
 545 550 555 560
 Lys Met Ala Glu Ala Asn
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<210> 7771
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 <212> PRT
 <213> B.fragilis

<400> 7771
 Val Thr Ile Met Glu Thr Lys Ile Asn Ser Lys Ala Leu Lys Ala Glu
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 Ala Leu Arg Leu Gly Phe Ser Ala Cys Gly Ile Ala Pro Ala Glu Pro
 20 25 30
 Ile Asp Gln Ala His Gln Asn Ala Leu Lys Met Trp Leu Asp Ala Asp
 35 40 45
 Arg Gln Ala Gly Met Thr Tyr Met Ala Asn His Phe Asp Lys Arg Cys
 50 55 60
 Asp Pro Ala Leu Leu Val Glu Gly Thr Arg Cys Val Val Ser Val Ala
 65 70 75 80
 Leu Asn Tyr Tyr Pro Ala Thr Arg Ile Pro Asp Glu Glu Tyr Gln Phe
 85 90 95
 Ala Trp Tyr Ala Tyr Gly Lys Asp Tyr His Asp Leu Met Arg Glu Lys
 100 105 110
 Leu Ala Ala Leu Phe Arg Phe Ile Gln Glu Ser Asp Val Pro Glu Leu
 115 120 125
 Asn Gly Arg Met Phe Cys Asp Thr Ala Pro Val Pro Glu Arg Tyr Trp
 130 135 140
 Ala Trp Arg Ala Gly Leu Gly Trp Ile Gly Lys Asn Thr Gln Leu Ile
 145 150 155 160
 Ile Pro His Ala Gly Ser Thr Phe Phe Leu Gly Glu Leu Phe Leu Asn
 165 170 175
 Ala Glu Ala Asp Thr Tyr Asp Arg Pro Gln Pro Asn Arg Cys Gly Arg
 180 185 190
 Cys Asn Arg Cys Leu Gln Ala Cys Pro Thr Lys Ala Leu Glu Thr Pro
 195 200 205

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Tyr Ser Leu Asn Ala His Arg Cys Leu Ser Tyr Leu Thr Ile Glu Asn
  210                215                220
Lys Ser Glu Ile Pro Asp Ser Ile Ala Pro Phe Met Gly Asn Arg Val
  225                230                235                240
Tyr Gly Cys Asp Glu Cys Gln Lys Ala Cys Pro Trp Asn Arg Phe Ala
                245                250                255
Thr Pro Cys Arg Thr Pro Glu Leu Gln Pro Ser Pro Glu Phe Met Asn
                260                265                270
Met Lys Lys Glu Asp Trp Lys Gln Leu Ser Glu Glu Lys Tyr Arg Ala
                275                280                285
Leu Phe Lys Gly Ser Ala Val Lys Arg Ala Lys Tyr Ser Gly Leu Ile
  290                295                300
Arg Asn Ile Arg Gln Met Glu Asp
  305                310

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<210> 7772

<211> 240

<212> PRT

<213> B.fragilis

<400> 7772

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Gln Pro Ser Ile Thr Phe Asp Arg Ser Pro Ala Lys Thr Glu Glu Asp
  1                5                10                15
Arg Pro Arg Asn Asn Ser Ser Gly Lys Pro His Pro Arg Arg Val Thr
                20                25                30
Lys Arg His Gln Cys Ile Ile Ser Ala Phe Gly Thr Ile Asp Cys Cys
                35                40                45
Val Ser Arg Glu Thr Lys His Leu Lys Lys Gln His Lys Arg Met Ile
  50                55                60
Met Ser Lys Glu Lys Leu Ile Lys Ser Ile Arg Glu Ile Pro Asp Phe
  65                70                75                80
Pro Ile Pro Gly Ile Leu Phe Tyr Asp Val Thr Thr Leu Phe Lys Asp
                85                90                95
Ser Glu Arg Leu Gln Glu Leu Ser Asp Ile Met Tyr Glu Met Tyr Lys
                100                105                110
Asp Lys Gly Ile Thr Lys Val Val Gly Ile Glu Ser Arg Gly Phe Ile
  115                120                125
Met Gly Pro Ile Leu Ala Thr Arg Leu Gly Thr Gly Phe Ile Pro Ile
  130                135                140
Arg Lys Pro Gly Lys Leu Pro Ala Glu Thr Met Glu Glu Ser Phe His
  145                150                155                160
Lys Glu Tyr Gly Lys Asp Ser Val Gln Ile His Lys Asp Ala Leu Asn
                165                170                175
Glu Asn Asp Val Val Leu Leu His Asp Asp Leu Leu Ala Thr Val Gly
                180                185                190
Thr Met Lys Ala Ala Cys Asn Leu Val Lys Lys Leu His Pro Lys Lys
                195                200                205
Val Tyr Val Asn Phe Ile Ile Glu Leu Lys Glu Leu Asn Gly Lys Gln
  210                215                220
Val Phe Glu Asn Asp Gln Asp Val Asp Ile Gln Ser Val Leu Ser Leu
  225                230                235                240

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<210> 7773

<211> 679

<212> PRT

<213> B.fragilis

<400> 7773

Ile Lys Thr Met Arg His Arg Ala Asn Leu Ala Ile Val Phe Phe Cys

1	5	10	15
Leu Leu Leu Pro Leu Thr Gly Cys Lys Gln Lys Ile Asn Arg Ser Asp			
20	25	30	
Ser Ala Phe Gly Gly Met Ser Ile Asp Ser Val Glu Arg Cys Ala Gln			
35	40	45	
Asp Ser Leu Phe Ser Asn Thr Arg Tyr Ser Arg Ser Leu Leu Arg His			
50	55	60	
Ala Met Ala Asp Ala Pro Asp Ser Leu Ser Tyr Tyr Tyr Leu Leu Ser			
65	70	75	80
Phe Tyr Ser Lys Ser Tyr Phe Val Thr Ala Asp Phe Asp Ser Val Leu			
85	90	95	
Tyr Tyr Asn Arg Leu Val Lys Arg Phe Cys Asn Glu Val Glu Leu Ser			
100	105	110	
Ala Glu Val His Asp Leu Leu Ser Thr Val Tyr Asn Met Glu Gly Asn			
115	120	125	
Val Leu Met Gln Arg Thr Gln Pro Asp Ser Ala Ile Ile Ser Tyr Lys			
130	135	140	
Lys Ala Tyr Glu Glu Arg Leu Gln Gly Gln Gln Thr Asp Tyr Leu Pro			
145	150	155	160
Asp Leu Cys Ile Asn Leu Ala Asp Ala Asn Val His Lys Gly Asp Tyr			
165	170	175	
Ala Tyr Ala Ala Tyr Tyr Tyr Arg Arg Ala Leu Phe Ile Cys Asp Ser			
180	185	190	
Leu Gly Leu Pro Asp Arg Asn Lys Phe Pro Val Tyr Tyr Gly Leu Gly			
195	200	205	
Gln Thr Tyr Met Glu Leu Arg Asp Phe Glu Leu Ser Asn His Tyr Tyr			
210	215	220	
Glu Leu Ala Gly Asn Phe Phe Pro Gln Met Ser Val Ser Glu Lys Trp			
225	230	235	240
Thr Tyr Leu Asn Asn Arg Gly Asn His Phe Tyr Tyr Lys Lys Asp Tyr			
245	250	255	
Pro Gln Ala Val His Tyr Ile Gly Arg Ala Leu Glu Val Val Lys Ser			
260	265	270	
Tyr Pro Gln Met Val Phe Glu Gln Asn Leu Cys Lys Ala Asn Leu Gly			
275	280	285	
Glu Leu Tyr Val Ile Thr Asn Lys Leu Asp Ser Ala Gln Leu Tyr Leu			
290	295	300	
Asp Glu Ser Tyr Arg Phe Phe Ser Gly Ile Gly Asn Gln Ser Ala Leu			
305	310	315	320
Tyr Tyr Ile Glu Thr Gln Met Ile Glu Leu Ala Leu Lys Lys Gly Asn			
325	330	335	
Val Ala Leu Ala Gly Asp Ile Ile Arg Arg Ser Ala Asp Tyr Gly His			
340	345	350	
Ile Asp Ala Asn Met Ile Asn Ile Arg Asn His Tyr Leu Gln His Tyr			
355	360	365	
Tyr Glu Gln Val Gly Asn Tyr Lys Lys Ala Tyr Glu Tyr Gln Lys His			
370	375	380	
Asp Leu Gln Leu Asn Asp Ser Ile Arg Asn Glu Arg Val Arg Thr Arg			
385	390	395	400
Val Ala Glu Leu Asp Met Arg Tyr Arg Gln Asp Thr Ile Val Met Arg			
405	410	415	
Lys Glu Leu Val Ile Glu Lys Gln Lys Gly Glu Met Glu Val Leu Lys			
420	425	430	
Leu Thr Thr Tyr Ile Trp Ala Leu Ile Gly Ile Val Ser Val Ile Val			
435	440	445	
Ala Gly Leu Val Tyr Trp Tyr Met Lys Lys Lys Arg Met Phe Leu Gln			
450	455	460	
Glu Arg His Ile Asn Gln Ile Ser Arg Phe Arg Met Glu Asn Ile Arg			
465	470	475	480

Asn Arg Leu Ser Pro His Phe Thr Phe Asn Val Leu Asn Arg Glu Ile
 485 490 495
 Ser Arg Phe Arg Asp Gly Glu Thr Leu Cys Gly Asp Leu Thr Glu Leu
 500 505 510
 Val Lys Leu Leu Arg Lys Ser Leu Glu Leu Thr Glu Lys Leu Ser Ile
 515 520 525
 Ser Leu Tyr Asp Glu Leu Glu Phe Val Lys Thr Tyr Ile His Leu Glu
 530 535 540
 Gln Gly Arg Leu Gly Ser Asp Phe Ser Met Asp Val Lys Ile Glu Glu
 545 550 555 560
 Asp Leu Asp Ile Gln Gln Val Val Ile Pro Ser Met Val Val Gln Ile
 565 570 575
 Pro Val Glu Asn Ala Leu Lys His Gly Leu Ala Gly Ile Asp Gly Leu
 580 585 590
 Lys Leu Leu Gly Ile Ser Val Cys Arg Lys Gly Ser Gly Ile Leu Ile
 595 600 605
 Asp Ile Cys Asp Asn Gly Arg Gly Tyr Ser Pro Gln Thr Leu Ser Ser
 610 615 620
 Thr Arg Gly Thr Gly Thr Gly Leu Lys Val Leu Tyr Gln Thr Ile Gln
 625 630 635 640
 Leu Leu Asn Asp Lys Asn Arg Glu Lys Ile Arg Phe Glu Ile Lys Asn
 645 650 655
 Leu Val Asn Asn Gly Gln Thr Gly Thr Gln Val Leu Ile Tyr Ile Pro
 660 665 670
 Leu Asp Tyr Ser Tyr Asn Leu
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<210> 7774

<211> 207

<212> PRT

<213> B.fragilis

<400> 7774

Pro Lys Glu Met Phe Ile Glu Gln Pro Pro Trp Phe Phe Arg Ala Ile
 1 5 10 15
 Tyr Pro Asp Ala Ile Phe Arg Met Asp Pro Asp Glu Lys Ala Val Tyr
 20 25 30
 Leu Thr Phe Asp Asp Gly Pro Ile Pro Glu Val Thr Pro Trp Val Leu
 35 40 45
 Glu Leu Leu Asp Lys His Asn Ile Lys Ala Thr Phe Phe Met Val Gly
 50 55 60
 Asp Asn Ile Arg Lys His Pro Asp Val Phe Arg Met Val Val Glu Arg
 65 70 75 80
 Gly His Arg Ile Gly Asn His Thr Phe Asn His Ile Arg Gly Phe Glu
 85 90 95
 Tyr Leu Ser Ser Asn Tyr Leu Ala Asn Thr Asp Lys Ala Asn Glu Met
 100 105 110
 Met Lys Thr Asp Leu Phe Arg Pro Pro His Gly His Met Arg Trp Met
 115 120 125
 Gln Tyr Met Thr Leu Lys Arg His Tyr Lys Ile Ile Met Trp Asp Leu
 130 135 140
 Val Thr Arg Asp Tyr Ser Lys Lys Leu Arg Pro Gln Val Leu Ala
 145 150 155 160
 Asn Val Met Arg Tyr Ala Arg Asn Gly Ser Ile Ile Thr Phe His Asp
 165 170 175
 Ser Leu Lys Ser Trp Asn Asn Gly Asn Leu Gln Tyr Ala Leu Pro Arg
 180 185 190
 Ala Ile Asp Phe Leu Lys Glu Glu Gly Tyr Glu Phe Arg Leu Leu
 195 200 205

<210> 7775
 <211> 371
 <212> PRT
 <213> B.fragilis

<400> 7775

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Thr Tyr Phe Val Lys Glu Lys Leu Cys Glu Thr Leu Pro Tyr Tyr Val
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Ala Lys Ser Ile Ser Leu Leu Pro Ile Tyr Lys Lys Gly Met Glu Glu
20      25      30
Asp Phe Asn Ile Arg Asp His Gln Leu Thr Ser Arg Glu Arg Asp Phe
35      40      45
Glu Asn Ala Leu Arg Pro Leu Ser Phe Glu Asp Phe Asn Gly Gln Asp
50      55      60
Lys Val Val Asp Asn Leu Arg Ile Phe Val Lys Ala Ala Arg Leu Arg
65      70      75      80
Ala Glu Ala Leu Asp His Val Leu Leu His Gly Pro Pro Gly Leu Gly
85      90      95
Lys Thr Thr Leu Ser Asn Ile Ile Ala Asn Glu Leu Gly Val Gly Phe
100     105     110
Lys Val Thr Ser Gly Pro Val Leu Asp Lys Pro Gly Asp Leu Ala Gly
115     120     125
Val Leu Thr Ser Leu Glu Pro Asn Asp Val Leu Phe Ile Asp Glu Ile
130     135     140
His Arg Leu Ser Pro Val Val Glu Glu Tyr Leu Tyr Ser Ala Met Glu
145     150     155     160
Asp Tyr Arg Ile Asp Ile Met Ile Asp Lys Gly Pro Ser Ala Arg Ser
165     170     175
Ile Gln Ile Asp Leu Asn Pro Phe Thr Leu Val Gly Ala Thr Thr Arg
180     185     190
Ser Gly Leu Leu Thr Ala Pro Leu Arg Ala Arg Phe Gly Ile Asn Leu
195     200     205
His Leu Glu Tyr Tyr Asp Asp Asp Ile Leu Ser Asn Ile Ile Ser Arg
210     215     220
Ser Ala Gly Ile Leu Asp Val Pro Cys Ser Ser Gln Ala Ala Gly Glu
225     230     235     240
Ile Ala Ser Arg Ser Arg Gly Thr Pro Arg Ile Ala Asn Ala Leu Leu
245     250     255
Arg Arg Val Arg Asp Phe Ala Gln Val Lys Gly Ser Gly Ser Ile Asp
260     265     270
Thr Glu Ile Ala Asn Tyr Ala Leu Glu Ala Leu Asn Ile Asp Lys Tyr
275     280     285
Gly Leu Asp Glu Ile Asp Asn Lys Ile Leu Cys Thr Ile Ile Asp Lys
290     295     300
Phe Lys Gly Gly Pro Val Gly Leu Thr Thr Ile Ala Thr Ala Leu Gly
305     310     315     320
Glu Asp Ala Gly Thr Ile Glu Glu Val Tyr Glu Pro Phe Leu Ile Lys
325     330     335
Glu Gly Phe Leu Lys Arg Thr Pro Arg Gly Arg Glu Val Thr Glu Leu
340     345     350
Ala Tyr Lys His Leu Gly Arg Ser Leu Tyr Asn Ser Gln Lys Thr Leu
355     360     365
Phe Asn Asp
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<210> 7776
 <211> 354
 <212> PRT

<213> B.fragilis

<400> 7776

Phe Ile Phe Phe Ser Phe Phe Met Val Lys Val Gln Lys Asn Thr Val
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 Leu Thr Val Leu Leu Leu Leu Cys Ser Asn Ser Val Cys Met Asp
 20 25 30
 Ser Leu Ser Leu Ile Lys Ser Pro Ile Thr Thr Glu Leu Glu Asp Phe
 35 40 45
 Lys Asn Leu Phe Asp Ser Ser Leu Ser Ser Ser Asn Leu Leu Leu Asn
 50 55 60
 Asn Val Ile Ala His Ile Arg Gln Arg Asn Gly Lys Met Met Arg Pro
 65 70 75 80
 Ile Leu Val Leu Leu Val Ala Lys Leu Tyr Gly Glu Ile Lys Pro Glu
 85 90 95
 Thr Leu His Ala Ala Val Ser Leu Glu Leu Leu His Thr Ala Ser Leu
 100 105 110
 Val His Asp Asp Val Val Asp Glu Ser Thr Glu Arg Arg Gly Gln Leu
 115 120 125
 Ser Val Asn Ala Ile Phe Asn Asn Lys Val Ala Val Leu Val Gly Asp
 130 135 140
 Phe Leu Leu Ala Thr Ser Leu Val His Ala Glu Arg Thr Arg Asn His
 145 150 155 160
 Asp Ile Ile Gly Val Val Ala Cys Leu Gly Gln Asp Leu Ala Glu Gly
 165 170 175
 Glu Ile Leu Gln Leu Ser Asn Val Ser Asn Arg Glu Tyr Ser Glu Thr
 180 185 190
 Ile Tyr Phe Asp Val Ile Arg Lys Lys Thr Ala Ala Leu Phe Ala Ala
 195 200 205
 Cys Thr Lys Ala Ala Ala Leu Ser Val Glu Val Thr Asp Glu Lys Ala
 210 215 220
 Glu Phe Ala Arg Leu Phe Gly Glu Asn Ile Gly Ile Cys Phe Gln Ile
 225 230 235 240
 Lys Asp Asp Ile Phe Asp Tyr Phe Glu Ser Lys Glu Ile Gly Lys Pro
 245 250 255
 Thr Gly Asn Asp Met Leu Glu Gly Lys Leu Thr Leu Pro Ala Leu Tyr
 260 265 270
 Val Leu Asn Thr Thr Thr Asp Ala Trp Ala Gln Glu Met Ala Leu Arg
 275 280 285
 Val Lys Ala Gly Thr Ala Thr Val Asp Glu Ile Thr Arg Leu Ile Glu
 290 295 300
 Phe Ile Lys Gln Asn Gly Gly Ile Glu Tyr Ala Val Lys Val Met Tyr
 305 310 315 320
 Glu Tyr Lys Glu Arg Ala Leu Asp Leu Leu Arg Thr Leu Pro Asp Ser
 325 330 335
 Ala Val Lys Thr Ser Leu Ile Thr Tyr Leu Asp Tyr Val Val Asp Arg
 340 345 350
 Asp Lys

<210> 7777

<211> 136

<212> PRT

<213> B.fragilis

<400> 7777

Asn Phe Val Val Lys Tyr Lys Leu Ile Ile Met Lys Lys Val Phe Phe
 1 5 10 15
 Leu Tyr Cys Ile Ser Leu Leu Cys Ile Tyr Gly Cys Asn Asp Asp Ser

20	25	30
Asp Lys Tyr Ser Ser Asn Phe Leu Lys Ser Arg Glu Val Thr Leu Asn		
35	40	45
Ala Glu Gly Gly Asp Ile Thr Val Glu Gly Arg Glu Lys Phe Ile Leu		
50	55	60
Val Gln Thr Glu Glu Ile Leu Asn Gln Asp Thr Ile Phe Ser Ile Gly		
65	70	75
Glu Ile Asn Gly Val Glu Tyr Gln Gly Gly Trp Tyr Gln Leu Glu Val		
85	90	95
Asn Gly Lys Glu Met Thr Leu Asn Cys Asp Arg Asn Leu Thr Gly Asn		
100	105	110
Lys Arg Lys Val Val Leu His Phe Gln Gly Thr Gly Asn Ser Phe Asp		
115	120	125
Val Phe Ser Leu Thr Gln Leu Glu		
130	135	

<210> 7778

<211> 1001

<212> PRT

<213> B.fragilis

<400> 7778

Ala Ile Thr Leu Leu Ser Lys Arg Phe Glu Leu Asp Arg Glu Leu Ser		
1	5	10
Asn Arg Phe Leu Lys Ser Ser Ser Ser Val Val Ile Gly Asp Phe Ile		
20	25	30
Lys Asp Lys Leu Ser Met His Thr Leu Phe Glu His Lys Ser Asn Asn		
35	40	45
Lys Thr Val Asn Thr Val Phe Phe Cys Thr Phe Thr Met Lys Lys Leu		
50	55	60
Lys Asn Met Asn Gln Asn Ser Lys Leu Phe Leu Leu Asp Ala Tyr Ala		
65	70	75
Leu Ile Tyr Arg Ala Tyr Tyr Ala Phe Ile Lys Asn Pro Arg Ile Asn		
85	90	95
Ser Lys Gly Phe Asn Thr Ser Ala Ile Leu Gly Phe Val Asn Thr Leu		
100	105	110
Glu Glu Val Leu Lys Lys Glu Asn Pro Thr His Ile Gly Val Ala Phe		
115	120	125
Asp Pro Pro Gly Pro Thr Phe Arg His Glu Ala Phe Glu Gln Tyr Lys		
130	135	140
Ala Gln Arg Glu Glu Thr Pro Glu Ala Ile Arg Leu Ser Val Pro Ile		
145	150	155
Ile Lys Asp Ile Ile Lys Ala Tyr Arg Ile Pro Ile Leu Glu Val Ala		
165	170	175
Gly Tyr Glu Ala Asp Asp Val Ile Gly Thr Leu Ala Thr Glu Ala Gly		
180	185	190
Asn Gln Gly Ile Thr Thr Tyr Met Met Thr Pro Asp Lys Asp Tyr Gly		
195	200	205
Gln Leu Val Thr Asp His Val Phe Met Tyr Arg Pro Lys Tyr Gly Asp		
210	215	220
Lys Glu Phe Glu Val Met Gly Val Glu Gln Val Lys Ala Lys Phe Asp		
225	230	235
Ile Gln Ser Pro Ala Gln Val Ile Asp Met Leu Gly Leu Met Gly Asp		
245	250	255
Ser Ser Asp Asn Ile Pro Gly Cys Pro Gly Val Gly Glu Lys Thr Ala		
260	265	270
Gln Lys Leu Ile Ala Glu Phe Gly Ser Ile Glu Asn Leu Leu Glu His		
275	280	285
Thr Asp Gln Leu Lys Gly Ala Leu Lys Thr Lys Val Glu Thr Asn Arg		

290		295		300
Glu Met Ile Ile Phe Ser	Lys Phe Leu Ala Thr	Ile Lys Val Asp Val		
305	310	315	320	
Pro Ile Arg Leu Asp	Met Asn Ser Leu Val Arg	Glu Gln Ala Asp Glu		
	325	330	335	
Asp Thr Leu Arg Lys	Ile Phe Glu Glu Leu Glu Phe Arg	Thr Leu Met		
	340	345	350	
Glu Arg Ile Phe Lys Lys	Glu Ser Ser Pro Ala Ser Pro	Ile Ala Gly		
	355	360	365	
Thr Leu Phe Asn Gln Glu	Asn Gly Pro Val Gln Gly	Asn Leu Phe Glu		
	370	375	380	
Glu Phe Thr Pro Asp	His Thr Asn Glu Glu Lys Lys	Ser Asn Leu Glu		
385	390	395	400	
Ser Leu Asn Ser Leu	Ser Tyr Asp Tyr Gln Leu Ile	Asp Thr Glu Glu		
	405	410	415	
Lys Arg Asn Glu Ile	Ile Lys Lys Leu Leu Thr Ser	Glu Ile Leu Ala		
	420	425	430	
Leu Asp Thr Glu Thr	Thr Gly Thr Asp Pro Met Asp	Ala Glu Leu Val		
	435	440	445	
Gly Met Ser Phe Ser	Ile Thr Glu Asn Gln Ala Phe	Tyr Val Pro Val		
	450	455	460	
Pro Ala Glu Arg Glu	Glu Ala Ile Lys Ile Val Arg	Glu Phe Glu Pro		
465	470	475	480	
Val Phe Lys Asn Glu	Lys Ser Leu Lys Val Gly	Gln Asn Ile Lys Tyr		
	485	490	495	
Asp Met Leu Val Leu	Gln Asn Tyr Gly Ile Glu Val	Arg Gly Lys Leu		
	500	505	510	
Phe Asp Thr Met Val	Ala His Tyr Val Leu Gln Pro	Glu Leu Arg His		
	515	520	525	
Asn Met Asp Tyr Leu	Ala Glu Ile Tyr Leu His Tyr	Gln Thr Ile His		
	530	535	540	
Ile Glu Glu Leu Ile	Gly Pro Lys Gly Lys Gly Gln	Lys Asn Met Arg		
545	550	555	560	
Asp Leu Ser Pro Gln	Glu Val Tyr Leu Tyr Ala Cys	Glu Asp Ala Asp		
	565	570	575	
Val Thr Leu Lys Leu	Lys Asn Ile Leu Glu Gln Glu Leu	Lys Lys Asn		
	580	585	590	
Asp Ala Glu Lys Leu	Phe Tyr Glu Ile Glu Met Pro	Leu Val Pro Val		
	595	600	605	
Leu Val Asn Ile Glu	Ser Asn Gly Val Arg Leu Asp	Thr Glu Ala Leu		
	610	615	620	
Lys Gln Ser Ser Glu	His Phe Thr Thr Arg Leu Gln	Ser Ile Glu Lys		
625	630	635	640	
Glu Ile Tyr Thr Leu	Ala Glu Gly Glu Phe Asn Ile	Ala Ser Pro Lys		
	645	650	655	
Gln Val Gly Glu Ile	Leu Phe Asp Lys Leu Lys Ile	Val Glu Lys Ala		
	660	665	670	
Lys Lys Thr Lys Thr	Gly Gln Tyr Val Thr Ser Glu	Glu Val Leu Glu		
	675	680	685	
Ser Leu Arg Asn Lys	His Asp Ile Ile Gly Lys Ile	Leu Glu Tyr Arg		
	690	695	700	
Gly Leu Lys Lys Leu	Leu Ser Thr Tyr Ile Asp	Ala Leu Pro Gln Leu		
705	710	715	720	
Ile Asn Pro Lys Thr	Gly Arg Ile His Thr Ser Phe	Asn Gln Thr Val		
	725	730	735	
Thr Ala Thr Gly Arg	Leu Ser Ser Ser Asn Pro	Asn Leu Gln Asn Ile		
	740	745	750	
Pro Ile Arg Asp Glu	Asp Gly Lys Glu Ile Arg	Lys Ala Phe Ile Pro		
	755	760	765	

Asp Asp Gly Cys Ser Phe Phe Ser Ala Asp Tyr Ser Gln Ile Glu Leu
 770 775 780
 Arg Ile Met Ala His Leu Ser Glu Asp Lys Asn Met Ile Asp Ala Phe
 785 790 795 800
 Leu Ser Gly Tyr Asp Ile His Ala Ala Thr Ala Ala Lys Ile Tyr Lys
 805 810 815
 Val Asp Ile Lys Glu Val Thr Ala Asp Met Arg Arg Lys Ala Lys Thr
 820 825 830
 Ala Asn Phe Gly Ile Ile Tyr Gly Ile Ser Val Phe Gly Leu Ala Glu
 835 840 845
 Arg Met Asn Val Asp Arg Lys Glu Ala Lys Glu Leu Ile Asp Gly Tyr
 850 855 860
 Phe Glu Thr Tyr Pro Gln Val Lys Ser Tyr Met Asp Lys Ser Ile Gln
 865 870 875 880
 Val Ala Arg Glu His Gly Tyr Val Glu Thr Ile Phe His Arg Lys Arg
 885 890 895
 Phe Leu Pro Asp Ile Asn Ser Arg Asn Ala Val Val Arg Gly Tyr Ala
 900 905 910
 Glu Arg Asn Ala Ile Asn Ala Pro Ile Gln Gly Ser Ala Ala Asp Ile
 915 920 925
 Ile Lys Val Ala Met Ala Arg Ile Tyr Glu Arg Phe Lys Ala Glu Gly
 930 935 940
 Leu Lys Ala Lys Met Ile Leu Gln Val His Asp Glu Leu Asn Phe Ser
 945 950 955 960
 Val Pro Ala Lys Glu Lys Glu Ile Val Glu Gln Val Val Ile Glu Glu
 965 970 975
 Met Glu Lys Ala Tyr Arg Met His Val Pro Leu Lys Ala Asp Cys Gly
 980 985 990
 Trp Gly Thr Asn Trp Leu Glu Ala His
 995 1000

<210> 7779

<211> 256

<212> PRT

<213> B.fragilis

<400> 7779

Ser Leu Ile Ser Lys Trp Asn Ala Leu Pro Lys Met Lys Pro Asn Lys
 1 5 10 15
 Phe Ile Ile Glu Lys Gln Val Ser Glu Phe Arg Met Asp Asn Gly Leu
 20 25 30
 Ser Ala Thr Glu Pro Ile Thr Leu Lys Ser Leu Leu Leu Lys Leu Asn
 35 40 45
 Ile Leu Thr Val Phe Arg Pro Leu Ser Asp Asn Phe Ser Gly Met Cys
 50 55 60
 Leu Lys Asp Asn Ser Glu His Arg Phe Met Leu Ile Asn Ser Asn Gln
 65 70 75 80
 Pro Arg Gly Arg Gln His Phe Thr Ile Ala His Glu Leu Tyr His Leu
 85 90 95
 Tyr Ile Glu Lys Lys Pro Thr Pro His Lys Cys Asn Pro Gly Cys Ala
 100 105 110
 Ser Lys Asp Pro Ile Glu Gln Cys Ala Asp Met Phe Ala Ser Ser Leu
 115 120 125
 Leu Met Pro Glu Gly Gly Ile Cys Gln Leu Ile Pro Glu Met Glu Leu
 130 135 140
 Lys Thr Lys Asn Ile Ser Met Ala Thr Val Leu Lys Leu Glu His Tyr
 145 150 155 160
 Phe Ser Val Ser Arg Ser Ala Leu Leu Tyr Arg Leu Gln Asn Ile Gly
 165 170 175

Leu Ile Thr Glu Ser Thr Arg Ser Gln Leu Ala Glu Ile Lys Val Lys
 180 185 190
 Tyr Ser Ala Lys Cys Phe Gly Tyr Asp Thr Ala Leu Tyr Glu Pro Ala
 195 200 205
 Asn Glu Gly Leu Val Ile Gly Asp Phe Gly Glu Lys Ala Arg Lys Leu
 210 215 220
 Phe Glu Gln Glu Lys Ile Ser Glu Gly His Tyr Ile Glu Leu Leu His
 225 230 235 240
 Lys Ile Asn Ile Asn Gly Thr Gln Glu Asn Glu Asp Ser Thr Leu Cys
 245 250 255

<210> 7780

<211> 71

<212> PRT

<213> B.fragilis

<400> 7780

Gln Thr Arg Phe Ala Phe Ser Leu Gln Lys Phe Pro Val Leu Glu Asn
 1 5 10 15
 Phe Leu Tyr Gln Glu Glu Arg Lys Val Leu Gln Lys Phe Leu Leu Lys
 20 25 30
 Gln Glu Gln Leu Ile Ala Leu Thr Val Thr Phe Val Ala Asp Phe Ser
 35 40 45
 Thr Lys Lys Arg Phe Ser His Lys Gly Thr Leu Cys Lys Ser Ala Thr
 50 55 60
 Val Pro Ala Ala Val Ile Leu
 65 70

<210> 7781

<211> 266

<212> PRT

<213> B.fragilis

<400> 7781

His Thr Asn Ser Val Thr Val Asn Leu Leu Phe Thr Gln Thr Asn Leu
 1 5 10 15
 Leu Met Lys Thr Asn Phe Cys Arg Phe Leu Ile Gly Leu Val Ala Phe
 20 25 30
 Val Val Gly Ile Pro Val Met Ala Gln Thr Gly Pro Asp Lys Val Lys
 35 40 45
 Pro Phe Ser His Leu Ser Val Ser Leu Asn Ala Gly Thr Leu Gly Gly
 50 55 60
 Gly Leu Gln Val Ala Ala Pro Leu Asn Asp Tyr Leu Gly Leu Arg Ala
 65 70 75 80
 Gly Phe Ser Leu Leu Lys Phe Lys Cys Asn Tyr Asp Tyr Asp Gly Ile
 85 90 95
 Arg Asp Asp Gln Leu Ile Gln Asp Ala Gly Thr Arg Thr Gly Tyr Asn
 100 105 110
 Pro Asp Lys Tyr Tyr Thr Val Pro Leu Lys Ala Lys Ala Asn Met Thr
 115 120 125
 Asn Gly Met Leu Leu Leu Asp Tyr Phe Pro Phe Lys Arg Ser Val Phe
 130 135 140
 His Val Thr Ala Gly Leu Leu Phe Gly Thr Ser Ser Ile Leu Lys Val
 145 150 155 160
 Ser Gly Gln Thr Asp Glu Arg Ile Glu Val Gly Asp Ile Ile Ile Glu
 165 170 175
 Pro Gly Ala Asp Gly Arg Val Glu Ala Ala Leu Lys Thr Asn Ala Val
 180 185 190
 Lys Pro Tyr Val Gly Ile Gly Phe Gly Arg Ser Val Ala His Ser Arg


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      195              200              205
Val Gly Phe Lys Phe Glu Leu Gly Ala Met Phe His Gly Asn Pro Lys
    210              215              220
Ile Glu Ala Thr Thr Gly Lys Ile Val Glu Glu Ala Ile Asp Gln Asp
    225              230              235              240
Leu Ser Arg Phe Asn Lys Phe Leu Lys Asn Phe Lys Ala Tyr Pro Val
      245              250              255
Leu Asn Phe Gln Leu Ser Tyr Arg Ile Phe
      260              265

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<210> 7782

<211> 352

<212> PRT

<213> B.fragilis

<400> 7782

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Pro Ile Leu Ser Glu Lys Lys Tyr Ile Cys Phe Arg Lys Ser Thr Leu
1      5      10      15
Gln Phe Met Lys Leu Gln Lys Ile Tyr Arg Gln Leu Trp Met Glu Val
    20      25      30
His Pro Arg Leu Gln Ser Ala Asp Thr Asp Gln Trp Tyr Val Asp Phe
    35      40      45
Ala Asn Arg Leu Leu Pro Leu Phe Glu Lys Ser Glu Leu Thr Gly Gln
    50      55      60
Met Ile His Lys Asn Arg Ala Val Leu Tyr Phe Thr Trp Tyr Leu Glu
    65      70      75      80
Asp Cys Val Asn Asn Ser Gly Gly Trp Asn Lys Phe Ile Arg Leu His
      85      90      95
Lys Arg Leu Tyr Gly Arg Phe Leu Pro Phe Tyr Thr Leu Thr Gly Ala
    100      105      110
Tyr Ala Asp Asp Glu Ile Asn Phe Glu Asp Val Ser Phe Leu Leu Trp
    115      120      125
Ser Leu Leu Ser Pro Val Thr Asp Asp Ser Pro Val Pro Trp Asn Pro
    130      135      140
Thr Asp Lys Ser Leu Leu Arg Leu Ala Thr Asp Ile Tyr Ala Leu Leu
    145      150      155      160
Glu Ala His Phe Glu Gln Ala Pro Leu Thr Asp Asp Glu Ser Met Asp
      165      170      175
Trp Leu Pro Glu Ile Arg Ala Leu Leu Pro Pro Pro Gly Pro Val Leu
    180      185      190
Asp Ile Phe Pro Glu Met Glu Leu Pro His Asp Val Thr Lys Phe Leu
    195      200      205
Asn Ala Thr Gln Gly Lys Gln Leu Val Tyr Phe Glu Asp Tyr Ala Gly
    210      215      220
Leu Arg Arg Phe Cys Val Asp Ala Leu Glu Trp Ala Asp Glu Asp Asp
    225      230      235      240
Ser Leu Met Pro Glu Leu Ala Asp Glu Glu Asn Phe Val Phe Phe Ala
      245      250      255
Asn Pro Lys Gly Ile Leu Leu Ala Pro Asn Ile Gly Ala Cys Phe Arg
    260      265      270
Asp Glu Arg Asn Ser Thr Tyr Asn Pro Gly Ile Ala Glu Gln Glu Gly
    275      280      285
Ala Glu Leu Phe Tyr Val Pro Gly Leu Cys Pro Ile Asp Leu Leu His
    290      295      300
Tyr Ala Met Gln His Asp Leu Leu Ser Glu Val Thr Phe Pro Phe Glu
    305      310      315      320
Asp Gly Arg Arg Val Leu His Glu Asn Trp Asp Phe Ile Ala Arg Arg
      325      330      335
Tyr Leu Gly Lys Tyr Tyr Asn Glu Asp Phe Tyr Glu Glu Glu Arg Lys

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340

345

350

<210> 7783

<211> 92

<212> PRT

<213> B.fragilis

<400> 7783

Glu	Asn	Ser	Pro	Leu	Arg	Asn	Leu	Glu	Ala	Thr	Val	Pro	His	Arg	Lys
1				5					10					15	
Lys	Ile	Ile	Thr	Leu	Lys	Glu	Asp	Thr	Phe	Arg	Asp	Leu	Ser	Val	Met
			20					25					30		
Ala	Ala	Lys	Gln	Gly	Thr	Asn	Leu	Lys	Arg	Leu	Ile	Glu	Ser	Met	Leu
		35					40					45			
Asp	Lys	Ala	Ala	Asp	Glu	Tyr	Asp	Gly	Asn	Glu	Ser	Tyr	Arg	Tyr	Leu
	50					55					60				
Ser	Glu	Asn	Tyr	Pro	Asp	Gly	Lys	Val	Met	Leu	Gly	Lys	Glu	Glu	Arg
65					70					75					80
Glu	Glu	Phe	Ile	Asp	Trp	Leu	Gly	Val	Val	Glu	Lys				
				85					90						

<210> 7784

<211> 309

<212> PRT

<213> B.fragilis

<400> 7784

Arg	Asn	Val	Leu	Asn	Lys	Thr	Asn	Lys	Lys	Met	Lys	Lys	Val	Arg	Ala
1				5					10					15	
Ala	Ile	Val	Gly	Tyr	Gly	Asn	Ile	Gly	Arg	Tyr	Val	Leu	Glu	Ala	Leu
			20					25					30		
Gln	Ala	Ala	Pro	Asp	Phe	Glu	Ile	Ala	Gly	Val	Val	Arg	Arg	Ala	Gly
		35					40					45			
Ala	Glu	Asn	Lys	Pro	Ala	Glu	Leu	Asn	Asp	Tyr	Ala	Val	Val	Lys	Asp
	50					55				60					
Ile	Lys	Glu	Leu	Gln	Gly	Val	Asp	Val	Ala	Ile	Leu	Cys	Thr	Pro	Thr
65					70					75					80
Arg	Ser	Val	Glu	Lys	Tyr	Ala	Lys	Glu	Ile	Leu	Ala	Met	Gly	Ile	Asn
				85				90					95		
Thr	Val	Asp	Ser	Phe	Asp	Ile	His	Thr	Gly	Ile	Val	Asp	Leu	Arg	Arg
		100						105					110		
Glu	Leu	Gly	Ala	Cys	Ala	Lys	Glu	His	Gly	Ala	Val	Ser	Ile	Ile	Ser
		115					120					125			
Ala	Gly	Trp	Asp	Pro	Gly	Ser	Asp	Ser	Ile	Val	Arg	Thr	Met	Leu	Glu
	130					135					140				
Ala	Ile	Ala	Pro	Lys	Gly	Ile	Thr	Tyr	Thr	Asn	Phe	Gly	Pro	Gly	Met
145					150					155					160
Ser	Met	Gly	His	Thr	Val	Ala	Val	Lys	Ala	Ile	Asp	Gly	Val	Lys	Ala
			165						170					175	
Ala	Leu	Ser	Met	Thr	Ile	Pro	Thr	Gly	Thr	Gly	Ile	His	Arg	Arg	Met
		180						185					190		
Val	Tyr	Ile	Glu	Leu	Lys	Asp	Gly	Tyr	Lys	Phe	Glu	Glu	Val	Ala	Ala
	195					200					205				
Ala	Ile	Lys	Ser	Asp	Ala	Tyr	Phe	Val	Asn	Asp	Glu	Thr	His	Val	Lys
	210					215					220				
Gln	Val	Pro	Ser	Val	Asp	Ala	Leu	Leu	Asp	Met	Gly	His	Gly	Val	Asn
225					230					235					240
Leu	Thr	Arg	Lys	Gly	Val	Ser	Gly	Lys	Thr	Gln	Asn	Gln	Leu	Phe	Glu
				245					250					255	

Phe Asn Met Arg Ile Asn Asn Pro Ala Leu Thr Ala Gln Val Leu Val
 260 265 270
 Cys Val Ala Arg Ala Ser Met Lys Gln Gln Pro Gly Cys Tyr Thr Met
 275 280 285
 Val Glu Val Pro Val Ile Asp Leu Leu Pro Gly Asp Arg Glu Glu Trp
 290 295 300
 Ile Gly His Leu Val
 305

<210> 7785

<211> 205

<212> PRT

<213> B.fragilis

<400> 7785

Ile Met Asn Pro Thr Glu Arg Ile Thr Thr Pro His Lys Thr Gly Glu
 1 5 10 15
 Ala Lys Val Ile Ile Phe Ser Ala Pro Ser Gly Ser Gly Lys Ser Thr
 20 25 30
 Ile Ile Asn Tyr Leu Leu Ala Gln Lys Leu Asn Leu Ala Phe Ser Ile
 35 40 45
 Ser Ala Thr Ser Arg Pro Pro Arg Gly Asn Glu Lys His Gly Val Glu
 50 55 60
 Tyr Phe Phe Leu Ser Pro Asp Glu Phe Arg Gln Arg Ile Ala Asn Asn
 65 70 75 80
 Glu Phe Leu Glu Tyr Glu Glu Val Tyr Thr Asp Arg Phe Tyr Gly Thr
 85 90 95
 Leu Lys Ala Gln Val Glu Lys Gln Leu Ala Thr Gly Gln Asn Val Val
 100 105 110
 Phe Asp Val Asp Val Val Gly Gly Cys Asn Ile Lys Lys Tyr Tyr Gly
 115 120 125
 Glu Arg Ala Leu Ser Leu Phe Ile Gln Pro Pro Cys Ile Asp Glu Leu
 130 135 140
 Arg Arg Arg Leu Ile Gly Arg Gly Thr Asp Thr Pro Glu Val Ile Glu
 145 150 155 160
 Ser Arg Ile Ala Lys Ala Glu Tyr Glu Leu Ser Phe Ala Pro Lys Phe
 165 170 175
 Asp Lys Val Ile Ile Asn Asp Asp Leu Glu Thr Ala Lys Ala His Ala
 180 185 190
 Leu Lys Val Ile Lys Glu Phe Leu Gly Ile Asp Thr Glu
 195 200 205

<210> 7786

<211> 152

<212> PRT

<213> B.fragilis

<400> 7786

Leu Pro Gly Pro Ile Ala Thr Leu Val Thr Ala Pro Ala Ala Gly Tyr
 1 5 10 15
 Leu Val Glu Arg Ile His Pro Gly Ile Leu Gly Ser Ile Gly Met Ala
 20 25 30
 Leu Phe Cys Ile Gly Leu Tyr Ser Leu Ser Thr Leu Thr Ala Asp Ser
 35 40 45
 Ser Val Thr Gly Ile Ile Leu Arg Leu Met Leu Cys Gly Ala Gly Phe
 50 55 60
 Gly Leu Phe Gln Thr Pro Asn Asn Ser Thr Ile Ile Ser Ser Ala Pro
 65 70 75 80
 Thr Arg Arg Ser Gly Gly Ala Ser Gly Met Leu Gly Met Ala Arg Leu

				85					90				95				
Leu	Gly	Gln	Thr	Phe	Gly	Thr	Thr	Leu	Val	Ala	Leu	Leu	Phe	Ser	Phe		
				100					105				110				
Val	Val	His	Glu	Lys	Ser	Thr	Ala	Val	Cys	Leu	Ile	Ala	Gly	Ser	Gly		
		115					120					125					
Phe	Ala	Phe	Val	Ala	Ala	Val	Val	Ser	Ser	Met	Arg	Leu	Ser	Gln	Pro		
	130					135					140						
Ser	Thr	Leu	Lys	Thr	Lys	Pro	Arg										
145					150												

<210> 7787

<211> 819

<212> PRT

<213> B.fragilis

<400> 7787

Val	Arg	Arg	Pro	Ala	Glu	Lys	Val	Asn	Ile	Leu	Lys	Lys	Asn	Leu	Lys		
1			5					10					15				
Leu	Ser	Gly	Val	Lys	Val	Met	Asn	Tyr	Ala	Glu	Ile	Cys	Ile	Ile	Lys		
		20					25					30					
Arg	Asp	Gly	Lys	Arg	Glu	Asp	Phe	Ser	Ile	Ser	Lys	Ile	Lys	Asn	Ala		
	35					40					45						
Val	Ser	Lys	Ala	Phe	Ser	Ala	Thr	Gly	Ile	Asn	Asp	Glu	Gln	Gln	Leu		
	50				55				60								
Ile	Ala	Asp	Ile	Thr	Met	Asn	Val	Ile	Gly	Gln	Phe	Ala	Ser	Pro	Thr		
65				70				75						80			
Ile	Thr	Val	Glu	Glu	Ile	Gln	Asp	Leu	Val	Glu	Lys	Glu	Leu	Met	Lys		
			85				90					95					
Val	Arg	Pro	Glu	Val	Ala	Lys	Lys	Tyr	Ile	Ile	Tyr	Arg	Glu	Trp	Arg		
	100						105				110						
Asn	Thr	Glu	Arg	Asp	Lys	Lys	Thr	Gln	Met	Lys	His	Val	Met	Asp	Gly		
	115					120					125						
Ile	Val	Ala	Ile	Asp	Lys	Asn	Asp	Val	Asn	Leu	Ser	Asn	Ala	Asn	Met		
	130				135					140							
Ser	Ser	His	Thr	Pro	Ala	Gly	Gln	Met	Met	Thr	Phe	Ala	Ser	Glu	Val		
145				150				155						160			
Thr	Lys	Asp	Tyr	Thr	Tyr	Lys	Tyr	Leu	Leu	Pro	Lys	Arg	Phe	Ala	Glu		
		165					170					175					
Ala	His	Gln	Leu	Gly	Asp	Ile	His	Ile	His	Asp	Leu	Asp	Tyr	Tyr	Pro		
	180					185						190					
Thr	Lys	Thr	Thr	Thr	Cys	Ile	Gln	Tyr	Asp	Met	Asp	Asp	Leu	Phe	Glu		
	195					200					205						
Arg	Gly	Phe	Arg	Thr	Lys	Asn	Gly	Ser	Ile	Arg	Thr	Pro	Gln	Ser	Ile		
	210					215					220						
Gln	Ser	Tyr	Ala	Thr	Leu	Ala	Thr	Ile	Ile	Phe	Gln	Thr	Asn	Gln	Asn		
225					230					235				240			
Glu	Gln	His	Gly	Gly	Gln	Ala	Ile	Pro	Ala	Phe	Asp	Phe	Phe	Met	Ala		
		245					250					255					
Lys	Gly	Val	Ser	Lys	Ser	Phe	Arg	Lys	His	Leu	Ala	Ser	Phe	Ile	Ser		
	260					265						270					
Phe	Tyr	Val	Gln	Met	Asn	Lys	Gly	Glu	Glu	Ile	Glu	Glu	Lys	Ala	Ile		
	275					280					285						
Arg	Thr	Val	Ile	Ala	Glu	His	Leu	Ser	Ser	Ile	Lys	Ala	Ser	Glu	Leu		
	290				295					300							
Glu	Arg	Glu	Thr	Leu	Arg	Met	Ala	Leu	Thr	Ala	Leu	Gln	Ile	Asn	Ile		
305				310						315				320			
Asp	Lys	Glu	His	Leu	Asn	Gln	Ile	Ile	Glu	Lys	Ala	Phe	Val	Gln	Thr		
		325						330				335					
Gln	Lys	Asp	Thr	His	Gln	Ala	Met	Glu	Gly	Phe	Ile	His	Asn	Leu	Asn		

Lys His Gly

<210> 7788

<211> 481

<212> PRT

<213> B.fragilis

<400> 7788

Tyr	Phe	Thr	Phe	Leu	Ile	Val	Tyr	Met	Ser	Glu	Ile	Ser	Val	Thr	Lys
1				5					10					15	
Lys	Asp	Ile	Ile	Trp	Gly	Tyr	Leu	Ala	Gln	Phe	Phe	Leu	Val	Ala	Ser
		20						25					30		
Gly	Leu	Ile	Thr	Leu	Pro	Leu	Val	Leu	Asn	Ile	Leu	Ser	Ala	Glu	Glu
		35					40					45			
Ile	Gly	Met	Asn	Tyr	Leu	Met	Leu	Thr	Ile	Gly	Ser	Leu	Val	Ser	Leu
	50					55					60				
Leu	Asp	Phe	Gly	Phe	Ala	Pro	Gln	Phe	Gly	Arg	Asn	Ile	Thr	Tyr	Ile
65					70					75					80
Phe	Ser	Gly	Ala	Gln	Lys	Leu	Gln	Lys	Glu	Gly	Ile	Ser	Thr	Glu	Lys
				85					90					95	
Gly	Asp	Leu	Asn	Tyr	Lys	Leu	Leu	Ala	Thr	Met	Ile	Ser	Ala	Ala	Lys
			100					105					110		
Leu	Ile	Tyr	Lys	Val	Met	Ala	Val	Val	Val	Leu	Val	Ile	Met	Leu	Thr
		115					120					125			
Leu	Gly	Thr	Val	Tyr	Ile	Tyr	Lys	Ala	Thr	Met	Gly	Phe	Thr	Ser	Val
	130						135				140				
Lys	Tyr	Ala	Leu	Leu	Ile	Trp	Val	Ile	Tyr	Ser	Ile	Ser	Ala	Phe	Phe
145					150					155					160
Ala	Ile	Tyr	Tyr	Thr	Tyr	Tyr	Thr	Ser	Leu	Leu	Met	Gly	Lys	Gly	Leu
				165					170					175	
Ile	Met	Glu	Ser	Lys	Lys	Ala	Met	Leu	Ala	Ser	Arg	Ile	Thr	Cys	Ile
			180					185					190		
Leu	Leu	Thr	Phe	Ile	Phe	Leu	Phe	Met	Gly	Trp	Gly	Leu	Leu	Gly	Ile
		195					200					205			
Ala	Val	Ala	Asn	Leu	Leu	Ala	Pro	Phe	Val	Asn	Arg	Tyr	Phe	Ser	Tyr
	210					215						220			
Arg	Tyr	Phe	Phe	Val	Pro	Glu	Leu	Arg	Asn	Lys	Ile	Glu	Asn	Tyr	Tyr
225					230					235					240
Val	Asn	Arg	Lys	Glu	Lys	Trp	Glu	Ile	Phe	Ser	Ile	Ile	Trp	Tyr	Asn
			245						250					255	
Ala	Lys	Lys	Leu	Gly	Met	Val	Phe	Ile	Gly	Asn	Tyr	Ala	Ile	Ser	Lys
			260					265					270		
Leu	Ser	Leu	Phe	Leu	Ala	Gly	Leu	Tyr	Leu	Ser	Leu	Gln	Glu	Ile	Ala
		275					280					285			
Ser	Tyr	Gly	Leu	Met	Ile	Gln	Leu	Val	Thr	Val	Leu	Thr	Val	Ser	Ser
		290				295					300				
Val	Thr	Leu	Phe	Thr	Ile	Ser	Glu	Pro	Tyr	Leu	Ile	Ser	Leu	Arg	Ile
305					310					315					320
Glu	Gly	Lys	Arg	Ser	Glu	Leu	Leu	Lys	Arg	Phe	Ser	Phe	Thr	Met	Asn
			325						330					335	
Val	Tyr	Tyr	Cys	Leu	Phe	Ile	Ile	Gly	Ser	Leu	Phe	Leu	Ile	Ile	Leu
			340					345					350		
Ala	Pro	Leu	Leu	Glu	Phe	Ile	Gly	Ser	Asn	Thr	Lys	Leu	Pro	Ser	
		355					360				365				
Thr	Tyr	Ile	Leu	Thr	Leu	Tyr	Cys	Phe	Val	Ile	Phe	Leu	Glu	Asn	Asn
		370				375					380				
Asn	Cys	Asn	Phe	Ser	Thr	Phe	Ile	Leu	Leu	Asp	Asn	Lys	Ile	Pro	Phe
385					390					395					400

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

Met Trp Pro Ser Leu Cys Thr Gly Val Phe Ile Ile Met Gly Asp Phe
 405 410 415
 Leu Ile Leu Gln Tyr Thr Ser Phe Ala Leu Gly Gly Leu Ile Met Val
 420 425 430
 Gln Leu Ile Cys Gln Ser Ala Tyr Val Asn Trp Arg Trp Ile Tyr Val
 435 440 445
 Val Cys Arg Asp Phe Lys Ile Ser Phe Ser Ser Phe Leu Ala Leu Gly
 450 455 460
 Leu Lys Glu Thr Phe Asn Lys Ile Arg Leu Ser Leu Phe Met Leu Lys
 465 470 475 480
 Tyr

<210> 7789
 <211> 94
 <212> PRT
 <213> B.fragilis

<400> 7789
 Trp Gly Ile Thr Gly Thr Thr Ser Met Ile Met Leu Met Lys Arg Arg
 1 5 10 15
 Lys Glu Thr Met Tyr Arg Leu Phe Leu Ile Leu Asn Leu Asp Tyr Cys
 20 25 30
 Glu Ala Lys Ile Val Tyr His Trp Ile Lys Asn Lys Gln Cys Tyr Leu
 35 40 45
 Lys Asn Lys Lys Thr Asp Ala Ser Tyr Phe Leu Pro Arg Ser Ile Thr
 50 55 60
 Glu Pro Phe Phe Val Asn Asp Gln Arg Leu Lys Ile Asp Ser Met Leu
 65 70 75 80
 Leu Cys Val Leu Cys Gly Glu Phe Arg His Thr Cys Leu Lys
 85 90

<210> 7790
 <211> 334
 <212> PRT
 <213> B.fragilis

<400> 7790
 Tyr Val Asn Ala Met Thr Thr Pro Thr Val Ser Phe Ile Ile Pro Val
 1 5 10 15
 Tyr Asn Val Asp Lys Tyr Leu Ser Gln Cys Ile Glu Ser Ile Leu Val
 20 25 30
 Gln Ser Tyr Arg Asn Phe Glu Ile Ile Leu Val Asn Asp Gly Ser Ile
 35 40 45
 Asp Asn Ser Pro Tyr Leu Cys Asp Ile Tyr Gln Ser Lys Asp Glu Arg
 50 55 60
 Val Lys Thr Val His Lys Lys Asn Gly Gly Leu Ser Asp Ala Arg Asn
 65 70 75 80
 Val Gly Leu Thr Leu Ala Lys Gly Glu Tyr Ile Ile Phe Leu Asp Ser
 85 90 95
 Asp Asp Phe Trp Ile Ser Gln Asn Asp Leu Gln Leu Leu Val His Arg
 100 105 110
 Leu Asp Ser Leu Ile Asn Cys Asp Phe Met Cys Phe Asn Cys Cys Tyr
 115 120 125
 Tyr Tyr Pro Ser Lys His Leu Phe Lys Arg Trp Thr Pro Phe Ala Asp
 130 135 140
 Glu Leu Leu Leu Ser Val Asp Lys Ser Lys Ser Ile Ile Ser Leu Val
 145 150 155 160
 Ser Ser Gly Thr Phe Pro Met Ser Ala Cys Leu Lys Ile Ile Arg Arg

165 170 175
 Asn Phe Leu Leu Glu Asn Asn Ile Thr Phe Gln Lys Gly Ile Gln Ser
 180 185 190
 Glu Asp Ile Leu Trp Phe Met Glu Leu Leu Glu Lys Ala His Ser Ile
 195 200 205
 Ala Phe Leu Asn Gln Tyr Ile Tyr Ala Tyr Arg Arg Glu Val Glu Asn
 210 215 220
 Ser Ile Thr Ser Ser Phe Thr Pro Lys Lys Tyr Asn Asp Leu Phe Ser
 225 230 235 240
 Val Leu Glu Asn Gly Ile Gln Arg Ile Glu Ala Tyr Lys Trp Asp Ile
 245 250 255
 Gln Thr Lys Asn Ala Leu Leu Ser Phe Met Ala Tyr Glu Tyr Cys Thr
 260 265 270
 Leu Leu Ala Phe Leu Tyr Tyr Phe Pro Phe Ala Leu Arg Lys Glu Leu
 275 280 285
 Glu Gly Lys Leu Phe Gln Tyr Asn Trp Leu Leu Lys Tyr Lys Leu Asn
 290 295 300
 Pro Lys Val Lys Lys Val Ser Phe Cys Met Arg Phe Leu Gly Lys Arg
 305 310 315 320
 Leu Thr Leu Leu Leu Tyr Arg Tyr Met Lys Asn Leu Val
 325 330

<210> 7791
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 7791
 Thr Val Ile Ala Ile Glu Val Asn Ile Ser Ile Met Arg Ala Phe Val
 1 5 10 15
 Ala Val Arg Gln Leu Val Ser Ala Leu Pro Val Asn Asp Ile Thr Arg
 20 25 30
 Leu Gln Asp Glu Ile Lys Glu Leu Lys Glu Tyr Val Glu Ala Ala Phe
 35 40 45
 Ala Asp Tyr Asn Asp Ile Asn Glu Asp Thr Arg Met Gln Leu Glu Leu
 50 55 60
 Ile Asn Gln Ala Ile Ala Glu Leu Gln Ala Lys Asp Lys Gln Ala Gly
 65 70 75 80
 Gly Lys Thr Arg Asn Pro Ile Gly Phe Ile Ser Tyr Asn Lys Glu Lys
 85 90 95

<210> 7792
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 7792
 Tyr Asn Leu Tyr Tyr Leu Cys Val Met Lys Lys Ile Ile Thr Tyr Lys
 1 5 10 15
 Asn Tyr Phe Ala Glu Phe Met Asp Lys Leu Ser Glu Leu Glu Arg Lys
 20 25 30
 Lys Ile Gln Arg Ala Leu Ser Leu Phe Lys Ala Glu Asp Lys Ile Pro
 35 40 45
 Ser His Tyr Ile Lys Phe Ile Arg Asp Gly Val Tyr Glu Phe Arg Val
 50 55 60
 Ala Cys Gly Asn Asn Glu Leu Arg Ile Phe Phe Ile Tyr Asp Gly Glu
 65 70 75 80
 Asn Val Val Val Leu Phe Asn Cys Phe Arg Lys Lys Thr Gln Lys Thr
 85 90 95

Pro Asp Asn Glu Ile Lys Lys Ala Ile Asn Leu Lys Lys Glu Tyr Tyr
 100 105 110
 Glu Ala Lys Gly Asn Lys
 115

<210> 7793
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 7793
 Ser Met Ile Leu Ser Ser Leu Val His Thr Asp Phe Gln Pro Tyr Leu
 1 5 10 15
 Leu Pro Asn Thr Asp Ala Trp Ala Leu Pro Arg Asp Lys Ala Leu Glu
 20 25 30
 Leu Leu Val Tyr Leu Lys Gln Gln Gly Val Arg Gln Ile Tyr Cys Val
 35 40 45
 Pro Pro Val Lys Val Glu Asn Glu Gly Asn Ala Phe Ser Phe Leu Lys
 50 55 60
 Asp Ala Phe Gln Tyr Leu Gln Gln Gln Tyr Ser Gly Asn Ile Ser Leu
 65 70 75 80
 Arg Leu Ser Ala Arg Tyr Arg Leu Asp Glu Gly Phe Pro Ala Leu Leu
 85 90 95
 Glu Lys Gly Asp Leu Leu Thr Ile Gly Gly Gly Lys Glu Leu Leu Val
 100 105 110
 Asp Val Ser Pro Leu Gln Gln Pro Glu Gly Leu Ser Glu Met Ile His
 115 120 125
 Ala Ile Cys Arg Ser Gly Tyr Ile Pro Val Leu Met Gln Pro Glu Arg
 130 135 140
 Ser Leu Tyr Trp Gly Thr Glu Asp Tyr Leu His Leu Arg Glu Ser Gly
 145 150 155 160
 Cys Arg Leu Met Leu Asn Leu Tyr Ser Leu Phe Gly Tyr Asn Gly Asp
 165 170 175
 Gly Ala Leu Asn Tyr Ser Arg Met Leu Leu Arg Lys Glu Trp Tyr Thr
 180 185 190
 Tyr Leu Cys Ser Gly Arg Glu Asp Thr Lys Val Met Arg Tyr Gly Glu
 195 200 205
 Ser Phe Ser Ile Glu Asp Asp Asp Leu Ala Met Lys Leu Gln Glu
 210 215 220
 Ile Glu Arg Asn Ser Arg Leu Leu Trp Ser Ala Thr Glu Asn Gly
 225 230 235

<210> 7794
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 7794
 Asn Lys Gln Tyr Thr Arg Ile Tyr Arg Asn Ile His Ile Arg Thr Thr
 1 5 10 15
 Asn Phe Ala Phe Val Ile Lys Lys Leu Ile Arg Arg Asn Glu Gln Lys
 20 25 30
 Lys Pro Asn Glu Gly Val Val Leu Asn Met Gly Asn Thr Pro Tyr Val
 35 40 45
 Val Ile Val Asn Glu Lys Ser Asp Glu Gly Gln Lys Val Leu Glu Ala
 50 55 60
 Leu Glu Glu Asn Ile Glu Lys Met Asp Ile Gly Ser His Arg Glu Leu
 65 70 75 80
 Val Ile Phe Phe Phe Val Trp Leu Asn His Gln Gln Lys Asp Pro Lys

				85					90					95			
Lys	Arg	Lys	Asn	Ile	Arg	Glu	Leu	Ala	Lys	Ile	Met	His	Arg	Ser	Leu		
			100						105					110			
Phe	Phe	Gly	Gln	Lys	His	Asn	Ser	Asn	Glu	Glu	Met	Lys	Pro	Asp	Ser		
		115					120					125					
Ile	Glu	Thr	Glu	Ile	Phe	Lys	Ile	Leu	Arg	Ile	Leu	Lys	Ser	Met	Lys		
	130					135					140						
Lys	Ala	Glu	Asp	Lys	Asp	Leu	Ile	Ile	Asn	Leu	Leu	Asp	Asp	Ile	Ser		
145					150					155					160		
Leu	Phe	Leu	Asp	Glu	Asn	Val											
				165													

<210> 7795
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 7795																	
Asp	Trp	Leu	His	Leu	His	Gln	Phe	Met	Asn	Phe	Thr	Ala	Met	Asp	Ile		
1			5						10					15			
Thr	Leu	Arg	Thr	Leu	Thr	Glu	Asn	Asp	Leu	Pro	Phe	Val	Lys	Asp	Ile		
		20						25					30				
Tyr	Asp	Tyr	Thr	Leu	His	Thr	Thr	Val	Val	Tyr	Phe	Val	His	Cys			
	35					40					45						
Ala	Ser	Ile	Asp	Glu	Leu	Lys	Asn	Tyr	Ile	Pro	Val	Gly	Asp	Pro	Val		
	50					55					60						
Tyr	Arg	Ser	Phe	Ile	Ile	Glu	Thr	Pro	Glu	Gly	Ala	Pro	Cys	Gly	Phe		
65				70					75					80			
Cys	Tyr	Phe	Ala	Arg	Phe	Lys	Pro	Arg	Glu	Ala	Phe	Arg	Ile	Ser	Val		
			85					90					95				
Glu	Leu	Thr	Leu	Tyr	Leu	Lys	Pro	Glu	Phe	Thr	Gly	Arg	Gly	Tyr	Gly		
		100						105					110				
Lys	Gln	Ala	Ile	Leu	Arg	Leu	Glu	Glu	Ile	Ile	Arg	Gln	Glu	Gly	Phe		
	115					120					125						
Ser	Asn	Ile	Met	Ala	Leu	Ile	Ser	Gly	Glu	Asn	Glu	Ala	Ser	Ile	Arg		
	130					135					140						
Leu	Phe	Glu	Lys	Cys	Gly	Phe	Glu	Cys	Cys	Ala	Asn	Ile	Arg	Gln	Val		
145				150					155					160			
Ala	Glu	Lys	Phe	Gly	Lys	Lys	Leu	Asp	Leu	Arg	Met	Tyr	Gln	Lys	Ile		
				165				170						175			
Ile	Ser	Asp	Asn	Ser	His	Leu	Thr	Pro									
			180					185									

<210> 7796
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7796																	
His	Ser	Val	Lys	Thr	Cys	Ser	Leu	Asp	Val	Asn	Lys	Lys	Phe	Phe	Lys		
1			5						10					15			
Cys	Lys	Arg	Leu	Val	Ile	Cys	Ala	Gln	Glu	Pro	Asp	Asn	Leu	Gln	Lys		
		20						25				30					
Ala	Leu	Thr	Met	Leu	Ile	Glu	Glu	Arg	Tyr	Lys	Asp	Glu	Asp	Thr	Gly		
		35				40						45					
Ser	Asn	Gly	Val	Asn	Ser	Leu	Pro	Lys	Leu	Glu	Leu						
	50					55					60						

<210> 7797

<211> 370
 <212> PRT
 <213> B.fragilis

<400> 7797

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Leu Lys Thr Lys Ser Leu Ile Asp Met Lys Pro Tyr Leu Leu Leu Thr
1      5      10      15
Pro Gly Pro Leu Thr Thr Ser Glu Thr Val Lys Glu Thr Met Met Thr
20      25      30
Asp Trp Cys Thr Trp Asp Glu Asp Tyr Asn Leu His Ile Val Glu Ala
35      40      45
Leu Arg Lys Glu Leu Val Gly Ile Ala Thr Arg Asn Thr Glu Glu Tyr
50      55      60
Thr Ser Val Leu Leu Gln Gly Ser Gly Thr Tyr Cys Val Glu Ala Val
65      70      75      80
Ile Gly Ala Ala Ile Gly Lys Asn Asp Lys Leu Leu Ile Cys Ser Asn
85      90      95
Gly Ala Tyr Gly Asp Arg Met Gly Asn Ile Ala Glu Tyr Tyr His Ile
100     105     110
Asp Tyr Glu Leu Leu Ala Phe Asp Glu Thr Glu Gln Val Ser Val Asp
115     120     125
Tyr Val Asp Asp Tyr Leu Ser Asn Asn Ser Asp Val Thr His Val Ala
130     135     140
Phe Val His Cys Glu Thr Thr Thr Gly Ile Leu Asn Pro Leu Lys Glu
145     150     155     160
Leu Ala His Val Val Lys Met His Gly Lys Lys Leu Ile Val Asp Ala
165     170     175
Met Ser Ser Phe Gly Gly Ile Pro Met Asp Val Ser Glu Leu Gly Ile
180     185     190
Asp Phe Leu Ile Ser Ser Ala Asn Lys Cys Ile Gln Gly Val Pro Gly
195     200     205
Phe Gly Phe Ile Ile Ala Arg Arg Ser Glu Leu Val Arg Cys Lys Gly
210     215     220
Val Ala Arg Ser Leu Ser Leu Asp Ile Tyr Asp Gln Trp Glu Thr Met
225     230     235     240
Glu Lys Gly His Gly Lys Trp Arg Phe Thr Ser Pro Thr His Val Val
245     250     255
Arg Ala Phe Lys Gln Ala Leu Thr Glu Leu Ile Glu Glu Gly Gly Val
260     265     270
Glu Ala Arg His Arg Arg Tyr Cys Glu Asn His Arg Val Leu Val Glu
275     280     285
Gly Met Arg Ser Leu Gly Phe Val Thr Leu Leu Asp Asp Ala Ile Gln
290     295     300
Ser Pro Ile Ile Thr Ser Phe Leu Tyr Pro Lys Thr Gly Phe Asp Phe
305     310     315     320
Lys Ala Phe Tyr Thr Ala Leu Lys Ser Lys Gly Phe Val Ile Tyr Pro
325     330     335
Gly Lys Ile Ser Lys Ala Asp Thr Phe Arg Ile Gly Asn Ile Gly Asp
340     345     350
Val His Pro Glu Asp Phe Ala Arg Leu Val Glu Val Val Arg Glu Thr
355     360     365
Glu Tyr
370

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<210> 7798
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 7798

Val Phe Ala Lys Ser Ser Asn His Ser Pro Pro Lys Pro Gly Ser Ser
 1 5 10 15
 Thr Arg Tyr His Gln Glu Ile Asn Asp Tyr Leu Leu Met Ile Ser Glu
 20 25 30
 Val Thr Pro Ile Leu Phe Gln Arg Ser Ala Lys Leu Leu Ile Tyr Thr
 35 40 45
 Lys Ser Ala Leu Asp Lys Lys Lys Ala Arg Thr Glu Met Leu Tyr Leu
 50 55 60
 Cys Phe Phe Val Asn
 65

<210> 7799

<211> 388

<212> PRT

<213> B.fragilis

<400> 7799

Gln Ile Asn Lys Ser Ile Ile Lys Asn Met Lys Thr Tyr Leu Val Thr
 1 5 10 15
 Gly Ala Ala Gly Phe Ile Gly Ala Asn Tyr Leu Lys Tyr Ile Leu Ala
 20 25 30
 Lys His Ser Asp Ile Lys Val Val Val Leu Asp Ala Leu Thr Tyr Ala
 35 40 45
 Gly Asn Leu Gly Thr Ile Ala Asn Asp Ile Asp Asn Glu Arg Cys Phe
 50 55 60
 Phe Val Lys Gly Asp Ile Cys Asp Arg Glu Leu Ala Asp Arg Leu Phe
 65 70 75 80
 Gly Glu Tyr Lys Phe Asp Tyr Val Val Asn Phe Ala Ala Glu Ser His
 85 90 95
 Val Asp Arg Ser Ile Glu Asn Pro Gln Leu Phe Leu Met Thr Asn Ile
 100 105 110
 Leu Gly Thr Gln Asn Leu Leu Asp Ala Ala Arg Arg Ala Trp Val Thr
 115 120 125
 Gly Lys Asp Glu Tyr Gly Tyr Pro Thr Trp Arg Lys Gly Val Arg Tyr
 130 135 140
 His Gln Val Ser Thr Asp Glu Val Tyr Ser Ser Leu Gly Ala Glu Ser
 145 150 155 160
 Tyr Phe His Glu Thr Thr Pro Leu Cys Pro His Ser Pro Tyr Ser Ala
 165 170 175
 Ser Lys Asn His Ala Asp Met Val Val Met Ala Tyr His Asp Thr Tyr
 180 185 190
 Lys Met Pro Val Thr Ile Thr Arg Cys Ser Asn Asn Tyr Gly Pro Tyr
 195 200 205
 His Phe Pro Glu Lys Leu Ile Pro Leu Ile Ile Lys Asn Ile Leu Glu
 210 215 220
 Gly Lys Lys Leu Pro Val Tyr Gly Asp Gly Ser Asn Val Arg Asp Trp
 225 230 235 240
 Leu Tyr Val Glu Asp His Cys Lys Ala Ile Asp Leu Val Val Arg Glu
 245 250 255
 Gly Val Glu Gly Glu Val Tyr Asn Val Gly Gly His Asn Glu Lys Thr
 260 265 270
 Asn Leu Glu Ile Val Lys Leu Thr Ile Ala Thr Ile His Arg Leu Met
 275 280 285
 Ala Glu His Pro Glu Tyr Arg Glu Val Leu Lys Lys Lys Glu Lys Asn
 290 295 300
 Ala Asp Gly Glu Ile Ser Ile Asp Trp Ile Asn Glu Asp Leu Ile Thr
 305 310 315 320
 Phe Val Lys Asp Arg Leu Gly His Asp Gln Arg Tyr Ala Ile Asp Pro

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          325          330          335
Thr Lys Ile Thr Asn Ala Leu Gly Trp Tyr Pro Glu Thr Lys Phe Glu
          340          345          350
Val Gly Ile Val Lys Thr Ile Glu Trp Tyr Leu Asn Asn Gln Glu Trp
          355          360          365
Val Glu Glu Val Thr Ser Gly Asp Tyr Gln Lys Tyr Tyr Glu Arg Met
          370          375          380
Tyr Ser Lys Arg
385

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<210> 7800
 <211> 456
 <212> PRT
 <213> B.fragilis

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<400> 7800
Ile Val Asn Asn Leu Met Glu Thr Phe Leu Ile Arg Ala Leu Gln Leu
1          5          10          15
Ile Met Ser Leu Ser Leu Leu Val Ile Ile His Glu Gly Gly His Phe
          20          25          30
Leu Phe Ala Arg Leu Phe Lys Val Arg Val Glu Lys Phe Cys Leu Phe
          35          40          45
Phe Asp Pro Trp Phe Thr Leu Phe Lys Phe Lys Pro Lys Lys Ser Glu
          50          55          60
Thr Glu Tyr Ala Val Gly Trp Leu Pro Leu Gly Gly Tyr Val Lys Ile
65          70          75          80
Ala Gly Met Ile Asp Glu Ser Met Asp Thr Glu Gln Met Lys Gln Pro
          85          90          95
Glu Gln Pro Trp Glu Phe Arg Ser Lys Pro Ala Trp Gln Arg Leu Leu
          100          105          110
Ile Met Val Gly Gly Val Leu Phe Asn Phe Leu Leu Ala Leu Phe Ile
          115          120          125
Tyr Ser Met Ile Leu Phe Lys Trp Gly Asp Gln Tyr Ile Pro Val Gln
          130          135          140
Lys Ala Pro Leu Gly Met Asp Phe Asn Glu Thr Ala Lys Ala Val Gly
145          150          155          160
Phe Gln Asp Gly Asp Ile Leu Leu Ser Ala Asp Gly Val Asp Phe Val
          165          170          175
Arg Tyr Asp Pro Asp Met Leu Ser Gln Ile Ala Asp Ala Arg Glu Val
          180          185          190
Thr Val Leu Arg Glu Gly Lys Lys Ala Ser Val Tyr Ile Pro Glu Asp
          195          200          205
Met Met Gln Arg Leu Leu Gly Asp Ser Val Arg Phe Ala Glu Phe Arg
210          215          220
Phe Pro Tyr Val Val Asp Ser Val Met Val Asn Ser Pro Ala Ala Met
225          230          235          240
Ala Gly Ile Gln Pro Gly Asp Ser Ile Ile Ala Leu Asp Gly Lys Pro
          245          250          255
Val Ser Tyr Thr Asp Phe Leu Ala Ala Met Ala Glu Arg Arg Gln Asn
          260          265          270
Ala Lys Ala Leu Gln Asn Asp Ser Ile Asn Pro His Gln Ile Ser Leu
          275          280          285
Thr Tyr Val Arg Asp Gly Lys Thr Asp Val Leu Thr Leu Thr Thr Asp
290          295          300
Ser Ala Phe Lys Ile Gly Val Ala Val Asn Pro Tyr Thr Asp Gln Leu
305          310          315          320
Leu Pro Val Ile Arg Lys Glu Tyr Gly Phe Phe Glu Ser Phe Pro Ala
          325          330          335
Gly Val Ala Leu Gly Val Lys Thr Leu Lys Gly Tyr Val Gly Asn Met

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          340          345          350
Lys Tyr Leu Phe Ser Lys Glu Gly Ala Lys Gln Leu Gly Gly Phe Gly
          355          360          365
Thr Ile Gly Ser Ile Phe Pro Ala Thr Trp Asn Trp His Gln Phe Trp
          370          375          380
Tyr Met Thr Ala Phe Leu Ser Ile Ile Leu Ala Phe Met Asn Ile Leu
385          390          395          400
Pro Ile Pro Ala Leu Asp Gly Gly His Val Leu Phe Leu Phe Tyr Glu
          405          410          415
Ile Ile Ala Arg Arg Lys Pro Ser Asp Lys Phe Met Glu Tyr Ala Gln
          420          425          430
Met Ala Gly Met Ile Leu Leu Phe Gly Leu Leu Ile Trp Ala Asn Phe
          435          440          445
Asn Asp Ile Leu Arg Phe Phe Phe
          450          455

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<210> 7801

<211> 221

<212> PRT

<213> B.fragilis

<400> 7801

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Gln Thr Asn Lys Gln Lys Gln Leu Lys Asn Asn Ser Asn Met Lys Arg
1          5          10          15
Ile Ile Ile Ala Leu Met Val Ala Val Thr Phe Cys Ser Leu Ala Met
          20          25          30
Ala Gln Asn Pro Thr Ile Thr Gln Asp Asn Lys Asn Ser Ser Asp Ser
          35          40          45
Thr Ile Val Thr Glu Tyr Thr Asp Ile Val Asp Ser Ser Thr Val Asp
          50          55          60
Thr Asp Tyr Gln Ser Ser Ser Phe Asp Phe Gly Asn Glu Phe Pro Phe
65          70          75          80
Asn Ile Asp Lys Gly Ala Ile Asn Gly Gly Ile Leu Thr Gly Leu Val
          85          90          95
Val Ile Ile Leu Ile Phe Gly Phe Pro Phe Phe Ile Val Phe Ile Ala
          100          105          110
Phe Tyr Phe Arg Tyr Lys Asn Arg Lys Ala Lys Tyr Arg Leu Met Glu
          115          120          125
Gln Ala Leu Ala Thr Gly Gln Pro Leu Pro Glu Gly Ile Phe Lys Asp
          130          135          140
Thr Leu Pro Gln Asp Tyr Arg Thr Lys Gly Ile Lys Asn Ile Cys Thr
145          150          155          160
Gly Ile Gly Leu Phe Ile Phe Leu Trp Ala Ile Thr Asp Glu Phe Ser
          165          170          175
Ile Gly Cys Ile Gly Leu Leu Val Met Phe Thr Gly Ile Gly Gln Trp
          180          185          190
Ile Ile Ser Arg Asn Gln Gln His Glu Arg Pro Glu Asp Pro Phe Thr
          195          200          205
Arg Pro Thr His Lys Asp Glu Thr Leu Asn Glu Gln Lys
          210          215          220

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<210> 7802

<211> 245

<212> PRT

<213> B.fragilis

<400> 7802

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Ser Glu Asn Asn His Val Asn Leu Arg Gln Phe Asn Asn Leu Ile Leu
1          5          10          15

```

Met Ser Cys Ile Leu His Ile Glu Thr Ser Thr Ala Val Cys Ser Val
 20 25 30
 Ala Val Ser Glu Asp Gly Gln Asn Ile Phe Val Lys Glu Asp Leu Lys
 35 40 45
 Gly Pro Ser His Ala Val Ser Leu Gly Val Phe Val Asp Glu Ala Leu
 50 55 60
 Ser Phe Ile Asp Ser His Ala Ile Pro Leu Asp Ala Val Ala Val Ser
 65 70 75 80
 Cys Gly Pro Gly Ser Tyr Thr Gly Leu Arg Ile Gly Val Ser Met Ala
 85 90 95
 Lys Gly Ile Cys Tyr Gly Arg Asn Val Pro Leu Ile Gly Ile Pro Thr
 100 105 110
 Leu Glu Val Leu Ser Val Pro Val Leu Leu Tyr His Glu Leu Pro Glu
 115 120 125
 Asp Ala Leu Leu Cys Pro Met Ile Asp Ala Arg Arg Met Glu Val Tyr
 130 135 140
 Ala Ala Ile Tyr Asp Arg Ala Leu Asn Val Lys Arg Glu Ile Ser Ala
 145 150 155 160
 Asp Ile Val Asp Glu Asn Ser Tyr Leu Glu Tyr Leu Glu Gln His Pro
 165 170 175
 Val Tyr Phe Phe Gly Asn Gly Ala Ala Lys Cys Arg Glu Lys Ile Thr
 180 185 190
 His Pro Asn Ala His Phe Ile Asp Asp Leu His Pro Leu Ala Lys Met
 195 200 205
 Met Phe Pro Leu Ala Glu Lys Thr Val Ala Ile Asn Asp Tyr Lys Asp
 210 215 220
 Val Ala Tyr Phe Glu Pro Phe Tyr Leu Lys Glu Phe Val Ala Ser Gln
 225 230 235 240
 Pro Lys Lys Leu Leu
 245

<210> 7803

<211> 305

<212> PRT

<213> B.fragilis

<400> 7803

Leu Leu Arg Asn His Ser Val Gln Pro Val Cys Ser Arg His Leu His
 1 5 10 15
 Asp Glu Pro His Leu Leu Ser Gln Asn Arg Glu Pro Leu Gly Gly Leu
 20 25 30
 Pro Ala His Asn Asp Gln Tyr Cys His Asn Leu Arg Trp Leu Leu Leu
 35 40 45
 Leu Phe Ser Ser Phe Tyr Trp Phe Cys Leu Thr His Phe Phe Ile Ser
 50 55 60
 Val Ala Lys Leu Val Ile Phe Phe Val Phe Arg Ser Leu Lys Gly Val
 65 70 75 80
 Lys Val Ser Phe Cys Tyr Ser Arg Phe Val Lys His Asn Ile Tyr Tyr
 85 90 95
 Leu Cys Val Leu Ile Ile Thr Ile Met Ile Glu Tyr Ile Lys Gly Glu
 100 105 110
 Ile Ala Glu Leu Ser Pro Ala Thr Ala Val Ile Asp Cys Asn Gly Leu
 115 120 125
 Gly Tyr Ala Val Asn Ile Ser Leu Asn Thr Tyr Ser Ala Ile Gln Gly
 130 135 140
 Lys Ser Ser Cys Lys Leu Tyr Ile Tyr Glu Ala Ile Arg Glu Asp Ala
 145 150 155 160
 Tyr Val Leu Tyr Gly Phe Ala Asp Lys Gln Glu Arg Glu Leu Phe Leu
 165 170 175

```

Leu Leu Ile Ser Val Ser Gly Ile Gly Gly Asn Thr Ala Arg Met Ile
    180                      185                      190
Leu Ser Ala Leu Ser Pro Ala Glu Leu Val Asn Val Ile Ser Thr Glu
    195                      200                      205
Asn Ala Asn Met Leu Lys Thr Val Lys Gly Ile Gly Leu Lys Thr Ala
    210                      215                      220
Gln Arg Val Ile Val Asp Leu Lys Asp Lys Ile Lys Thr Gly Ala Met
    225                      230                      235                      240
Ala Ala Thr Ala Val Gly Gly Ala Ala Gly Ala Leu Leu Pro Ala Met
    245                      250                      255
Asn Ala Glu Val Gln Glu Glu Ala Ile Ala Ala Leu Thr Met Leu Gly
    260                      265                      270
Phe Ala Ala Ala Pro Ser Gln Lys Ala Val Leu Ala Ile Leu Lys Glu
    275                      280                      285
Glu Pro Asp Ala Pro Val Glu Lys Val Ile Lys Leu Ala Leu Lys Arg
    290                      295                      300
Leu
305

```

<210> 7804

<211> 310

<212> PRT

<213> B.fragilis

<400> 7804

```

Ser Val Cys Lys Gly Thr Thr Phe Arg Ser Ser Leu Ser Thr Leu His
1      5      10      15
Ser Lys Phe Val Phe Leu Pro Ser Ile Thr Lys Asn Asn Lys Met Lys
    20      25      30
Lys Leu Ile Val Leu Thr Cys Thr Leu Ser Leu Leu Thr Ala Cys Gly
    35      40      45
Asp Ser Ile Glu Lys Lys Ala Gly Glu Lys Leu Ala Ala Ala Arg Ala
    50      55      60
Ala Phe Glu His Asn Asp Tyr Asn Glu Ala Lys Leu Gln Ile Asp Ser
    65      70      75      80
Ile Lys Ile Leu Tyr Pro Lys Ala Phe Asp Thr Arg Lys Glu Gly Ile
    85      90      95
Lys Leu Met Gln Gln Val Glu Leu Lys Glu Gln Gln Glu Ser Leu Val
    100     105     110
Tyr Leu Asp Ser Met Leu Gln Val Lys Gln Lys Glu Phe Glu Ala Ile
    115     120     125
Lys Asn Lys Tyr Thr Phe Glu Lys Asn Glu Glu Tyr Gln Lys Ile Gly
    130     135     140
Asn Tyr Phe Trp Pro Thr Gln Thr Val Glu Lys Asn Leu His Arg Ser
    145     150     155     160
Phe Leu Arg Phe Gln Val Asn Glu Gln Gly Val Met Thr Leu Thr Ser
    165     170     175
Ile Tyr Cys Gly Pro Ser Asn Ile His His Val Ala Val Lys Val Ile
    180     185     190
Ala Pro Asp Gly Ser Phe Ala Glu Thr Pro Ala Ser Asn Asp Ser Tyr
    195     200     205
Glu Thr Thr Asp Leu Gly Glu Lys Ile Glu Lys Ala Asp Tyr Lys Met
    210     215     220
Gly Glu Asp Gly Asn Val Leu Ser Phe Leu Tyr Met Asn Arg Asp Lys
    225     230     235     240
Lys Asn Ile Arg Val Glu Tyr Leu Gly Glu Arg Lys Phe Ser Thr Thr
    245     250     255
Met Thr Pro Ser Asp Arg Glu Ala Leu Val Gly Thr Tyr Glu Leu Ala
    260     265     270

```


Lys Leu Leu Ser Ser Ile Arg Gln Ile Gln Gln Glu Lys Glu Glu Ala
 275 280 285
 Asn Leu Lys Ile Glu Phe Val Lys Arg Lys Met Glu Gln Lys Ala Gln
 290 295 300
 Glu Glu Ala Ala Glu Lys
 305 310

<210> 7805
 <211> 202
 <212> PRT
 <213> B.fragilis

<400> 7805
 His Met Ala Lys Thr Lys Thr Gly Ile Phe Ser Gly Ser Phe Asn Pro
 1 5 10 15
 Ile His Ile Gly His Leu Ala Leu Ala Asn Tyr Leu Cys Glu Phe Glu
 20 25 30
 Gly Leu Asp Glu Val Trp Phe Met Val Thr Pro His Asn Pro Phe Lys
 35 40 45
 Asn Gln Ala Asp Leu Trp Pro Asp Glu Leu Arg Leu Gln Leu Val Gln
 50 55 60
 Leu Ala Ile Glu Gly Tyr Pro Arg Phe Arg Val Ser Asp Phe Glu Phe
 65 70 75 80
 His Leu Pro Arg Pro Ser Tyr Thr Ile His Thr Leu Asn Arg Leu Lys
 85 90 95
 Gln Glu Tyr Pro Glu Arg Glu Phe Gln Leu Ile Ile Gly Ser Asp Asn
 100 105 110
 Trp Met Val Phe Asp Arg Trp Phe Glu Ser Glu Arg Ile Val Ser Glu
 115 120 125
 Asn Lys Ile Leu Val Tyr Pro Arg Pro Gly Phe Ser Val Asp Lys Ser
 130 135 140
 Gln Leu Pro Pro Asn Val His Val Ala Asp Ser Pro Ile Phe Glu Ile
 145 150 155 160
 Ser Ser Thr Phe Ile Arg Glu Ala Leu Ala Thr Gly Lys Asp Ile Arg
 165 170 175
 Tyr Phe Leu His Pro Ala Val Tyr Lys Arg Ile Ile Gln Gln Thr Asp
 180 185 190
 Ser Ile Asp Ser Ser His Ser Cys His Thr
 195 200

<210> 7806
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7806
 Met Val Lys Lys Ile Thr Ile Ser Lys Arg Asp Arg Glu Lys Leu Lys
 1 5 10 15
 Glu Gln Lys Arg Lys Glu Lys Gln Gln Arg Lys Glu Glu Arg Gln Ser
 20 25 30
 Asn Gly Pro Ser Ser Phe Glu Asp Met Ile Ala Tyr Val Asp Gln Phe
 35 40 45
 Gly Val Leu His Ser Val Pro Gln Glu Arg Leu Glu Glu Val Asp
 50 55 60
 Ala Ser His Ile Glu Val Ser Val Pro Lys Gln Glu Asp Val Glu Val
 65 70 75 80
 Ala Pro Leu Met Gly Arg Ile Glu Tyr Phe Asn Ala Ala Lys Gly Tyr
 85 90 95
 Gly Phe Val Lys Asp Ala Asp Cys Gly Glu Lys Tyr Phe Phe His Ile

```

          100          105          110
Ser Ser Ala Pro Ala Thr Ile Ala Glu Gly Asp Arg Val Thr Phe Glu
      115          120          125
Ile Glu Arg Gly Met Arg Gly Met Asn Ala Val Arg Ile Ser Ile Val
      130          135          140
Thr Glu
145

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<210> 7807

<211> 438

<212> PRT

<213> B.fragilis

<400> 7807

```

Ser Pro Arg Asn Met Ala Ser Phe Val Ile Glu Gly Gly His Arg Leu
1          5          10          15
Ser Gly Glu Ile His Pro Gln Gly Ala Lys Asn Glu Val Leu Gln Ile
      20          25          30
Ile Cys Ala Thr Leu Leu Thr Ala Glu Glu Val Thr Val Asn Asn Ile
      35          40          45
Pro Asp Ile Leu Asp Val Asn Asn Leu Ile Gln Leu Met Arg Asp Met
      50          55          60
Gly Val Thr Val Ala Lys Thr Gly Val Asp Ser Tyr Ser Phe Lys Ala
65          70          75          80
Ala Asn Val Asp Leu Ala Tyr Leu Glu Ser Asp Asn Phe Leu Lys Lys
      85          90          95
Cys Ser Ser Leu Arg Gly Ser Val Met Leu Ile Gly Pro Met Val Ala
      100          105          110
Arg Phe Gly Lys Ala Met Ile Ser Lys Pro Gly Gly Asp Lys Ile Gly
      115          120          125
Arg Arg Arg Leu Asp Thr His Phe Ile Gly Ile Gln Asn Leu Gly Ala
      130          135          140
Asp Phe Thr Tyr Asn Glu Glu Arg Glu Ile Tyr Glu Ile Ser Ala Glu
145          150          155          160
Glu Leu Lys Gly Thr Ser Met Leu Leu Asp Glu Ala Ser Val Thr Gly
      165          170          175
Thr Ala Asn Ile Val Met Ala Ala Val Leu Ala Lys Gly Lys Thr Thr
      180          185          190
Ile Tyr Asn Ala Ala Cys Glu Pro Tyr Leu Gln Gln Leu Cys Lys Met
      195          200          205
Leu Asn Arg Met Gly Ala Lys Ile Ser Gly Ile Ala Ser Asn Leu Leu
      210          215          220
Thr Ile Glu Gly Val Glu Glu Leu His Gly Thr Asp His Thr Val Leu
225          230          235          240
Pro Asp Met Ile Glu Val Gly Ser Phe Ile Gly Met Ala Ala Met Thr
      245          250          255
Arg Ser Glu Ile Thr Ile Lys Asn Val Ser Tyr Glu Asn Leu Gly Ile
      260          265          270
Ile Pro Glu Ser Phe Arg Arg Leu Gly Ile Lys Leu Glu Gln Arg Gly
      275          280          285
Asp Asp Ile Phe Val Pro Ala Gln Asp Cys Tyr Gln Ile Glu Ser Phe
      290          295          300
Ile Asp Gly Ser Ile Met Thr Ile Ala Asp Ala Pro Trp Pro Gly Leu
305          310          315          320
Thr Pro Asp Leu Leu Ser Val Met Leu Val Val Ala Thr Gln Ala Lys
      325          330          335
Gly Ser Val Leu Ile His Gln Lys Met Phe Glu Ser Arg Leu Phe Phe
      340          345          350
Val Asp Lys Leu Ile Asp Met Gly Ala Gln Ile Ile Leu Cys Asp Pro

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      355              360              365
His Arg Ala Val Val Ile Gly His Asn His Gly Phe Thr Leu Arg Gly
  370              375              380
Gly Asn Met Thr Ser Pro Asp Ile Arg Ala Gly Ile Ala Leu Leu Ile
  385              390              395              400
Ala Ala Met Ser Ala Glu Gly Ile Ser Arg Ile His Asn Ile Glu Gln
      405              410              415
Ile Asp Arg Gly Tyr Gln Asn Ile Glu Gly Arg Leu Asn Ala Ile Gly
      420              425              430
Ala Arg Ile Thr Arg Ile
      435

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<210> 7808
 <211> 154
 <212> PRT
 <213> B.fragilis

```

<400> 7808
Gly Ile Met Asn Ile Leu Tyr Thr Tyr Pro Glu Thr Ile Val Asp Gly
  1              5              10              15
Glu Gly Ile Arg Tyr Ser Ile Tyr Leu Ala Gly Cys Arg His Gly Cys
      20              25              30
Pro Gly Cys His Asn Pro Glu Ser Trp Asn Pro Gln Ala Gly Glu Glu
      35              40              45
Leu Ser Glu Gly Arg Leu Ala Ser Ile Ile Arg Glu Ile Asn Ser Asn
      50              55              60
Pro Leu Leu Asp Gly Val Thr Phe Ser Gly Gly Asp Pro Phe Tyr Asp
  65              70              75              80
Pro Glu Ala Phe Leu Pro Val Ile Arg Arg Val Lys Thr Glu Thr Gly
      85              90              95
Gln Asn Ile Trp Cys Tyr Thr Gly Tyr Thr Tyr Glu Glu Ile Glu Ser
      100              105              110
Asp Pro Lys Leu Ala Ala Ile Leu Pro Tyr Ile Asp Val Leu Val Asp
      115              120              125
Gly Arg Phe Lys Gln Glu Leu Tyr Ser Pro His Leu Glu Phe Arg Gly
      130              135              140
Ser Ser Asn Gln Arg Ile Ile Lys Leu Lys
      145              150

```

<210> 7809
 <211> 210
 <212> PRT
 <213> B.fragilis

```

<400> 7809
Asp His Met Asn Ala Ser Lys Thr Asp Ile Arg Ile Thr Ser Pro Asp
  1              5              10              15
Arg Glu Val Leu Ser Tyr Ser Gly Val Pro Lys Glu His Pro Phe Val
      20              25              30
Lys Glu Ser Pro Glu Leu Phe Trp Tyr Ala Val Arg Val Thr Tyr Ser
      35              40              45
Arg Glu Leu Ala Leu Lys Glu Tyr Leu Asp Gly Glu Cys Ile Glu Asn
      50              55              60
Phe Ile Pro Met His Tyr Glu Tyr Ile Val Lys Asn Glu Arg Arg Val
  65              70              75              80
Arg Lys Leu Val Pro Ala Val His Asn Leu Val Phe Ile Arg Ser Ser
      85              90              95
Arg Glu Arg Ile Asp Arg Ile Lys Asp Glu Met Gly Met Thr Leu Pro
      100              105              110

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Ile Arg Tyr Ile Met Asp Arg Glu Ser Arg Gln Pro Ile Val Val Pro
    115          120          125
Thr Ser Gln Met Arg Ser Phe Met Ala Val Ala Gly Ser Tyr Asp Gln
    130          135          140
Gln Leu Val Tyr Leu Glu Pro Ser Ala Val Ala Phe Arg Lys Gly Gln
    145          150          155          160
Arg Val Arg Val Thr Gly Gly Ile Phe Ala Gly Val Glu Gly Glu Phe
          165          170          175
Ile Arg Val Lys Asn Asp Arg Arg Val Met Val Ser Ile Gln Gly Val
          180          185          190
Met Ala Val Ala Thr Thr Tyr Ile His Pro Ser Leu Ile Glu Pro Leu
          195          200          205
Asp Leu
    210

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<210> 7810

<211> 474

<212> PRT

<213> B.fragilis

<400> 7810

```

Gly Lys Met Lys Leu Pro Ile Ser Phe Ile Glu Ser Thr Arg Ala Leu
1          5          10          15
Met Gly Asp Glu Glu Tyr Gln Glu Leu Ser Val Ala Leu Glu Gln Glu
    20          25          30
Pro Pro Ala Ser Val Arg Leu Asn Ser Lys Phe Pro Gly Leu Ala Ala
    35          40          45
Cys Ser Ser Ile Ser Gly Arg Ile Pro Trp Ala Ala Glu Gly Tyr Tyr
    50          55          60
Leu Asn Gln Arg Leu Thr Phe Thr Phe Asp Pro Leu Phe His Ala Gly
    65          70          75          80
Cys Tyr Tyr Val Gln Glu Ala Ser Ser Met Phe Val Glu Gln Val Leu
          85          90          95
Arg Arg Tyr Val Thr Thr Pro Val Lys Met Leu Asp Leu Cys Ala Ala
          100          105          110
Pro Gly Gly Lys Ser Thr His Ala Arg Ser Val Leu Pro Glu Gly Ser
          115          120          125
Leu Leu Val Ala Asn Glu Val Ile Arg Asn Arg Ser Gln Ile Leu Ala
          130          135          140
Glu Asn Leu Thr Lys Trp Gly Tyr Ala Asp Val Val Val Thr Asn Asn
    145          150          155          160
Asp Pro Ser Asp Phe Ser Arg Ile Gly Ser Phe Phe Asp Val Ile Leu
          165          170          175
Thr Asp Val Pro Cys Ser Gly Glu Gly Met Phe Arg Lys Asp Pro Gly
          180          185          190
Ala Ile Glu Glu Trp Ser Pro Glu Asn Val Glu Ile Cys Trp Gln Arg
          195          200          205
Gln Arg Arg Ile Ile Thr Asp Ile Trp Pro Cys Leu Lys Pro Gly Gly
          210          215          220
Ile Leu Ile Tyr Ser Thr Cys Thr Tyr Asn Thr Arg Glu Asp Glu Glu
    225          230          235          240
Asn Ile Ala Trp Ile Arg Gln Glu Phe Gly Ala Glu Pro Leu Pro Leu
          245          250          255
Ala Val Pro Thr Glu Trp Asn Ile Thr Gly Ser Leu Leu Val Gly Val
          260          265          270
Asp Ala Pro Val Tyr Arg Phe Leu Pro His Lys Thr Gln Gly Glu Gly
          275          280          285
Phe Phe Leu Ala Ala Leu Arg Lys Pro Glu Glu Asp Arg Glu Ala Asp
          290          295          300

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Thr Asp Leu Phe Ser Pro Lys Lys Lys Lys Ser Lys Gly Asp Thr Ala
305          310          315          320
Ala Ser Pro Val Ser Lys Glu Asn Leu Ala Ile Ala Lys Ser Trp Leu
          325          330          335
Ala Ser Ser Asp Glu Tyr Asn Leu Leu Val Asn Gly Thr Ala Ile Thr
          340          345          350
Ala Phe Pro Val Tyr Tyr Gln Asn Asp Leu Ala Leu Leu Arg Gln Ser
          355          360          365
Leu Arg Ile Val Gln Ala Gly Thr Glu Val Ala Glu Val Lys Gly Lys
          370          375          380
Asp Leu Ile Pro Ala His Gly Leu Ala Met Ser Arg Leu Leu Lys Thr
385          390          395          400
Ser Val Phe Ser Thr Glu Ala Leu Thr Tyr Glu Gln Ala Ile Ala Tyr
          405          410          415
Leu Arg Lys Glu Ala Ile Val Leu Pro Pro Ser Val Pro Lys Gly Tyr
          420          425          430
Val Leu Val Thr Tyr Lys Glu Ile Pro Leu Gly Phe Val Lys Asn Ile
          435          440          445
Gly Asn Arg Ala Asn Asn Leu Tyr Pro Gln Glu Trp Arg Ile Arg Ser
          450          455          460
Gly Tyr Leu Pro Asp Asp Ile Arg Thr Leu
465          470

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<210> 7811
<211> 1032
<212> PRT
<213> B.fragilis

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<400> 7811
Arg Lys Lys Asn Met Leu Asn Lys Ile Ile His Phe Ser Leu Gln Asn
1          5          10          15
Arg Ile Leu Val Leu Val Ala Ser Val Leu Leu Leu Ile Gly Gly Thr
          20          25          30
Tyr Thr Ala Met His Thr Glu Val Asp Val Phe Pro Asp Leu Asn Ala
          35          40          45
Pro Thr Val Val Ile Met Thr Glu Ala Asn Gly Met Ala Ala Glu Glu
          50          55          60
Val Glu Gln Leu Val Thr Phe Pro Val Glu Thr Ala Val Asn Gly Ala
65          70          75          80
Thr Gly Val Arg Arg Val Arg Ser Ser Ser Thr Asn Gly Phe Ser Val
          85          90          95
Val Trp Val Glu Phe Asp Trp Gly Thr Asp Ile Tyr Leu Ala Arg Gln
          100          105          110
Ile Val Ser Glu Lys Leu Ala Ile Val Gly Glu Glu Leu Pro Ser Asn
          115          120          125
Val Gly Lys Pro Thr Leu Gly Pro Gln Ser Ser Ile Leu Gly Glu Val
          130          135          140
Leu Ile Ile Gly Leu Thr Ala Asp Ser Thr Ser Met Leu Asp Leu Arg
145          150          155          160
Thr Ile Ala Asp Trp Thr Ile Arg Pro Arg Leu Leu Ser Thr Gly Gly
          165          170          175
Val Ala Gln Val Ala Val Leu Gly Gly Glu Leu Lys Glu Tyr Gln Ile
          180          185          190
Gln Leu Asp Pro Glu Arg Met Arg His Tyr Gly Val Ser Met Asn Glu
          195          200          205
Val Met Thr Val Thr Arg Gly Met Asn Leu Asn Ala Asn Gly Gly Val
          210          215          220
Leu Tyr Glu Tyr Gly Asn Glu Tyr Ile Val Arg Gly Val Leu Ser Thr
225          230          235          240

```

Ala	Asn	Ile	Glu	Gln	Leu	Gly	Lys	Ala	Val	Val	Lys	Ser	Ile	Asp	Ser
				245					250					255	
Val	Pro	Val	Leu	Leu	Glu	Asp	Ile	Ala	Asp	Val	Arg	Ile	Gly	Pro	Lys
			260					265					270		
Ala	Pro	Lys	Leu	Gly	Thr	Ala	Ser	Glu	Arg	Gly	Lys	Pro	Ala	Val	Leu
		275					280					285			
Met	Thr	Val	Thr	Lys	Gln	Pro	Ala	Thr	Ser	Thr	Leu	Glu	Leu	Thr	Asp
	290					295					300				
Lys	Leu	Glu	Ala	Ser	Leu	Gln	Asp	Leu	Arg	Lys	Asn	Leu	Pro	Pro	Asp
305					310					315				320	
Val	Lys	Val	Ser	Thr	Asp	Ile	Phe	Arg	Gln	Ser	Arg	Phe	Ile	Asp	Ser
			325					330					335		
Ser	Ile	Ser	Asn	Val	Lys	Lys	Ser	Leu	Phe	Glu	Gly	Gly	Ile	Phe	Val
			340				345						350		
Val	Ile	Val	Leu	Phe	Leu	Phe	Leu	Ala	Asn	Val	Arg	Thr	Thr	Ile	Ile
	355						360					365			
Ser	Leu	Val	Thr	Leu	Pro	Leu	Ser	Leu	Leu	Val	Ser	Ile	Leu	Thr	Leu
	370					375					380				
His	Phe	Met	Gly	Leu	Thr	Ile	Asn	Thr	Met	Ser	Leu	Gly	Gly	Met	Ala
385					390					395					400
Ile	Ala	Ile	Gly	Ser	Leu	Val	Asp	Asp	Ala	Ile	Val	Asp	Val	Glu	Asn
			405						410					415	
Val	Tyr	Lys	Arg	Leu	Arg	Glu	Asn	Arg	Leu	Leu	Pro	Glu	Asn	Glu	Arg
			420					425					430		
Leu	Ser	Val	Ile	Gln	Val	Val	Phe	Asn	Ala	Ser	Lys	Glu	Val	Arg	Met
		435					440					445			
Pro	Ile	Leu	Asn	Ser	Thr	Leu	Ile	Ile	Val	Val	Ser	Phe	Val	Pro	Leu
	450					455					460				
Phe	Phe	Leu	Ser	Gly	Met	Glu	Gly	Arg	Met	Leu	Val	Pro	Leu	Gly	Ile
465				470					475					480	
Ala	Phe	Ile	Val	Ala	Leu	Phe	Ala	Ser	Thr	Ile	Val	Ala	Leu	Thr	Leu
			485					490					495		
Thr	Pro	Val	Leu	Cys	Ser	Tyr	Leu	Leu	Gly	Lys	Glu	Lys	Gly	Asp	Lys
		500					505						510		
Leu	Pro	Lys	Glu	Ala	Phe	Val	Ala	Arg	Trp	Met	Lys	Gly	Val	Tyr	Glu
	515					520					525				
Lys	Ala	Leu	Thr	Trp	Val	Leu	Ile	His	Lys	Arg	Leu	Thr	Leu	Gly	Ser
	530				535						540				
Thr	Ile	Gly	Leu	Phe	Ile	Ile	Thr	Leu	Gly	Phe	Phe	Phe	Thr	Leu	Gly
545				550					555					560	
Arg	Ser	Phe	Leu	Pro	Pro	Phe	Asn	Glu	Gly	Ser	Phe	Thr	Ile	Asn	Ile
			565				570						575		
Ser	Ser	Leu	Pro	Gly	Ile	Ser	Leu	Glu	Glu	Ser	Asp	Lys	Met	Gly	His
		580					585					590			
Arg	Ala	Glu	Glu	Leu	Leu	Leu	Ser	Ile	Pro	Glu	Ile	Gln	Thr	Val	Ala
	595					600						605			
Arg	Lys	Thr	Gly	Arg	Ala	Glu	Leu	Asp	Glu	His	Ala	Leu	Gly	Val	Asn
	610				615						620				
Val	Ser	Glu	Ile	Glu	Ala	Pro	Phe	Glu	Leu	Lys	Asp	Arg	Ser	Arg	Asn
625				630					635					640	
Glu	Leu	Met	Ala	Asp	Val	Arg	Glu	Lys	Leu	Gly	Thr	Ile	Thr	Gly	Ala
			645					650					655		
Asn	Ile	Glu	Ile	Gly	Gln	Pro	Ile	Ser	His	Arg	Ile	Asp	Ala	Met	Leu
		660					665					670			
Ser	Gly	Thr	Lys	Ala	Asn	Ile	Ala	Ile	Lys	Leu	Phe	Gly	Asp	Asp	Leu
		675				680						685			
Asn	Lys	Met	Phe	Ser	Leu	Gly	Asn	Gln	Ile	Lys	Glu	Ala	Ile	Gly	Asn
	690					695					700				
Ile	Pro	Gly	Ile	Ala	Asp	Leu	Asn	Val	Glu	Gln	Gln	Ile	Glu	Arg	Pro

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705              710              715              720
Gln Leu Lys Ile Thr Pro Lys Arg Glu Met Leu Ala Lys Tyr Gly Ile
              725              730              735
Thr Leu Pro Glu Phe Ser Glu Tyr Ile Asn Val Ala Leu Ala Gly Glu
              740              745              750
Val Ile Ser Gln Val Tyr Glu Gln Gly Lys Ser Phe Asp Leu Ile Val
              755              760              765
Lys Val Lys Asn Asn Phe Arg Asp Glu Ala Glu Lys Ile Arg Asn Leu
              770              775              780
Met Val Asp Thr Gln Asp Gly Lys Lys Val Pro Leu Ser Tyr Ile Ala
785              790              795              800
Asp Val Ala Ser Ser Met Gly Pro Asn Thr Ile Asn Arg Glu Asn Val
              805              810              815
Lys Arg Lys Ile Val Ile Ser Ala Asn Val Ala Asp Arg Asp Leu Arg
              820              825              830
Ser Val Val Asn Asp Ile Gln Lys Gln Val Asp Glu Gln Ile Lys Leu
              835              840              845
Pro Glu Gly Tyr His Ile Glu Tyr Gly Gly Gln Phe Glu Ser Glu Gln
850              855              860
Ala Ala Ser Arg Thr Leu Ala Leu Thr Ser Phe Met Ser Ile Val Val
865              870              875              880
Ile Phe Leu Leu Leu Tyr His Glu Phe Arg Ser Val Lys Glu Ser Ala
              885              890              895
Val Ile Leu Ile Asn Leu Pro Leu Ala Leu Ile Gly Gly Val Phe Ala
              900              905              910
Leu Leu Ile Thr Thr Gly Glu Ile Ser Ile Pro Ala Ile Ile Gly Phe
              915              920              925
Ile Ser Leu Phe Gly Ile Ala Thr Arg Asn Gly Met Leu Leu Ile Ser
              930              935              940
His Tyr Asn His Leu Gln Gln Val Glu Gly Leu Gly Val Tyr Glu Ser
945              950              955              960
Val Ile Arg Gly Ser Leu Asp Arg Leu Asn Pro Ile Val Met Thr Ala
              965              970              975
Leu Ser Ser Ala Leu Ala Leu Ile Pro Leu Ala Leu Ser Gly Ser Leu
              980              985              990
Pro Gly Asn Glu Ile Gln Ser Pro Met Ala Lys Val Ile Leu Gly Gly
995              1000              1005
Leu Leu Thr Ser Thr Phe Leu Asn Gly Phe Ile Ile Pro Ile Val Tyr
1010              1015              1020
Leu Met Met Asn Gly Lys Arg Lys
1025              1030

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<210> 7812

<211> 139

<212> PRT

<213> B.fragilis

<400> 7812

```

Lys Ala Asn Leu Leu Tyr Lys Met Asp Ile Glu Glu Ile Lys Asp Phe
1              5              10              15
Arg Pro Leu Ile Leu Val Ala Glu Asp Asp Asp Ser Asn Phe Lys Leu
20              25              30
Ile Lys Ala Ile Ile Gly Lys Lys Cys Asp Ile Leu Trp Ala Lys Asn
35              40              45
Gly Glu Glu Met Leu Asn Leu Tyr Arg Glu His Thr Gln Asp Ala His
50              55              60
Ala Ile Leu Met Asp Ile Lys Met Pro Ile Met Asn Gly Leu Glu Ala
65              70              75              80
Thr Arg Ile Ile Arg Glu Glu Gly Ala Ser Leu Pro Ile Ile Met Gln

```

				85					90					95			
Thr	Ala	Tyr	Ala	Phe	Ser	Ser	Asp	Arg	Glu	Asn	Ala	Met	Gln	Ala	Gly		
			100					105					110				
Ala	Ser	Glu	Val	Leu	Val	Lys	Pro	Ile	Thr	Val	Ser	Ala	Leu	Arg	Gly		
		115					120					125					
Cys	Leu	Ser	Ser	Tyr	Phe	Pro	Glu	Ile	Lys	Trp							
	130						135										

<210> 7813

<211> 483

<212> PRT

<213> B.fragilis

<400> 7813

Tyr	Met	Asn	Leu	Asn	Pro	Ile	Ile	Asn	Asn	Phe	Gln	Arg	Pro	Ile	Arg		
1				5					10					15			
Lys	Val	Gln	Ile	Cys	Cys	Ile	Leu	Ile	Phe	Ser	Cys	Ala	Ala	Cys	Ser		
		20						25				30					
Leu	Asn	Ile	Pro	Tyr	Glu	Asn	Gln	Tyr	Ser	Asp	Pro	Asp	Ala	Ile	Thr		
	35					40					45						
Thr	Val	Thr	Ala	Ala	Arg	Glu	Leu	Leu	Ala	Ser	Ala	Tyr	Asp	Ala	Ile		
	50					55					60						
Pro	Lys	Pro	Glu	Phe	Ser	Leu	Ser	Val	Leu	Ser	Asp	Asp	Phe	Gln	Pro		
65				70					75					80			
Thr	Phe	Leu	Ile	Asn	Leu	Asn	Ala	Asp	Leu	Asn	Asn	Leu	Tyr	Lys	Trp		
				85				90						95			
His	Pro	Lys	Pro	Met	Glu	Asp	Leu	Ser	Asn	Ser	Leu	Trp	Glu	Lys	Tyr		
			100					105					110				
Tyr	Ser	Ala	Ile	Ala	Ile	Ala	Asn	Thr	Val	Leu	Glu	Arg	Ile	His	Tyr		
		115					120					125					
Val	Ser	Pro	Ile	Ser	Asp	Ser	Asp	Lys	Gln	Glu	Leu	Gln	Cys	Ile	Val		
	130					135					140						
Ser	Glu	Ala	Lys	Thr	Leu	Lys	Ala	Tyr	Cys	Tyr	Phe	Asn	Leu	Leu	Arg		
145					150					155					160		
Leu	Phe	Ala	Pro	Thr	Tyr	Pro	Glu	Gly	Pro	Glu	Lys	Asp	Gly	Ile	Ile		
				165					170					175			
Leu	Lys	Glu	Arg	Phe	Glu	Leu	Ala	Phe	Leu	Lys	Arg	Ser	Ser	Ile	Ser		
		180						185					190				
Glu	Cys	Val	Asn	Ala	Ile	Arg	Gln	Leu	Leu	Thr	Glu	Ala	Val	Thr	Val		
		195					200					205					
Asp	Asn	Arg	Pro	Ser	Gln	Val	Tyr	Trp	Phe	Ser	Arg	Gln	Ser	Ala	Tyr		
	210					215					220						
Tyr	Leu	Leu	Ala	Ala	Leu	Glu	Leu	Tyr	Ala	Glu	Asn	Tyr	Asp	Lys	Ala		
225					230					235					240		
Glu	Glu	Tyr	Ala	Leu	Lys	Ile	Leu	Ser	Ser	Thr	Asn	Ala	Tyr	Asn	Val		
				245					250					255			
Leu	Ala	Pro	Val	His	Tyr	Lys	Lys	Leu	Trp	Glu	Gln	Glu	Pro	Cys	Glu		
			260					265					270				
Glu	Cys	Ile	Phe	Ser	Leu	His	Thr	Thr	Asn	Ser	Tyr	Tyr	Thr	Asp	Met		
		275					280					285					
Asn	Tyr	Glu	Arg	Lys	Lys	Gly	Asp	Tyr	Phe	Thr	Ile	Asn	Ser	Thr	Leu		
	290					295					300						
Thr	Gln	Leu	Tyr	Thr	Ala	Asn	Asp	Ile	Arg	Tyr	Glu	Ala	Thr	Val	Tyr		
305					310					315					320		
Pro	Gln	Glu	Met	Pro	Gly	Glu	Ser	Ile	Gly	Glu	Thr	Leu	Pro	Val	Leu		
				325					330					335			
Tyr	Leu	Gly	Lys	Tyr	Asn	Lys	Gln	Asn	Trp	Asn	Tyr	Lys	Pro	Ile	Gln		
			340					345					350				
Tyr	Ile	Asn	Lys	Leu	Arg	Val	Ser	Gly	Ile	Cys	Phe	Ile	Leu	Ala	Glu		


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      355              360              365
Ala Tyr Cys Gln Asp Gln Lys Gly His Asp Ala Leu Ala Leu Glu Val
 370              375              380
Ile Asn Asn Tyr Leu Ala Gln Arg Glu Ala Pro Leu Leu Asp Thr Ser
 385              390              395              400
Leu Ser Gly Ala Pro Leu Leu Lys Ala Ile Leu Gln Glu Lys Trp Lys
      405              410              415
Glu Phe Ala Gly Glu Gly Glu Arg Tyr Phe Asp Leu Lys Arg Tyr Arg
      420              425              430
Lys Ser Leu Leu Ser Asp Trp Asn Leu Ser Ala Thr Met Lys Asn Lys
      435              440              445
Pro Ile Lys Pro Asp Asp Tyr Arg Trp Leu Phe Pro Ile Pro Lys Gly
      450              455              460
Glu Tyr Leu Tyr Asn Glu Asn Ile Ser Gln Asn Ala Gly Trp Thr Lys
 465              470              475              480
Ile Glu Lys

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<210> 7814

<211> 429

<212> PRT

<213> B.fragilis

<400> 7814

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Ile Lys Thr Glu Val Leu Lys Leu Tyr Val Leu Ile Ile Ala Ile Ile
 1              5              10              15
Leu Ser Ile Gly Thr Ala Arg Thr Gln Asn Ile Asp Ser Leu Leu Met
      20              25              30
Gln Arg Glu Asp Thr Thr Gln Phe Ile Arg Ser Asp Ser Leu Val Leu
      35              40              45
Gln Phe Leu Glu Tyr Ser Asn Ile Pro Ile Thr Asp Asn Asn Lys Val
      50              55              60
Lys Leu Ile Lys Ser Gly Arg Glu Lys Phe Glu Asp Leu Phe Glu Ala
 65              70              75              80
Ile Arg Gly Ala Lys His His Ile His Leu Glu Tyr Phe Asn Phe Arg
      85              90              95
Asn Asp Ser Ile Ala Asn Ala Leu Phe Asp Leu Leu Gly Glu Lys Val
      100              105              110
Lys Glu Gly Val Lys Val Arg Ala Met Phe Asp Ala Phe Gly Asn Trp
      115              120              125
Ser Asn Asn Lys Pro Leu Lys Lys Arg His Leu Lys Ala Ile Arg Glu
      130              135              140
Lys Gly Ile Glu Ile Val Lys Phe Asp Pro Phe Lys Phe Pro Tyr Ile
      145              150              155              160
Asn His Ala Ala His Arg Asp His Arg Lys Ile Ala Val Ile Asp Gly
      165              170              175
Lys Ile Gly Tyr Thr Gly Gly Met Asn Ile Ala Asp Tyr Tyr Ile Asn
      180              185              190
Gly Leu Pro Lys Ile Gly Thr Trp Arg Asp Met His Ile Arg Ile Glu
      195              200              205
Gly Asp Ala Val Asn Ile Leu Gln Glu Ile Phe Leu Asp Ile Trp Asn
      210              215              220
Lys Thr Thr Lys Gln Asn Ile Val Gly Glu Glu Tyr Phe Pro Asn His
      225              230              235              240
Pro Glu Arg Ala Asp Ser Cys Asn Thr Val Ile Ser Ile Val Asp Arg
      245              250              255
Thr Pro Lys Arg Asn Ser Arg Met Leu Ser His Thr Tyr Ala Met Ser
      260              265              270
Ile Tyr Ala Ala Gln His Asp Val Arg Ile Val Asn Pro Tyr Phe Val

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275 280 285
 Pro Thr Ser Ser Ile Arg Lys Ala Leu Lys Arg Ala Leu Asn Arg Gly
 290 295 300
 Thr Lys Val Glu Ile Met Ile Ser Ser Lys Ser Asp Ile Pro Phe Thr
 305 310 315 320
 Pro Asp Ala Ser Leu Tyr Ala Val Gln Lys Leu Met Lys Lys Gly Ala
 325 330 335
 Met Ile Tyr Leu Tyr Asn Gly Gly Phe His His Ser Lys Ile Met Met
 340 345 350
 Val Asp Asp Leu Phe Cys Thr Val Gly Thr Ala Asn Leu Asn Ser Arg
 355 360 365
 Ser Leu Arg Tyr Asp Tyr Glu Thr Asn Ala Phe Ile Phe Asp Lys Asp
 370 375 380
 Ile Thr Gln Gln Leu Asn Asp Val Phe Glu Ala Asp Met Leu His Cys
 385 390 395 400
 Thr Arg Leu Thr Pro Glu Met Trp Lys Gln Lys Ser Ala Trp Lys Lys
 405 410 415
 Phe Lys Cys Trp Phe Ala Asn Leu Phe Thr Pro Phe Leu
 420 425

<210> 7815

<211> 448

<212> PRT

<213> B.fragilis

<400> 7815

Ile Val Asp Glu Ile Gly Gly Asn Leu His Gln Ser Gly Glu Gln Thr
 1 5 10 15
 Ala Asp Gln Cys Arg Tyr Pro Ile Glu Phe Ser Val Gly Lys Ser Gln
 20 25 30
 Cys Thr Thr Tyr His Tyr Arg Ser Asn Gly Thr Cys Gln Cys Phe Gly
 35 40 45
 Ala Gly Arg Lys Tyr Pro Cys Leu Gln Arg Val Thr Phe His Phe Phe
 50 55 60
 His Phe Leu Phe Leu Ser Ser Val Phe Glu Arg Thr Lys Ile Gly Gln
 65 70 75 80
 Lys Thr Tyr Ile Phe Ala Phe Leu Ser Ile Phe Ala Leu Leu Ile Leu
 85 90 95
 Glu Asn Met Lys Lys Ile Ile Tyr Leu Leu Ala Ala Leu Leu Leu
 100 105 110
 Leu Ser Ser Cys Lys Ser Lys Lys Asn Leu Val Ser Pro Ile Pro Arg
 115 120 125
 Pro Val Leu Asn Val Asp Ser Val Arg Pro Asp Ser Ser Asp Val Val
 130 135 140
 Ala Arg Leu Phe Ser Pro Asp Thr Ser Glu Leu Lys Lys Phe Ser Val
 145 150 155 160
 Lys Arg Lys Arg Glu Lys Thr His Val Ala Ser Pro Val Ile Thr Arg
 165 170 175
 Ser Ala Pro Ser Ile Val Ala Arg Gly Thr Arg Ile Thr Ser Ser Ala
 180 185 190
 Val Ser Val Ser Ser Val Tyr Pro Gly Ile Asp Arg Val Lys Lys Tyr
 195 200 205
 Glu Phe Thr His Arg Asp Val Pro Asp Ala Phe Asp Gly Phe Arg Ile
 210 215 220
 Ala Phe Ile Ser Asp Leu His Tyr Lys Ser Leu Phe Gln Gly Glu Gly
 225 230 235 240
 Leu Glu Ser Leu Val Arg Leu Leu Asn Ala Gln His Ala Asp Val Leu
 245 250 255
 Leu Met Gly Gly Asp Tyr Gln Glu Gly Cys Gln Tyr Val Pro Glu Leu


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225          230          235          240
Glu Leu Ile Phe Pro Glu Leu Val Ala Leu Gln Gly Val Glu Thr Arg
          245          250          255
Asn Gly Arg Ala His Lys Asp Asn Phe Tyr His Thr Leu Glu Val Leu
          260          265          270
Asp Asn Ile Ser Arg Val Thr Asp Asn Leu Trp Leu Arg Trp Ser Ala
          275          280          285
Leu Leu His Asp Ile Ala Lys Pro Val Thr Lys Arg Trp Glu Pro Lys
          290          295          300
Ala Gly Trp Thr Phe His Asn His Asn Phe Ile Gly Glu Lys Met Ile
305          310          315          320
Pro Asn Ile Phe Arg Lys Met Lys Leu Pro Met Asn Glu Lys Met Lys
          325          330          335
Tyr Val Gln Lys Met Val Ser Leu His Met Arg Pro Ile Val Ile Ala
          340          345          350
Asp Asp Val Val Thr Asp Ser Ala Val Arg Arg Leu Leu Phe Glu Ala
          355          360          365
Gly Asp Asp Ile Asp Asp Leu Met Thr Leu Cys Glu Ala Asp Ile Thr
          370          375          380
Ser Lys Asn Met Glu Arg Lys Gln Arg Phe Leu Asn Asn Phe Gln Leu
385          390          395          400
Val Arg Gln Lys Leu Lys Asp Leu Glu Glu Lys Asp Arg Val Arg Asn
          405          410          415
Phe Gln Pro Pro Val Ser Gly Glu Glu Ile Met Glu Val Phe Asn Leu
          420          425          430
Gly Pro Cys Arg Gln Val Gly Ser Leu Lys Ser Ala Ile Lys Asp Ala
          435          440          445
Ile Leu Asp Gly Val Ile Pro Asn Glu Tyr Glu Ala Ala Tyr Ala Phe
          450          455          460
Met Leu Gln Lys Ala Ala Lys Met Gly Leu Lys Pro Val Gln Asn Lys
465          470          475          480
Glu Val

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<210> 7817

<211> 205

<212> PRT

<213> B.fragilis

<400> 7817

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His Arg Ala Asp Arg Pro Arg Ile Ser Lys Tyr Arg Arg Ser Thr Gln
1          5          10          15
Arg Tyr Arg Cys Lys Asn Tyr Thr Asn Met Ile Lys Arg Glu Asp Val
          20          25          30
Tyr Lys Ile Gly Leu Phe Asn Lys Pro His Gly Ile His Gly Glu Leu
          35          40          45
Ser Phe Thr Phe Thr Asp Asp Ile Phe Asp Arg Ala Asp Cys Asp Tyr
          50          55          60
Leu Ile Cys Arg Leu Asp Asp Ile Phe Val Pro Phe Phe Ile Glu Glu
65          70          75          80
Tyr Arg Phe Arg Ser Asp Ser Thr Ala Leu Val Lys Leu Glu Gly Val
          85          90          95
Asp Thr Ala Glu Arg Ala Arg Met Phe Thr Asn Val Glu Val Tyr Phe
          100          105          110
Pro Val Lys His Ala Glu Glu Ala Pro Gly Glu Leu Ser Trp Asp
          115          120          125
Phe Phe Val Gly Phe Arg Val Glu Asp Val Arg His Gly Ala Leu Gly
          130          135          140
Glu Val Thr Asp Val Asp Thr Ser Thr Val Asn Thr Leu Phe Val Val

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145 150 155 160
 Asp Arg Asp Gly Asp Glu Leu Leu Ile Pro Ala Gln Glu Lys Leu Ile
 165 170 175
 Ala Gly Ile Asp Gln Lys His Lys Ile Ile Thr Val Asp Leu Pro Glu
 180 185 190
 Gly Leu Leu Ser Leu Asp Glu Cys Asp Asp Glu Glu Ser
 195 200 205

<210> 7818
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 7818
 Asn His Lys Glu Leu Phe Tyr Gly Ser Ala Thr Lys Ile Asn Lys Ile
 1 5 10 15
 Gly Leu Leu Arg Leu Gly Glu Val Val Ile Tyr Lys Phe Phe Tyr Thr
 20 25 30
 Leu Lys Leu Asp Gly Glu Gly Val Glu Gly Arg Leu His His Arg Phe
 35 40 45
 His Arg Ser Thr Ser Asn Val Ile Val Asp Ser Pro Ser Asp Lys Pro
 50 55 60
 Leu Ile Phe Val Gln Ser Val Val Ile Ser Thr Leu Val Tyr Leu Tyr
 65 70 75 80
 Leu Phe Gln Phe Asp Asn Pro Leu Ile Thr Ala Ser Ser Glu Phe Gln
 85 90 95
 Met Arg

<210> 7819
 <211> 404
 <212> PRT
 <213> B.fragilis

<400> 7819
 Thr Glu Lys Glu Asn Asn Lys Asn Phe Asn Asn Tyr Met Lys Arg Ile
 1 5 10 15
 Thr Ile Leu Ala Ala Thr Leu Phe Ala Leu Ser Gly Leu Gln Ala Gln
 20 25 30
 Thr Ser Ile Asp Gly Val Leu Arg Asn Ile Glu Thr Asn Asn Lys Glu
 35 40 45
 Leu Gln Ala Asn Ala Gln Leu Ile Ala Ser Gln Lys Leu Glu Thr Arg
 50 55 60
 Thr Asp Asn Asn Leu Pro Asp Pro Thr Leu Ser Tyr Ala His Leu Trp
 65 70 75 80
 Asn Asn Lys Asp Lys Asn Asn Thr Ile Gly Glu Leu Val Val Ser Gln
 85 90 95
 Ser Phe Asp Phe Pro Ser Leu Tyr Ala Thr Arg Ser Gln Leu Asn Arg
 100 105 110
 Leu Lys Ala Gly Ala Phe Asp Gly Gln Lys Ser Val Phe Arg Gln Gly
 115 120 125
 Ile Leu Leu Gln Ala Lys Asp Val Cys Leu Asp Ile Ile Met Leu Arg
 130 135 140
 Lys Gln Gln Gln Ile Leu Thr Glu Arg Leu Arg Asn Ala Glu Glu Leu
 145 150 155 160
 Ser Ala Met Tyr Ala Lys Arg Leu Gln Thr Gly Asp Ala Asn Val Ile
 165 170 175
 Glu Thr Asn Lys Ile Asn Leu Glu Leu Leu Asn Val Lys Thr Glu Ala
 180 185 190

Ser Leu Asn Glu Thr Ala Leu Arg Asn Lys Ile Gln Glu Leu Thr Ala
 195 200 205
 Leu Asn Gly Asn Ile Pro Val Phe Glu Asp Ala Asp Tyr Pro Ala
 210 215 220
 Val Ile Phe Pro Ser Asn Tyr Glu Glu Leu Lys Thr Glu Val Leu Ala
 225 230 235 240
 Ser Asp Tyr Thr Leu Gln Ala Leu Asn Ser Glu Ser Ala Ala Ala Arg
 245 250 255
 Lys Gln Ile Ala Val Asn Lys Ser Gln Trp Leu Pro Lys Leu Glu Leu
 260 265 270
 Gly Tyr Arg Arg Asn Thr Glu Ser Gly Glu Pro Phe Asn Gly Val Val
 275 280 285
 Val Gly Phe Ser Phe Pro Leu Phe Glu Asn Arg Asn Lys Val Lys Ile
 290 295 300
 Ala Lys Ala Gln Ser Leu Asn Val Asp Leu Gln Arg Ala Asn Thr Ser
 305 310 315 320
 Val Gln Val Glu Ser Glu Leu Thr Gln Leu Tyr Arg Glu Ala His Thr
 325 330 335
 Leu Arg Thr Ser Met Glu Glu Tyr Glu Lys Thr Phe Gln Ala Gln Gln
 340 345 350
 Asp Leu Ser Leu Leu Lys Gln Ala Leu Thr Gly Gly Gln Ile Ser Met
 355 360 365
 Ile Glu Tyr Phe Val Glu Val Ser Val Val Tyr Gln Ser Lys Gln Asn
 370 375 380
 Tyr Leu Gln Leu Glu Asn Gln Tyr Gln Lys Ala Met Ala Lys Ile Tyr
 385 390 395 400
 Lys Asn Lys Leu

<210> 7820

<211> 176

<212> PRT

<213> B.fragilis

<400> 7820

Thr Ser Met Glu His Lys Lys Thr Lys Ile Val Leu Tyr Ala Asp Val
 1 5 10 15
 Ile Ile His Phe Met Glu Ala Asn Tyr Phe Ser Ile Leu Pro Asp Ile
 20 25 30
 Phe Pro Glu Tyr Glu Tyr Leu Ile Leu Asp Val Val Tyr Asn Glu Ile
 35 40 45
 Ser Gln Asn Ser Gly Thr Lys Asp Phe Ile Asp Lys Tyr Leu His Phe
 50 55 60
 Phe Pro Lys Leu Lys Lys Glu Val Phe Ser Pro Lys Arg Glu Ser Met
 65 70 75 80
 Lys Glu Phe Phe Leu Leu Gln Arg Thr Leu Gly Lys Gly Glu Ser Ala
 85 90 95
 Cys Met Ile Tyr Cys Arg Asp Asn Arg Asp Val Leu Gly Ser Ser Asn
 100 105 110
 Leu Lys Asp Ile Lys Glu Tyr Cys Ser Lys Asn Asn Ile Thr Tyr Leu
 115 120 125
 Thr Thr Leu Asp Phe Leu Tyr Tyr Ala Tyr Cys Arg Lys Lys Met Thr
 130 135 140
 Glu Gln Glu Cys Lys Glu Phe Met Gln Glu Val Asn Asn Ala Gly Ser
 145 150 155 160
 Lys Leu Pro Ile Ile Asp Ile Thr Gln Tyr Thr Cys Thr Val Gln Ile
 165 170 175

<210> 7821

<211> 300
 <212> PRT
 <213> B.fragilis

<400> 7821

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Lys Met Ile Leu Gln Thr Ile Lys Gln Ile Ser Cys Leu Leu Cys Leu
1           5           10           15
Cys Cys Phe Leu Gln Gln Ser Ala Phe Ser Gln Asp Asp Lys Asp Lys
          20           25           30
Pro Ala Tyr Thr Leu Phe Asp Asn Thr Gly Lys Gln Ile Ser Tyr Gly
          35           40           45
Glu Leu Ile Lys Arg Leu Ser Gly Tyr Asp Val Ile Phe Leu Gly Glu
          50           55           60
Leu His Asn Cys Pro Ile Thr His Trp Leu Glu Phe Glu Ile Thr Arg
65           70           75           80
Ser Ile Tyr Asn Ile His Lys Asp Gln Leu Met Leu Gly Ala Glu Met
          85           90           95
Phe Glu Ser Asp Asn Gln Leu Ile Phe Asp Glu Tyr Met Gln Gln Lys
          100          105          110
Ile Ser Tyr Asp Arg Phe Glu Ala Glu Ala Arg Leu Trp Asp Asn Tyr
          115          120          125
Arg Thr Asp Tyr Tyr Pro Val Val Phe Phe Ala Lys Glu His His Ile
          130          135          140
Pro Phe Ile Ala Thr Asn Ile Pro Arg Arg Tyr Ala Asn Ile Val Lys
145          150          155          160
Asn Lys Gly Phe Glu Ala Leu Asp Ser Leu Ser Glu Glu Ala Lys Arg
          165          170          175
Tyr Ile Ala Pro Leu Pro Ile Asp Phe Glu Tyr Asp Glu Ala Gln Ser
          180          185          190
Ala Ala Ala Phe Ser Met Met Asn Met Met Gly Gly Arg Arg Ala Gly
          195          200          205
Asp Asn Arg Lys Leu Ala Gln Ala Gln Ala Ile Lys Asp Ala Thr Met
210          215          220
Gly Trp Phe Ile Ala Arg Asn Ile Lys Asn Lys Phe Leu His Ile Asn
225          230          235          240
Gly Ser Tyr His Ser Asn Arg Gln Gly Gly Ile Ile Pro Tyr Leu Leu
          245          250          255
Arg Tyr Arg Pro Asn Thr Ser Ile Val Thr Val Thr Ser Val Arg Gln
          260          265          270
Glu Ser Ile Arg Lys Leu Asp Asp Asp His Lys Gly Leu Ala Asp Phe
          275          280          285
Tyr Ile Cys Val Pro Glu Asp Met Val Asn Ser Tyr
          290          295          300

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<210> 7822
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 7822

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Tyr Val Val Cys Phe Cys Tyr Leu Tyr Ala Ile Val Lys Phe Arg Leu
1           5           10           15
Phe Ile Asn Leu Lys Leu Lys Asn Met Lys Asp Leu Glu Asp Asp Glu
          20           25           30
Arg Glu Phe Pro Ile Arg Val Tyr Thr Lys Val Glu Leu Ala Leu Leu
          35           40           45
Tyr Ala Pro His Leu Ser Glu Asn Ala Ala Leu Asn Asn Leu Ser Arg
          50           55           60
Trp Met Arg His Asn Lys Leu Leu Met Ala Ala Leu Glu Glu Val Gly

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65 70 75 80
 Tyr Tyr Lys Tyr Arg His Ser Phe Thr Pro Lys Glu Val Arg Leu Ile
 85 90 95
 Phe Arg Tyr Met Gly Glu Pro Gly Ala
 100 105

<210> 7823
 <211> 295
 <212> PRT
 <213> B.fragilis

<400> 7823

Leu Val Thr Cys Asn Ile Gln Asn Met Lys Gly Ile Ile Leu Ala Gly
 1 5 10 15
 Gly Ser Ala Thr Arg Leu Tyr Pro Leu Ser Lys Ala Ile Ser Lys Gln
 20 25 30
 Met Met Pro Val Tyr Asp Lys Pro Met Ile Tyr Tyr Pro Leu Ser Thr
 35 40 45
 Leu Met Leu Ala Gly Ile Arg Glu Val Leu Val Ile Ser Thr Pro Arg
 50 55 60
 Asp Leu Pro Leu Phe Arg Glu Leu Leu Gly Ser Gly Glu Glu Phe Gly
 65 70 75 80
 Met Ser Phe Ser Tyr Leu Val Gln Glu Gln Pro Asn Gly Leu Ala Gln
 85 90 95
 Ala Phe Val Leu Gly Ala Asp Phe Leu Asn Gly Glu Pro Gly Cys Leu
 100 105 110
 Ile Leu Gly Asp Asn Leu Phe Tyr Gly Gln Gly Phe Ser Ala Met Leu
 115 120 125
 Arg Arg Ala Ala Thr Ile Glu Lys Gly Ala Cys Ile Phe Gly Tyr Tyr
 130 135 140
 Val Lys Asp Pro Arg Ala Tyr Gly Val Val Glu Phe Asp Gly Ser Gly
 145 150 155 160
 Lys Val Val Ser Leu Glu Glu Lys Pro Ala Val Pro Lys Ser Asn Tyr
 165 170 175
 Ala Val Pro Gly Leu Tyr Phe Tyr Asp Ala Thr Val Thr Glu Lys Ala
 180 185 190
 Leu Ala Leu Glu Pro Ser Ala Arg Gly Glu Tyr Glu Ile Thr Asp Leu
 195 200 205
 Asn Lys Leu Tyr Leu Asp Glu Gly Thr Leu Lys Val Glu Leu Phe Gly
 210 215 220
 Arg Gly Phe Ala Trp Leu Asp Thr Gly Asn Cys Asn Ser Leu Leu Glu
 225 230 235 240
 Ala Ser Asn Phe Val Ala Thr Ile Gln Asn Arg Gln Gly Phe Tyr Val
 245 250 255
 Ser Cys Ile Glu Glu Ile Ala Trp Arg Asn Gly Trp Ile Ser Ser Ala
 260 265 270
 Gln Leu Lys Ala Leu Gly Glu Lys Leu Glu Lys Thr Glu Tyr Gly Lys
 275 280 285
 Tyr Leu Ile Asp Leu Ala Asn
 290 295

<210> 7824
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 7824

Lys Ile His Cys Ile Leu Ile Met Asn Glu Ile Lys Lys Lys Gln Ile
 1 5 10 15

Ala Ile Leu Gly Ser Thr Gly Ser Ile Gly Thr Gln Ala Leu Gln Val
 20 25 30
 Ile Glu Glu His Pro Glu Leu Tyr Glu Val Tyr Ala Leu Thr Ala Asn
 35 40 45
 Asn Lys Val Asp Leu Leu Ile Ala Gln Ala Arg Lys Phe Met Pro Glu
 50 55 60
 Ala Val Val Ile Ala Asn Glu Glu Lys Tyr Ala Gln Leu Lys Glu Ala
 65 70 75 80
 Leu Ser Asp Leu Pro Val Lys Val Tyr Ala Gly Ala Ala Ala Leu Cys
 85 90 95
 Gln Ile Val Glu Ser Gly Pro Ile Asp Val Val Leu Thr Ala Met Val
 100 105 110
 Gly Tyr Ala Gly Leu Lys Pro Thr Met Asn Ala Ile Arg Ala Gly Lys
 115 120 125
 Ala Ile Ala Leu Ala Asn Lys Glu Thr Leu Val Val Ala Gly Glu Leu
 130 135 140
 Ile Asn Gln Leu Ala Arg Gln Tyr Arg Thr Pro Ile Leu Pro Val Asp
 145 150 155 160
 Ser Glu His Ser Ala Val Phe Gln Cys Leu Thr Gly Glu Val Gly Asn
 165 170 175
 Pro Ile Glu Lys Val Ile Leu Thr Ala Ser Gly Gly Pro Phe Arg Thr
 180 185 190
 Cys Thr Met Glu Gln Leu Lys Thr Val Thr Lys Val Gln Ala Leu Lys
 195 200 205
 His Pro Asn Trp Glu Met Gly Ala Lys Ile Thr Ile Asp Ser Ala Ser
 210 215 220
 Met Met Asn Lys Gly Phe Glu Val Ile Glu Ala Lys Trp Leu Phe Gly
 225 230 235 240
 Val Gln Pro Gly Gln Ile Glu Val Val Val His Pro Gln Ser Val Ile
 245 250 255
 His Ser Met Val Gln Phe Glu Asp Gly Ala Ile Lys Ala Gln Leu Gly
 260 265 270
 Met Pro Asp Met Arg Leu Pro Ile Gln Tyr Ala Phe Ser Tyr Pro Asp
 275 280 285
 Arg Ile Asn Ser Ser Phe Asp Arg Leu Asp Phe Ser Lys Cys Thr Asn
 290 295 300
 Leu Thr Phe Glu Gln Pro Asp Thr Lys Arg Phe Arg Asn Leu Ala Leu
 305 310 315 320
 Ala Tyr Glu Ser Met Tyr Arg Gly Gly Asn Met Pro Cys Ile Val Asn
 325 330 335
 Ala Ala Asn Glu Val Val Val Ala Ala Phe Leu Arg Asp Glu Ile Ser
 340 345 350
 Phe Leu Gly Met Ser Asp Val Ile Glu His Thr Met Gly Gln Val Ser
 355 360 365
 Phe Val Gln Thr Pro Thr Tyr Asp Glu Tyr Val Ala Thr Asp Ala Glu
 370 375 380
 Ala Arg Arg Ile Ala Arg Glu Leu Ile Cys Lys
 385 390 395

<210> 7825

<211> 292

<212> PRT

<213> B.fragilis

<400> 7825

Asn Glu Ser Cys Gly Ile His Phe Cys Ser Val Arg Asp Ala Leu Leu
 1 5 10 15
 Leu His Gln Ile Gln Lys Gln Gly Asn Tyr Arg His Lys Met Lys Lys
 20 25 30

```

Ile Glu Cys Ile Ile Met Asp Trp Ala Gly Thr Ala Val Asp Tyr Gly
   35                               40                               45
Cys Phe Ala Pro Val Ala Ala Phe Ile Lys Ala Phe Ala Gly Lys Gly
   50                               55                               60
Leu Thr Ile Asp Val Glu Gln Thr Arg Lys Pro Met Gly Leu Pro Lys
  65                               70                               75                               80
Ile Gln His Ile Arg Glu Leu Leu Thr Met Pro Glu Val Asn Glu Gln
                               85                               90                               95
Phe Ile Asn Arg Tyr Arg Arg Ala Trp Thr Glu Glu Asp Val Val Glu
                               100                              105                              110
Leu Asn His Leu Phe Glu Lys Tyr Leu Phe Ala Ser Leu Lys Glu Tyr
   115                              120                              125
Thr Asp Pro Ile Pro Gly Val Ile Pro Thr Leu Glu Lys Leu Arg Ala
   130                              135                              140
Glu Gly Leu Lys Ile Gly Ser Thr Thr Gly Tyr Thr Arg Glu Met Met
  145                              150                              155                              160
Asp Val Val Leu Pro Glu Ala Gln Ala Lys Gly Tyr Arg Val Asp Tyr
                               165                               170                               175
Cys Ala Thr Pro Asn Leu Leu Pro Ala Gly Arg Pro Ala Pro Tyr Met
   180                              185                              190
Ile Phe Glu Asn Leu Thr Lys Leu Ala Val Pro Asp Pro Asp Thr Val
   195                              200                              205
Val Lys Val Gly Asp Thr Ile Val Asp Ile Gln Glu Gly Val His Ala
   210                              215                              220
Lys Val Trp Ser Val Gly Val Val Leu Gly Ser Asn Glu Met Ala Leu
  225                              230                              235                              240
Thr Glu Glu Glu Thr His Ala Leu Pro Ala Ala Glu Leu Glu Asn Arg
                               245                               250                               255
Ile Ala Glu Val Lys Gln Arg Met Leu Ala Ala Gly Ala Ser Tyr Val
                               260                               265                               270
Ile Arg Ser Ile Glu Glu Leu Pro Ala Leu Ile Gln Leu Ile Asn Ser
   275                               280                               285
Lys Leu Asn His
   290

```

<210> 7826

<211> 108

<212> PRT

<213> B.fragilis

<400> 7826

```

Ser Glu Val Arg Phe Phe Ile Ser Arg Met Asp Ser Ser Gly Glu Ser
  1                               5                               10                               15
Trp Asp Thr Cys Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Arg Pro
   20                               25                               30
Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Ala Thr Gln Phe
   35                               40                               45
Glu Glu Glu Pro Phe Ser Tyr Val Phe Gly Cys Arg Thr Phe Val Ile
   50                               55                               60
Glu Ile Pro Asp Ser Lys Ile Ile Met Ala Glu Asn Ser Lys Gln Phe
  65                               70                               75                               80
Leu Leu Thr Lys Met Ser Phe Leu Ser Ile Tyr Ser Asp Tyr Leu Lys
   85                               90                               95
Ile Ile Pro Tyr Phe Cys Thr Lys Leu Leu Val Ile
   100                              105

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<210> 7827

<211> 95

<212> PRT

<213> B.fragilis

<400> 7827

Lys Arg Asn Arg Met Lys Lys Leu Val Phe Cys Ala Ala Phe Val Ala
 1 5 10 15
 Ala Met Cys Met Ala Gly Thr Thr Thr Ala Gln Ala Gln Asp Val Lys
 20 25 30
 Lys Lys Glu Val Lys Lys Glu Gln Cys Asp Lys Lys Asp Ser Lys Ala
 35 40 45
 Cys Cys Lys Lys Glu Lys Lys Ala Cys Cys Lys Lys Glu Ala Asp Lys
 50 55 60
 Lys Thr Thr Asp Gly Cys Lys His Lys Ala Asp Cys Lys Ala Lys Ala
 65 70 75 80
 Gly Cys Lys Asp Ser Lys Cys Thr Lys Asp Lys Gly Gly Lys Lys
 85 90 95

<210> 7828

<211> 562

<212> PRT

<213> B.fragilis

<400> 7828

Ile Asn Lys Arg Arg Asn His His Arg Leu His Lys Tyr Gln Trp Phe
 1 5 10 15
 Ile Gly Arg Thr Ile Asn Asp Asn Ile Gly Ser Arg Ser Val Lys Ser
 20 25 30
 Val Val Lys Thr Thr Phe His Ser Leu Pro Ile Lys Phe Gln Cys Val
 35 40 45
 Lys Lys Leu Ile Tyr His Tyr Leu Pro Gln Pro Lys Lys Ser Asp Phe
 50 55 60
 Val Tyr Phe Cys Ser Thr Ser Ile Lys Lys Phe Phe Met Ile Leu His
 65 70 75 80
 Thr Gln Thr Pro Val Val Asp Glu Thr Asp Gly Leu Pro Leu Pro His
 85 90 95
 Arg Ile Trp Ala Val Val Gly Ile Ser Phe Ala Leu Cys Met Ser Val
 100 105 110
 Leu Asp Ile Asn Ile Ile Asn Val Val Leu Pro Thr Leu Ser His Asp
 115 120 125
 Phe Gly Thr Ser Pro Ala Val Thr Thr Trp Ile Ile Asn Gly Tyr Gln
 130 135 140
 Leu Ala Ile Val Ile Ser Leu Leu Ser Phe Ser Ser Leu Gly Glu Ile
 145 150 155 160
 Tyr Gly Tyr Arg Lys Ile Phe Leu Ser Gly Ile Ala Met Phe Ile Val
 165 170 175
 Thr Ser Leu Ile Cys Ala Leu Ser His Ser Phe Trp Thr Leu Thr Ile
 180 185 190
 Ala Arg Ile Phe Gln Gly Phe Ser Ala Ser Ala Ile Thr Ser Val Asn
 195 200 205
 Thr Ala Gln Leu Arg Thr Ile Tyr Pro Arg Lys Gln Ile Gly Arg Gly
 210 215 220
 Met Gly Ile Asn Ala Met Val Val Ala Ile Ser Ala Ala Ala Gly Pro
 225 230 235 240
 Ser Val Ala Ser Gly Ile Leu Phe Val Ala Ser Trp His Trp Leu Phe
 245 250 255
 Ala Ile Asn Val Pro Leu Gly Leu Val Ala Leu Thr Leu Gly Leu Lys
 260 265 270
 Tyr Leu Pro Arg Lys Glu Glu Arg Ser Asn Arg Lys Phe Asp Lys Leu
 275 280 285
 Ser Ala Ile Ala Asn Ala Ile Thr Phe Gly Leu Leu Ile Tyr Thr Leu

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      290                      295                      300
Asp Gly Phe Ala His His Glu Asn Asn Asp Tyr Ile Val Ile Gln Leu
305                      310                      315                      320
Ala Val Leu Ala Val Val Gly Thr Tyr Tyr Val Arg Arg Gln Leu Asn
      325                      330                      335
Gln Pro Ser Pro Leu Leu Pro Leu Asp Leu Leu Gly Ile Pro Ile Phe
      340                      345                      350
Arg Leu Ser Ile Leu Thr Ser Ile Cys Ser Phe Thr Ala Gln Met Leu
      355                      360                      365
Ala Met Val Ser Leu Pro Phe Phe Leu Gln Asn Ser Leu Gly Tyr Ser
      370                      375                      380
Glu Val Met Thr Gly Leu Leu Leu Thr Pro Trp Pro Tyr Ser His Thr
385                      390                      395                      400
Gly Asp Ser Thr Gly Ser Arg Ile Ser Gly Gly Thr His Ser Ser Arg
      405                      410                      415
His Thr Gly Gln His Arg Asp Gly Ile Val Leu Tyr Arg Thr Leu Leu
      420                      425                      430
Ser Val Tyr Ile Asn Gly Gly Phe Ile Gly His Arg His His Pro Ala
      435                      440                      445
Ile Asp Ala Leu Trp Cys Arg Phe Arg Ser Phe Pro Asp Thr Glu Gln
      450                      455                      460
Gln Tyr Asn His Leu Phe Arg Pro Tyr Pro Thr Phe Gly Arg Ser Gln
465                      470                      475                      480
Arg Asn Val Gly Tyr Gly Thr Ala Leu Gly Thr Asp Ile Arg Tyr Asp
      485                      490                      495
Thr Gly Cys Phe Ala Leu Gln Phe Cys Ser Thr Arg Glu Glu Tyr Gly
      500                      505                      510
Gly Leu Ser Asp Ser Arg Gln Arg Ile Cys Val Cys Arg Ser Ser Gly
      515                      520                      525
Lys Gln His Ala Ala Phe Thr Thr Leu His Ile Lys Asp Glu Ala Pro
      530                      535                      540
Ile Thr Ile Ser Ile His Val Tyr Arg Pro Thr Gly Ser Gln Ser Asn
545                      550                      555                      560
Thr Lys

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<210> 7829

<211> 237

<212> PRT

<213> B.fragilis

<400> 7829

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Thr Ser Val Ser Met Lys Trp Glu Ser Ser Leu Val Glu His Leu Gln
1      5      10      15
Trp Ser Asp Thr Ile Thr Asn Arg Glu Ser Lys Glu Gln Leu Ala Arg
      20      25      30
Met Ile Ala Met Arg Val Gln Glu Gly Glu Ile Ile Gly Ala Gly Ser
      35      40      45
Gly Ser Thr Val Tyr Leu Ala Leu Leu Ala Ile Ala Glu Arg Ile Arg
      50      55      60
Thr Glu Asn Leu His Val Thr Val Ile Pro Ala Ser Met Glu Ile Ser
      65      70      75      80
Met Glu Cys Val Arg Leu Gly Ile Pro Gln Thr Thr Leu Trp Met Cys
      85      90      95
Arg Pro Asp Trp Thr Phe Asp Gly Ala Asp Glu Val Asp Pro Asp His
      100      105      110
Asn Leu Ile Lys Gly Arg Gly Gly Ala Leu Phe Lys Glu Lys Leu Leu
      115      120      125
Ile Cys Ser Ser Asn Arg Thr Phe Ile Leu Val Asp Glu Ser Lys Gln

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130		135		140
Val Ser Phe Leu Gly Ser Arg Phe Pro Val Pro Ile Glu Val Phe Pro				
145		150		155
Met Ala Leu Pro Tyr Val Glu Arg Glu Val Leu Thr Met Gly Ala Leu				
	165		170	175
Arg Thr Glu Leu Arg Leu Ala Lys Gly Lys Asp Gly Pro Val Ile Thr				
	180		185	190
Glu Asn Gly Asn Leu Ile Leu Asp Ala Trp Phe Gly Asn Ile His Ser				
	195		200	205
Ser Leu Glu Lys Glu Ile Lys Ser Ile Thr Gly Val Val Glu Asn Gly				
	210		215	220
Leu Phe Met Gly Tyr Asp Val Glu Val Met Val Ala Lys				
225		230		235

<210> 7830

<211> 701

<212> PRT

<213> B.fragilis

<400> 7830

Gly Met Asn Arg Met Lys Cys Gly Phe Tyr Thr Tyr Arg Gly Ile Ala				
1	5		10	15
Phe Cys Phe Val Ala Ala Met Phe Cys Gly Gln Thr Met Ala Gln Val				
	20		25	30
Val Glu Lys Arg Gly Phe Asp Ser Gln Lys Lys Ile Asn Ala Phe Asp				
	35		40	45
Asn Thr Thr Phe Cys Thr Ala Tyr Leu Ser Asp Gly Ala Leu Tyr Thr				
	50		55	60
Met Arg Asp Ile Ala Ile Asn Asp Val Arg Lys Ile Glu Arg Ile Val				
	65		70	75
Phe Asn Pro Thr Gly Ser Ser Ile Ala Leu Leu Arg Ala Lys Asn Pro				
	85		90	95
Ile Ser Ile Tyr Ser Phe Arg Asp Arg Asn Lys Lys Leu Phe Glu Leu				
	100		105	110
Lys Glu Lys Arg Lys Lys Leu Lys Ala Lys Pro Met Pro Val Ser Met				
	115		120	125
Cys Tyr Ser Ala Asp Ala Arg Ser Phe Ile Val Gly Asn Ser Leu Gly				
	130		135	140
Glu Ile Val Ile Tyr Asp Thr Lys Glu Tyr Met Pro Leu Ala Tyr Ile				
	145		150	155
Gln Gly Glu Ala Pro Ala Thr Ala Leu Ala Met Ser Ser Asn Asn Tyr				
	165		170	175
Phe Ile Ala Ala Ala Ala Gly Gln Asn Ile Asn Ile Trp Asn Phe Gln				
	180		185	190
Thr Lys Glu Leu Arg Lys Ala Ile Pro Met Pro Ala Val Val Lys Glu				
	195		200	205
Val Thr Phe Ser Pro Asp Ala Ala Leu Leu Ala Val Thr Thr Asp Asp				
	210		215	220
Asn His Leu Thr Ile Ile Asp Thr Lys Asn Trp Asp Lys Val Asp Ile				
	225		230	235
Phe Asp Lys Leu Gly Gly Thr Leu Ser Ser Pro Ser Phe His Pro Glu				
	245		250	255
Gly Lys Tyr Ile Ser Val Val Lys Asp Gly Lys Asn Ile Glu Ile Ile				
	260		265	270
Asn Leu Lys Asn Gly Val Val Glu Gln Asp Ile Val Asp Pro Ile Gly				
	275		280	285
Asp Val Thr Gly Gly Arg Phe Phe Lys Asn Asn Gln Asn Ser Glu Val				
	290		295	300
Phe Leu Leu Thr Asn Arg Thr Lys Gln Met Val Phe Trp Asp Ala Asn				

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305          310          315          320
Gly Leu Asn Pro Phe Tyr Gly Lys Ile Met Gly Arg Glu Val Asp Ala
          325          330          335
Lys Met Asn Glu Trp Val Lys Met Met Gln Gly Glu Ser Met Glu Asp
          340          345          350
Tyr Ala Ile Arg Val Asn Asp Glu Thr Arg Ile Lys Gln Gln Gln Leu
          355          360          365
Phe Ala Gln Glu Val Ala Thr Ala Leu Ala Gly Asp Arg Ile Ser Met
          370          375          380
Asp Asn Pro Phe Ile Asp Gly Tyr Asp Ala Ser Asn Asn Met Leu Asn
385          390          395          400
Ile Gly Phe Lys Gly Leu Pro Ser Ile Gly Leu Glu Val Pro Ser Asn
          405          410          415
Glu Ala Gly Asp Phe Lys Asp Gly Lys Met Lys Phe Ser Asn Ala Val
          420          425          430
Tyr Val Leu Asn Asp Lys Asp Glu Phe Glu Leu Ala Tyr Val Glu Val
          435          440          445
Thr Asn Glu Thr Thr Asn Lys Val Tyr Ile Tyr Asp Asn Ile Gly Arg
          450          455          460
Thr Lys Leu Thr Ala Leu Glu Ala Asp Glu Asn Phe Val Pro Leu Glu
465          470          475          480
Ile Met Gln Gln Ala Thr Arg Glu Glu Ala Gln Leu Ala Glu Ile Lys
          485          490          495
Glu Gln Val Ile Glu Glu Lys Lys Gln Asp Lys Leu Ile Thr Asp Asn
          500          505          510
Thr Gln Ile Asn Val Lys Thr Glu Val Ile Pro Gly Val Asp Ala Asn
          515          520          525
Gly Lys Lys Ile Leu Asn Tyr Lys Val Gly Tyr Gln Tyr Glu Val Ile
          530          535          540
Asn Lys Glu Phe Ser Ala Lys Glu Asp Phe Pro Ser Gly Gly Tyr Asn
545          550          555          560
Ile Glu Arg Ser Asn Ala Ala Met Ser Leu Met Lys Ile Ile Lys Asn
          565          570          575
Ala Phe Glu Gly Asp Phe Ala Lys Tyr Leu Ser Glu Gly Lys Gln Val
          580          585          590
Lys Val Ile Ile Thr Gly Ser Ala Asp Ala Ala Pro Ile Arg Gly Arg
          595          600          605
Leu Ala Tyr Asp Gly Arg Tyr Gly Glu Phe Val Asp Glu Pro Tyr Tyr
          610          615          620
Lys Asp Gly Asn Leu Asp Asn Ile Thr Val Thr Lys Ala Gly Gly Ile
625          630          635          640
Thr Gln Asn Glu Gln Leu Ala Leu Met Arg Ala Ala Gly Val Lys Thr
          645          650          655
Tyr Ile Glu Lys Asn Val Thr Thr Leu Gly Asn Thr Lys Asn Glu Tyr
          660          665          670
Glu Tyr His Val Glu Val Ala Lys Glu Arg Gly Gly Glu Phe Arg Lys
          675          680          685
Ile Asn Val Glu Phe Val Ile Met Asp Ala Phe Gln Gln
          690          695          700

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<210> 7831

<211> 138

<212> PRT

<213> B.fragilis

<400> 7831

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Ser Lys Leu Arg Met Arg Asn Lys Arg Tyr Ile Val Ser Phe Leu Leu
1          5          10          15
Phe Ile Ser Met Ile Met Leu Val Val Pro Val Ile Pro His His His

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Ser Lys Glu Cys Ile Gly Leu Phe Phe Ser Ala Ile Leu Gly Ile Leu
 130 135 140
 Ile Val His Tyr Leu Asn Gly Asn Phe Lys Ile His Phe Arg Asp Tyr
 145 150 155 160
 Val Ala Phe Ser Leu Cys Leu Phe Phe Lys Pro Gln Tyr Leu Pro Phe
 165 170 175
 Ile Val Ser Thr Leu Phe Tyr Leu Arg Phe Ala Phe Gly Leu His Ser
 180 185 190
 Arg Arg Arg Leu Ile Ile Leu Ser Val Phe Tyr Val Ser Ala Ile Ile
 195 200 205
 Phe Val Leu Tyr Leu Ser Arg Asp Leu Ile Asp Leu Tyr Ser Leu Gly
 210 215 220
 Val Gln Lys Ala Phe Glu Phe Asp Ser Gln Phe Ser Asn Ser Thr Arg
 225 230 235 240
 Asp Thr Leu Phe Phe Val Asn Lys Tyr Asp Tyr Phe Ser Lys Ala Pro
 245 250 255
 Met Gly Ile Phe Ile Ala Phe Trp Gly Pro Thr Leu Thr Glu Ala Leu
 260 265 270
 Gln Lys Pro Phe Gln Met Ala Val Tyr Ile Glu Ser Phe Val Val Leu
 275 280 285
 Cys Val Phe Ile Tyr Phe Leu Lys Thr Pro Leu Lys Lys Leu Ile Val
 290 295 300
 Asn Gly Ile Val Asn Leu Arg Leu Ile Val Ser Tyr Ser Ile Leu Phe
 305 310 315 320
 Leu Gly Ile Leu Leu Val His Tyr Pro Phe Gly Val Phe Asn Ala Gly
 325 330 335
 Ser Ala Thr Arg Tyr Arg Thr Asn Tyr Leu Phe Leu Phe Ile Ile Leu
 340 345 350
 Leu Met Tyr Leu Phe Ser Tyr Tyr Arg Lys Lys Asn Asp Lys Val Asp
 355 360 365
 Thr Leu Phe Gly Cys
 370

<210> 7834

<211> 955

<212> PRT

<213> B.fragilis

<400> 7834

Phe Met Lys Arg Asn Asn Lys Asn Arg Tyr Leu Tyr Ile Ala Ala Ile
 1 5 10 15
 Phe Ile Ala Ala Met Leu Pro Cys Ile Ala Cys Pro Gln Ser Thr Pro
 20 25 30
 Ile Leu Leu Pro Thr Gly Thr Val Glu Gly Arg Leu Pro Asn Gly Leu
 35 40 45
 His Tyr Leu Ile Leu His Asn Ala Ser Pro Ala Ser Arg Val Glu Phe
 50 55 60
 Arg Leu Ile Met Arg Val Gly Ser Val Gln Glu Thr Glu Gln Glu Lys
 65 70 75 80
 Gly Cys Ala His Phe Leu Glu His Ile Thr Phe Gly Gly Thr Arg His
 85 90 95
 Phe Pro Lys Arg Ser Leu Val Glu Tyr Leu Glu Ser Leu Gly Met Lys
 100 105 110
 Tyr Gly Gln Asp Ile Asn Ala Phe Thr Gly Phe Asp Arg Thr Ile Tyr
 115 120 125
 Met Phe Ala Val Pro Thr Asp Phe Ala Lys Asp Glu Ala Leu Asp Arg
 130 135 140
 Ser Leu Leu Ile Leu His Asp Trp Leu Asp Gly Val Thr Ile Asp Pro
 145 150 155 160

Glu Lys Val Glu Asn Glu Lys Gly Ile Ile Leu Glu Glu Leu Arg Gly
 165 170 175
 Phe Asp Pro Glu Asp Asp Phe Tyr Pro Leu Lys Ile Gly Gln Gly Ile
 180 185 190
 Phe Ser His Arg Met Pro Leu Gly Thr Thr Asp Asp Ile Arg Lys Val
 195 200 205
 Thr Pro Gln Val Leu Lys Asn Tyr Tyr His Lys Trp Tyr Val Pro Ser
 210 215 220
 Leu Ala Thr Leu Val Ile Val Gly Asp Ile Ser Pro Leu Glu Ile Glu
 225 230 235 240
 Ser Lys Ile Lys Glu Arg Phe Lys Ser Leu Pro Gly Arg Pro Val Asn
 245 250 255
 Asp Phe Arg Asn Tyr Pro Leu Glu Tyr Thr Gln Gly Ile His Leu Ala
 260 265 270
 Ser Ile Arg Asp Ser Leu Gln Pro Arg Thr Lys Val Glu Leu Met Ile
 275 280 285
 Pro His Pro Cys Thr Val Glu Arg Thr Met Glu Asp Ala Ile Ala Lys
 290 295 300
 Glu Lys Gly Arg Leu Leu Val Ser Ala Ile Ser Ser Arg Phe Arg Ala
 305 310 315 320
 Arg Lys Leu Lys Thr Asp Val Thr Asp Gln Trp Tyr Leu Ser Asp Lys
 325 330 335
 Asn His Phe Val Leu Thr Val Glu Gly Glu Asn Arg Lys Glu Ile Leu
 340 345 350
 Thr Ser Ile Ser Thr Thr Val Ser Leu Leu Asn Asp Leu Ile Arg Asn
 355 360 365
 Gly Trp Gln Glu Asp Glu Leu Gln Asp Ile Lys Asn Asn Phe Cys Arg
 370 375 380
 Arg Met Lys Leu Ser Thr Asp Ala Pro Ser Arg Pro Ser Ser Met Trp
 385 390 395 400
 Cys Asp Asp Phe Ala Asp Tyr Val Ile Ser Gly Asp Arg Tyr Leu Thr
 405 410 415
 Asp Pro Ser Gln Gln Gln Gln Leu Lys Glu Ala Met Ser Arg Val Ser
 420 425 430
 Gly Gln Ser Leu Gln Thr Leu Leu Lys Glu Trp Met Ser Tyr Arg Glu
 435 440 445
 Glu Thr Leu Leu Val Ala Cys Ser Thr His Pro Gly Leu Gly Ala Pro
 450 455 460
 Leu Ser Glu Thr Glu Ile Ala Ser Ala Trp Ala Gln Gly Glu Gln Val
 465 470 475 480
 Glu Cys Thr Pro Phe Leu Tyr Phe Arg Pro Glu Lys Gln Glu Glu Ile
 485 490 495
 Asp Ile Glu Thr Pro Pro Cys Leu Ala Ala Arg Phe Pro Phe Asp Pro
 500 505 510
 Ala Ser Val Leu Arg Gln Thr Glu Tyr Pro Gln Asn Arg Ile Arg Glu
 515 520 525
 Val Glu Leu Lys Asn Gly Ile Arg Leu Val Leu Lys Pro Thr Leu Glu
 530 535 540
 Ala Asp Ser Thr Leu Leu Ile Thr Ser Phe Ala Pro Phe Gly Thr Ser
 545 550 555 560
 Ser Leu Ser Asp Glu Tyr Pro Leu Leu Glu Gly Phe Ala Gly Tyr
 565 570 575
 Ile Asp Met Gly Asp Ile Ala Lys Val Asp Gly Gln Val Leu Ser Asp
 580 585 590
 Tyr Leu Phe Arg Lys Glu Ile Ser Leu Ser Met Ala Val Glu Asn His
 595 600 605
 Trp His Gly Phe Ile Gly Met Ser Pro Thr Ala Asn Ala Pro Glu Leu
 610 615 620
 Phe Asn Leu Ile Tyr Glu Lys Ile Phe Asp Pro Glu Leu Lys Tyr Asp

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625          630          635          640
Glu Phe Glu Glu Ile Arg Gln Asp Leu Leu Glu Asn Gln Asp Lys Glu
645          650          655
Thr Ile Leu Glu Lys Met Leu Gln Arg Ser Pro Asp Arg Leu Leu Ser
660          665          670
Ala Arg Ile Asn Glu Leu Thr Gly Thr Gly Phe Ala Arg Ser Ser Gln
675          680          685
Lys Leu Ser Ser Glu Gln Ile Lys Asn Leu Asn Leu Asp Ser Ile Ala
690          695          700
Ala Phe Tyr Lys Lys Leu Tyr Thr Asn Pro Gln Gly Thr Thr Tyr Val
705          710          715          720
Ile Cys Gly Asn Phe Asn Ala Asp Thr Leu Met Gln Gln Phe Val Ser
725          730          735
Val Phe Gly Arg Ile Pro Val Ser Ser His Leu Ser Arg Phe Ser Tyr
740          745          750
Pro His Phe Asn Phe Pro Val Arg Lys His Ile Glu Gly Phe Pro Asn
755          760          765
Asp Asn Asp Thr Gln Thr Leu Phe Asp Tyr Leu Leu Pro Gly His Tyr
770          775          780
Gln Pro Gly Leu Lys Asn Thr Leu Thr Leu Lys Leu Met Arg Asp Leu
785          790          795          800
Ile Arg Asn Arg Leu Ile Ser Val Leu Arg Glu Gln Lys Ser Leu Val
805          810          815
Tyr Ser Pro Tyr Ile Ser Leu Met Tyr Glu Gly Ile Pro Gln Gly Ile
820          825          830
Phe Tyr Phe Asp Ile Asn Ala Ser Ala Asp Asn Asp Asn Met Pro Gln
835          840          845
Ile Glu Gln Leu Leu Lys Glu Ile Leu His Gln Leu Lys Gln Gln Glu
850          855          860
Val Asp Asn Glu Glu Leu Asn Thr Leu Lys Arg Ser Phe Leu Ile Ala
865          870          875          880
Lys Arg Glu Ala Leu Asn Glu Glu Ser Pro Ser Ala Trp Arg Ala Ala
885          890          895
Leu Val Gly Leu Leu Lys Asn Gly Glu Thr Ile Ser Asp Phe Asp His
900          905          910
Tyr Glu Gln Cys Leu Asp Ser Ile Thr Pro Ala Ile Leu Arg Glu Ala
915          920          925
Phe Arg Arg Tyr Leu Asp Thr Glu Asn Tyr Ile Leu Leu Tyr Leu Ser
930          935          940
Lys Asn Lys Leu Lys Asn Asp Thr Ser Asn His
945          950          955

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<210> 7835

<211> 720

<212> PRT

<213> B.fragilis

<400> 7835

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Lys Met Lys Ser Ile Ser Ile Thr Thr Tyr Arg Gly Phe Ser Lys Val
1          5          10          15
Lys Gly Lys Cys Ser Leu Gln Glu Leu Ile Gly Trp Val Arg Ser Arg
20          25          30
Gln Tyr Ala Asn Leu Ile Glu Lys Ile Gly Arg Leu Val Ser Glu Gly
35          40          45
Lys Thr Lys Glu Ala Glu Asn Val Lys Arg Gln Leu Asp Tyr Phe Thr
50          55          60
Val Thr Ala Asn Tyr His Glu Cys Arg Leu Ala His Ser Ile Ala Ala
65          70          75          80
Tyr Asn Asp Thr Ser Thr Ile Asp Ile Asp Lys Leu Arg Glu Glu Glu

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Lys Asp Tyr Gly Gly Asn Arg Arg Phe Leu Val Ile Pro Val Lys Thr
 565 570 575
 Ile Asp Tyr Arg Thr Pro Val Asp His Lys Gly Val Tyr Ala Gln Ala
 580 585 590
 Val Gln Leu Ile Glu Asp Gly Phe Arg Tyr Trp Phe Glu Gly Asn Glu
 595 600 605
 Ile Asp Asp Ile Asn Thr Arg Asn Glu Arg His Arg Met Lys Asp Pro
 610 615 620
 Leu Glu Glu Asn Leu Tyr Val Tyr Phe Arg Pro Ala Gly Glu Lys Asp
 625 630 635 640
 Phe Glu Val Lys Trp Lys Pro Ala Ala Ala Ile Leu Ala Thr Leu Ser
 645 650 655
 Val Tyr Gly Arg Thr Gln Ala Asn Ala Gln Thr Gln Gln Val Leu Val
 660 665 670
 Gln Ile Leu Glu Arg Asp Ala Phe Gly Lys Arg Val Asn Ile His Gly
 675 680 685
 Ile Thr Glu Tyr Ala Val Val Glu Leu Thr Gln Gln Glu Val Ser Glu
 690 695 700
 Asn Phe Arg Lys Arg Asp Lys Gly Lys Glu Met Asp Glu Leu Pro Phe
 705 710 715 720

<210> 7836

<211> 921

<212> PRT

<213> B.fragilis

<400> 7836

Thr Met Lys Arg Phe Phe Leu Leu Thr Ile Ile Leu Thr Val Val Val
 1 5 10 15
 Thr Gly Lys Val Gly Ala Gln Glu Ala Ala Ser Ala Ser Lys Arg Ala
 20 25 30
 Asn Gln Gln Tyr Val Leu Phe Glu Ser Glu Arg Asp Lys Gly Thr Asn
 35 40 45
 Val Thr Ala Met Tyr Asp Tyr Leu Met Asp Ser Tyr Glu Asn Phe Met
 50 55 60
 Lys Val Val Glu Ala Pro Asp Asn Ser Gln Tyr Ile Gly Gly Ala Lys
 65 70 75 80
 Asn Arg Leu Arg Ala Leu Tyr Pro Tyr Leu Leu Asn Gly Ala Val Tyr
 85 90 95
 Tyr Ser Glu Gln Lys Gln Pro Ser Lys Ala Leu Asp Phe Ala Ala Ala
 100 105 110
 Tyr Ile Asp Met Pro Gln Leu Lys Leu Phe Arg Ser Glu Leu Leu Pro
 115 120 125
 Lys Asp Asn Arg Tyr Ala Ser Val Val Tyr Tyr Ala Ala Val Ala Ala
 130 135 140
 Phe Asn Leu Glu Lys Asn Glu Lys Ala Leu Arg Tyr Phe Gln Glu Tyr
 145 150 155 160
 Leu Asn Thr Gly Thr Glu Ala Gln Gln Lys Asp Cys Tyr Val Tyr Met
 165 170 175
 Asn Met Ile Tyr Gln Lys Gln Lys Lys Tyr Ala Asp Gln Glu Arg Val
 180 185 190
 Leu Glu Gln Ala Ile Ala Lys Tyr Pro Val Ser Leu Asp Phe Leu Tyr
 195 200 205
 Asn Leu Val Asn Val His Ile Ala Thr Asn Asn Met Glu Lys Leu Ile
 210 215 220
 Gly Ala Ile Asp Arg Ile Leu Ala Val Asp Pro Asn Asn Asp Lys Val
 225 230 235 240
 Leu Pro Ile Lys Ala Arg Ile Leu Glu Arg Gln Gly Lys Asn Val Glu
 245 250 255

Ala	Leu	Asp	Ile	Tyr	Lys	Arg	Leu	Tyr	Ala	Leu	His	Pro	Glu	Ser	Phe
			260					265					270		
Glu	Leu	Met	Thr	Gly	Val	Ala	Arg	Ala	Asn	Phe	Asn	Cys	Ala	Thr	Glu
		275					280					285			
Ile	Val	Asn	Asn	Gly	Ala	Thr	Ile	Ala	Asn	Asp	Thr	Glu	Tyr	Ala	Leu
	290					295					300				
Val	Arg	Gln	Arg	Ala	Ser	Gly	Tyr	Leu	Met	Asp	Ala	Lys	Asp	Leu	Phe
305					310					315					320
Leu	Lys	Ile	Leu	Gln	Lys	Asp	Pro	Ser	Ser	Lys	Met	Tyr	Met	Gln	Gly
			325						330					335	
Leu	Ala	Gly	Val	Tyr	Gln	Tyr	Met	Asp	Met	Lys	Pro	Glu	Tyr	Glu	Val
		340						345					350		
Leu	Asn	Lys	Ile	Val	Gln	Asp	Gly	Ala	Ser	Tyr	Thr	Ala	Phe	Pro	Ser
	355						360					365			
Arg	Leu	Ala	Ala	Tyr	Lys	Glu	Ala	Leu	Lys	Lys	Thr	Glu	Asn	Val	Ala
	370					375						380			
Gln	Glu	Gln	Gln	Ala	Val	Pro	Val	Pro	Ile	Glu	Pro	Ala	Met	Leu	Val
385					390					395					400
Ile	Lys	Val	Asp	Gln	Phe	Thr	Asp	Ala	Asn	Asn	Asn	Lys	Val	Ile	Asp
			405						410					415	
Ala	Gly	Glu	Ser	Phe	Ala	Ile	Arg	Phe	Thr	Ile	Glu	Asn	Gln	Gly	Lys
	420							425					430		
Gly	Asp	Ala	Tyr	Asn	Val	Arg	Leu	Arg	Leu	Ala	Glu	Gln	Gln	Gly	Tyr
	435						440					445			
Asp	Gln	Tyr	Phe	Asp	Gly	Pro	Arg	Glu	Leu	Asp	Gly	Gly	Asn	Ile	Ala
	450					455					460				
Ala	Gly	Lys	Ser	Lys	Glu	Tyr	Thr	Phe	Arg	Tyr	Ile	Ala	Lys	Lys	Glu
465					470					475					480
Leu	Pro	Thr	Ser	Leu	Ala	Lys	Ile	Asn	Ile	Tyr	Ala	Phe	Glu	Ala	Asn
			485						490					495	
Gly	Phe	Asp	Ala	Asp	Pro	Ser	Glu	Leu	Ile	Val	Asn	Thr	Gln	Glu	Tyr
		500						505					510		
Ala	Met	Pro	Arg	Leu	Arg	Val	Ala	Asp	His	Gln	Phe	Phe	Ala	Ser	Glu
	515						520					525			
Gly	Ser	Ser	Ile	Thr	Leu	Gly	Lys	Asn	Gly	Lys	Leu	Thr	Val	Ala	Leu
	530					535					540				
Gln	Asn	Phe	Gly	Thr	Gln	Thr	Ala	Arg	Lys	Val	Lys	Val	Asn	Phe	Thr
545					550					555					560
Leu	Pro	Lys	Asn	Val	Tyr	Thr	Thr	Asp	Thr	Pro	Glu	Ile	Ile	Val	Asp
			565						570					575	
Ser	Ile	Ala	Pro	Gly	Asp	Val	Ala	Ile	Leu	Asp	Tyr	Gly	Phe	Leu	Val
		580						585					590		
Asn	Lys	Arg	Phe	Asp	Gly	Asp	Ser	Ile	Ala	Val	Met	Leu	Ala	Val	Thr
	595					600						605			
Glu	Ser	Thr	Arg	Ser	Ala	Ser	Leu	Asn	Glu	Ala	Tyr	Lys	Val	Lys	Val
	610					615					620				
Gly	Glu	Tyr	Leu	Ser	Ala	Ser	Ala	Ser	Met	Asn	Leu	Ser	Gly	Asn	Val
625					630					635					640
Ala	Ala	Arg	Lys	Val	Asn	Val	Lys	Asp	Phe	Ser	Leu	Gly	Phe	Lys	Ser
			645						650					655	
Glu	Leu	Met	Glu	Asp	Val	Pro	Val	Gly	Ala	Val	Asn	Arg	His	Arg	Tyr
	660							665					670		
Ala	Leu	Ile	Gly	Asn	Glu	Asp	Tyr	Ser	Met	Thr	Gly	Ala	Asn	Ala	
	675					680						685			
Glu	Ile	Asn	Val	Pro	Tyr	Ala	Val	Asn	Asp	Ala	Val	Leu	Phe	Arg	Glu
	690					695					700				
Tyr	Cys	Val	Arg	Thr	Phe	Gly	Val	Pro	Asp	Gly	Gln	Ile	Lys	Val	Val
705					710					715					720
Pro	Asn	Ala	Thr	Ala	Gly	Met	Met	His	Glu	Gln	Leu	Asp	Trp	Leu	Val

210	215	220
Val Ile Phe Pro Gly Tyr Glu Val Asp Cys Ser Tyr Cys Ile Lys Ile		
225	230	235
Ser Arg Asp Ala Asp Ile Met Ile Asp Asp Thr Ile Asn Ser Val Asp		
	245	250
Leu Val Glu Gln Val Lys Lys Lys Ile Lys Lys Arg Lys Ile Gly Ala		
	260	265
Val Cys Arg Phe Val Tyr Asp Arg Ala Met Pro Asp Asp Phe Leu Asn		
	275	280
Phe Leu Val Asp Ala Phe Arg Ile Arg His Glu Glu Leu Val Pro Gly		
	290	295
Asp Lys His Leu Asn Leu Glu Asp Leu Arg His Leu Pro Asn Pro Asn		
305	310	315
His Ser Ile Pro Arg Ile Glu Arg Pro Ile Pro Met Lys Leu Asn Arg		
	325	330
Leu Asn Asp Lys Glu Ser Ile Phe Ser Tyr Val Glu Lys Lys Asp Leu		
	340	345
Leu Leu Tyr Tyr Pro Tyr His Ser Phe Asp His Phe Ile His Phe Leu		
	355	360
Tyr Glu Ala Val His Asn Pro Glu Thr Arg Glu Ile Met Val Thr Gln		
	370	375
Tyr Arg Val Ala Glu Asn Ser Ala Val Ile Asn Thr Leu Ile Ala Ala		
385	390	395
Ala Gln Asn Gly Lys Lys Val Thr Val Phe Val Glu Leu Lys Ala Arg		
	405	410
Phe Asp Glu Glu Asn Asn Leu Ala Thr Ala Glu Met Met Lys Ala Ala		
	420	425
Gly Ile Asn Ile Ile Tyr Ser Ile Pro Gly Leu Lys Val His Ala Lys		
	435	440
Val Ala Leu Ile Arg Arg Arg Ser Phe Asn Gly Glu Lys Ile His Ser		
	450	455
Tyr Ala Tyr Ile Ser Thr Gly Asn Phe Asn Glu Lys Thr Ala Thr Leu		
465	470	475
Tyr Ala Asp Cys Gly Leu Phe Thr Ser Asn Pro Val Ile Val His Asp		
	485	490
Leu Thr Asn Leu Phe Arg Thr Leu Arg Gly Lys Glu Asn Pro Arg Phe		
	500	505
Thr Arg Leu Leu Val Ala Arg Phe Asn Leu Ile Pro Glu Leu Asn Arg		
	515	520
Leu Ile Asp Lys Glu Ile Glu Leu Ala Glu Lys Gly Arg Gly Arg Arg		
	530	535
Ile Ile Leu Lys Met Asn Ala Leu Gln Asp Pro Ile Met Ile Asp Arg		
545	550	555
Leu Tyr Glu Ala Ser Gln Lys Gly Val Lys Ile Asp Leu Ile Val Arg		
	565	570
Gly Ile Cys Cys Leu Ile Pro Gly Gln Glu Tyr Ser Cys Asn Ile Arg		
	580	585
Val Thr Arg Ile Val Asp Ser Phe Leu Glu His Ala Arg Ile Trp Tyr		
	595	600
Phe Gly Asn Ala Gly His Pro Lys Val Tyr Met Gly Ser Pro Asp Trp		
	610	615
Met Arg Arg Asn Leu Tyr Arg Arg Ile Glu Ala Val Val Pro Ile Leu		
625	630	635
Asp Asn Glu Leu Arg Glu Glu Ile Val Asp Met Leu His Ile Gln Leu		
	645	650
Ser Asp Asn Gln Lys Ala Cys Phe Val Asp Asp Lys Leu Asn Asn Ile		
	660	665
Phe Lys Phe Lys Thr Asn Ala Ala Pro Val Arg Ala Gln Tyr Thr Phe		
	675	680
		685

Tyr Asn Tyr Leu Lys Glu Lys Asn Glu Thr Phe Leu
 690 695 700

<210> 7838
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 7838
 Asn Lys His Tyr Trp Thr Ser Thr Leu Tyr Ile Val Glu Phe Tyr Asn
 1 5 10 15
 Leu Arg Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe
 20 25 30
 Gly Trp Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe
 35 40 45
 Leu Leu Leu Thr Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met Ser
 50 55 60
 Arg Leu Asp Thr Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys
 65 70 75 80
 Ala Phe Val Phe Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met Thr
 85 90 95
 Ala Arg Gln Tyr Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala
 100 105 110
 Lys Pro Phe Lys Thr Glu Phe Gly
 115 120

<210> 7839
 <211> 377
 <212> PRT
 <213> B.fragilis

<400> 7839
 Leu Pro Val Ile Ile Pro Asp Ile Leu Asn Ser Cys Pro Phe Arg Asp
 1 5 10 15
 Gly Ala Ala Asp Arg His Lys Leu Asn Ser Gln Asn Lys Thr Gln Met
 20 25 30
 Ile Arg Thr Met Ile Ala Ser Cys Leu Leu Ala Cys Ser Gly Phe Val
 35 40 45
 Ser Ala Gln Met Thr Gly Gly Asn Pro Glu Glu Val Lys Gln Thr Ala
 50 55 60
 Pro Ala Pro Leu Tyr Arg Asp Pro Val Tyr Asp Gly Val Ala Asp Pro
 65 70 75 80
 Val Val Val Trp Asn Lys Glu Asp Arg Ser Trp Trp Met Leu Tyr Thr
 85 90 95
 Gln Arg Arg Ala Asn Val Asn Ala Gly Asn Val Ala Tyr Cys Tyr Gly
 100 105 110
 Asn Asp Ile Gly Ile Ala Ser Ser Arg Asp His Gly Arg Thr Trp Val
 115 120 125
 Tyr Arg Gly Val Leu Asp Leu Asn Met Glu Arg Gly Lys Asn Thr Phe
 130 135 140
 Trp Ala Pro Glu Val Val Asn Phe Asn Gly Val Tyr His Leu Phe Val
 145 150 155 160
 Ser Tyr Ile Glu Gly Val Arg Thr Asp Trp Gly Gly His Ala Arg Met
 165 170 175
 Ala His Tyr Thr Ser Lys Asn Met Trp Asp Trp Lys Phe Glu Gly Phe
 180 185 190
 Val Lys Leu Ser Ser Asp Lys Thr Ile Asp Ala Thr Phe Phe Arg Met
 195 200 205
 Pro Asp Gly Lys Trp Arg Ala Trp Tyr Lys Asp Glu Thr Arg Asn Ala

245 250 255
 Met Lys Leu Leu Asn Trp Asn Lys Glu Ser Lys Glu Thr Phe Ala Val
 260 265 270
 Ser Leu Asp Ala Ile Arg Leu Lys Asp Ile Thr Ser Thr Ser Thr Arg
 275 280 285
 Leu Glu Tyr Leu Gly Pro Gly Lys Asn Tyr Tyr Gly Asp Pro Ile Thr
 290 295 300
 Ile Val Pro Phe Thr Tyr Gln Phe Ser Ala Leu Asp Arg Gln Asn Lys
 305 310 315 320
 Leu Leu Glu Ser Gly Asn Ala Glu Ile Lys Glu Ile Asn Asp Gln Gly
 325 330 335
 Ala Ser Ala Asp Pro Ala Tyr Tyr Leu Asn Cys Tyr Asp Leu Val Asn
 340 345 350
 Ser Asp Asn Tyr Asp Thr Pro Glu Asn Phe Ile Lys Ser Thr Gly Asn
 355 360 365
 Ile Asp Phe Ala Thr Asp Lys Met Thr Tyr Gln Phe Leu Leu Ser His
 370 375 380
 Val Asn Ala Gly Gly Tyr Thr Arg Ile Thr Val Val Tyr Glu Lys Lys
 385 390 395 400

<210> 7841

<211> 417

<212> PRT

<213> B.fragilis

<400> 7841

Arg Ile Tyr Ile Ile Met Lys Lys Leu Ile Phe Met Gly Ile Leu Gly
 1 5 10 15
 Leu Phe Ile Leu Gly Ser Cys Asn Ser Lys Ser Gly Gly Asn His Glu
 20 25 30
 Gly His Asp His Gly Thr Glu Ala His Asp His Glu His Glu Gly His
 35 40 45
 Asp His Glu His Glu Gly Glu Asp His Glu Gly His Asp His Glu Gly
 50 55 60
 Asp Glu His Ser Arg Ser Ser Glu Pro Ala Thr Gly His Ser Asp Glu
 65 70 75 80
 Ile Ile Leu Pro Lys Ala Lys Ala Glu Ala Ala Gly Val Lys Thr Ser
 85 90 95
 Ile Ile Glu Pro Glu Val Phe Glu Gln Val Ile Lys Thr Ser Gly Gln
 100 105 110
 Val Leu Ala Ala Gln Gly Asp Glu Ser Val Ala Val Ala Thr Val Ala
 115 120 125
 Gly Val Val Ser Phe Arg Gly Lys Val Thr Glu Gly Met Ser Val Gly
 130 135 140
 Lys Gly Thr Ala Leu Val Thr Ile Ser Ser Ser Asn Ile Ala Asp Gly
 145 150 155 160
 Asp Pro Val Gln Arg Ala Arg Ile Ala Tyr Asp Ile Ser Arg Lys Glu
 165 170 175
 Tyr Glu Arg Met Gln Ala Leu Val Lys Asn Lys Ile Val Ser Asp Lys
 180 185 190
 Glu Phe Ala Gln Ala Glu Gln Asn Tyr Glu Asn Ala Arg Ile Ser Tyr
 195 200 205
 Glu Ala Leu Ala Lys Asn His Ser Ala Gly Gly Gln Ala Val Thr Ser
 210 215 220
 Pro Ile Ser Gly Phe Val Lys Asn Ile Leu Val Lys Glu Gly Asp Tyr
 225 230 235 240
 Val Thr Ile Gly Gln Pro Leu Val Ser Ile Thr Gln Asn Arg Arg Leu
 245 250 255
 Phe Leu Arg Ala Glu Val Ser Glu Lys Tyr Tyr Pro Ser Leu Arg Thr

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                260                265                270
Ile Gly Ser Ala Asn Phe Lys Thr Pro Tyr Asp Asn Lys Val Tyr Glu
      275                280                285
Leu Lys Glu Leu Asn Gly Arg Leu Leu Ser Phe Gly Lys Ser Ala Gly
      290                295                300
Glu Asn Ser Phe Tyr Val Pro Val Thr Phe Glu Phe Asp Asn Lys Gly
305                310                315                320
Asp Ile Ile Pro Gly Ser Phe Val Glu Val Tyr Leu Leu Ser Ser Pro
      325                330                335
Met Glu Asn Val Leu Ser Leu Pro Arg Thr Ala Leu Thr Glu Glu Gln
      340                345                350
Gly Leu Phe Phe Ala Tyr Leu Gln Leu Asp Glu Glu Gly Tyr Lys Lys
      355                360                365
Gln Glu Val Thr Leu Gly Ala Asp Asn Gly Lys Ser Val Gln Val Leu
      370                375                380
Ser Gly Ile Lys Ala Gly Asp Arg Val Val Thr Gln Gly Ala Tyr Gln
385                390                395                400
Val Lys Leu Ala Ser Ala Ser Asn Ala Ile Pro Ala His Ser His Glu
      405                410                415
His

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<210> 7842
<211> 1019
<212> PRT
<213> B.fragilis

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<400> 7842
Asn Ala Asn Met Lys Ala Val Ile Ile Ser Phe Phe Ile Thr Leu Ser
1      5      10      15
Thr Leu Thr Ser His Ala Gln Gln Arg Asp Ile Val Leu Thr Gly Thr
      20      25      30
Val Thr Asp His Gln Asn Glu Pro Leu Pro Gly Ala Thr Ile Arg Ile
      35      40      45
Lys Gly Thr Gln Phe Gly Thr Val Thr Asp Thr Asp Gly His Tyr Leu
50      55      60
Leu Arg Gly Lys Trp Lys Glu Asn Asp Leu Ile Leu Phe Ser Phe Ile
65      70      75      80
Gly Met Lys Glu Ile Arg Val Lys Tyr Thr Gly Gln Lys Val Gln Asp
      85      90      95
Ala Ala Met Gln Glu Asp Pro Lys Ala Leu Asp Glu Val Ile Ile Val
      100     105     110
Ala Arg Gln Asn Ile Asn Glu Leu Asp Ile Arg Ala Lys Ser Gly Val
      115     120     125
Val Gln Arg Val Asp Val Glu Arg Leu Asn Ser Lys Pro Met Ile Asp
130     135     140
Met Ser Leu Ala Leu Gln Gly Thr Val Pro Gly Leu Ile Ile Thr Asn
145     150     155     160
Thr Gly Asp Leu Gly Ser Lys Pro Glu Ile Arg Ile Arg Gly Asn Ser
      165     170     175
Ser Phe Arg Lys Gly Asp Met Ala Asn Glu Pro Leu Tyr Val Met Asp
      180     185     190
Gly Lys Val Ile Ser Ser Asp Ala Phe Met Thr Leu Asn Pro Ala Asp
195     200     205
Ile Gln Glu Ile Lys Val Leu Lys Asp Ala Val Ala Cys Ala Leu Tyr
210     215     220
Gly Ile Lys Ala Ala Asn Gly Val Ile Glu Ile Thr Ser Gln Arg Gly
225     230     235     240
Asn Pro Asp Gly Arg Leu Thr Thr Ser Tyr Ser Phe Asn Ile Gly Ile

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Leu Asn Leu Tyr Arg Arg Glu Thr Ser Asp Ala Leu Leu Asp Val Pro
      725      730      735
Ile Pro Leu Ser Asn Gly Phe Asn Thr Met Lys Arg Asn Ile Gly Val
      740      745      750
Leu Arg Asn Glu Gly Tyr Glu Leu Thr Ala Ala Leu Lys Val Leu Asp
      755      760      765
Thr Pro Asp Trp Arg Val Ser Leu Arg Gly Ser Leu Ala Tyr Asn Arg
      770      775      780
Asn Lys Val Ile Ser Leu Tyr Tyr Thr Asp Arg Leu Tyr Thr Ser Glu
      785      790      795      800
Thr Ala Leu Thr Pro Asp Tyr Glu Val Gly Lys Ala Tyr Asn Met Leu
      805      810      815
Tyr Gly Leu Lys Ser Leu Gly Ile Asn Pro Ile Thr Gly Leu Pro Val
      820      825      830
Phe Gln Gly Ala Asp Gly Ser Glu Ile Pro Pro Thr Gln Asn Pro Ala
      835      840      845
Arg Glu Asn Phe Ile Val Leu Gly His Ser Thr Pro Pro Tyr Ser Gly
      850      855      860
Thr Phe Asn Leu Asn Phe Ser Tyr Arg Asn Phe Asp Leu Asp Met Asp
      865      870      875      880
Phe Tyr Tyr Val Phe Gly Gly Ile Lys Pro Tyr Asn Tyr Ser Tyr Val
      885      890      895
Arg Ser Ala Asp Ser Ala Asn Lys Asn Ala Ile Gln Lys Gln Leu Glu
      900      905      910
Asn Met Trp Phe His Arg Gly Asp Glu Gly Lys Ile Tyr His Ser Pro
      915      920      925
Phe Tyr Ile Ser Pro Ala Asn Ala Ser Leu Gln Gln Pro Asn Thr Glu
      930      935      940
Thr Val Gly Lys Ser Asp Tyr Leu Lys Leu Ala Met Leu Ser Leu Arg
      945      950      955      960
Tyr Arg Val Pro His Thr Phe Leu Glu Lys Asn Cys His Phe Ile Lys
      965      970      975
Tyr Ala Asn Ile Ala Phe Gln Ala Ser Asn Leu Phe Met Ile Thr Pro
      980      985      990
Tyr Lys Glu Ser Asp Pro Glu Thr Gly Ser Leu Ala Gly Ala Met Gln
      995      1000      1005
Pro Val Leu Thr Ile Asn Leu Ser Leu Thr Phe
      1010      1015

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<210> 7843

<211> 166

<212> PRT

<213> B.fragilis

<400> 7843

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Ile Val Asn Ile Ser Met Asn Ser Leu Asp Ser Gln Ile Thr Ala Leu
1      5      10      15
Tyr Thr Leu Ala His Glu Leu Leu Tyr Leu Gly Ser Asp Gly Ser Pro
      20      25      30
Ile Tyr Ser Asp His Phe Ser Arg Leu Asn Gly Asp Val Leu Ser Arg
      35      40      45
Ala Asn Thr Leu Tyr Pro His His Gly Ser Thr Asp Glu Glu Glu Ala
      50      55      60
Arg Leu Cys Leu Ser Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asn
      65      70      75      80
Asn Gly Asp Lys Glu Val Arg Ile Gln Gln Ile Leu Asn Arg Cys Trp
      85      90      95
Glu Val Leu Asp Arg Leu Pro Ala Ser Leu Leu Lys Val Arg Leu Leu
      100      105      110

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Thr Tyr Cys Tyr Gly Glu Val Phe Asp Asp Asp Leu Ser Arg Glu Ala
 115 120 125
 His Ser Ile Ile Asp Ser Trp Gly Glu Arg Ala Leu Ser Gly Asp Glu
 130 135 140
 Cys Glu Ile Ala Glu Gln Leu Arg Ser Leu Glu Glu Asn Pro Tyr Pro
 145 150 155 160
 Asn Trp Glu Val Glu Glu
 165

<210> 7844
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 7844
 Lys Lys Asn Ile Met Lys Leu Lys Glu Ile Ser Lys Asp Ile Tyr Asp
 1 5 10 15
 Val Asp Ala Trp Leu Asp Glu Glu Leu Gly Lys Glu Gly Thr Pro Glu
 20 25 30
 Arg Glu Ala Ser Ile Glu Lys Ala Trp Glu Glu Tyr Asn Gly Gln Ile
 35 40 45
 Leu Leu Asp Ala Arg Lys Asn Ala Arg Leu Thr Gln Glu Glu Leu Ala
 50 55 60
 Asn Arg Ile Gly Ala Asp Lys Ser Tyr Ile Ser Lys Ile Glu Arg Gly
 65 70 75 80
 Leu Ile Thr Pro Thr Val Ser Thr Leu Tyr Arg Ile Ala Ala Ala Met
 85 90 95
 Gly Leu Ser Val Glu Leu Arg Pro Leu
 100 105

<210> 7845
 <211> 179
 <212> PRT
 <213> B.fragilis

<400> 7845
 Asn Thr Asp Met Asn Ile Phe Gly Thr Tyr Ala Tyr Ala Tyr Phe Lys
 1 5 10 15
 Tyr Leu Leu Leu Lys Asp Met Asp Val Leu Ile Ser Phe Phe Arg Lys
 20 25 30
 Lys Gly Ile Cys Ile Gly Glu Asn Cys Phe Ile Tyr Ser Ala Ile Cys
 35 40 45
 Thr Pro Glu Pro Tyr Leu Ile Ile Ile Lys Asn Asn Val Thr Ile Ser
 50 55 60
 Val Gly Val Gln Leu Ile Thr His Asp Asn Ser Val Cys Lys Val Leu
 65 70 75 80
 Pro Asn Arg Thr Asp Ala Phe Gly Arg Ile Val Ile Gly Asn Asn Ser
 85 90 95
 Phe Ile Gly Ala Gly Ser Ile Ile Leu Pro Gly Val Thr Ile Gly Asp
 100 105 110
 Asn Cys Ile Val Ala Ala Gly Ser Ile Val Thr Lys Ser Leu Gly Asp
 115 120 125
 Asn Val Val Ile Gly Gly Asn Pro Ala Lys Ile Ile Ser Thr Ile Asp
 130 135 140
 Glu Tyr Lys Asp Lys Ile Ser Asp Lys Ser Phe Asn Val Asn Gly Met
 145 150 155 160
 Thr Phe Val Gln Lys Arg Asn His Ile Leu Ser Ser Leu Asp Lys Leu
 165 170 175
 Ile Gln Lys

<210> 7846
 <211> 547
 <212> PRT
 <213> B.fragilis

<400> 7846

Arg	Ser	Asp	Met	Ile	Ser	Val	Asp	Gly	Leu	Ala	Val	Glu	Phe	Gly	Gly
1				5					10					15	
Thr	Thr	Leu	Phe	Ser	Asp	Ile	Ser	Phe	Val	Ile	Asn	Glu	Lys	Asp	Arg
			20					25					30		
Ile	Ala	Leu	Met	Gly	Lys	Asn	Gly	Ala	Gly	Lys	Ser	Thr	Leu	Leu	Lys
		35					40					45			
Ile	Leu	Ala	Gly	Val	Arg	Gln	Pro	Thr	Arg	Gly	Arg	Ile	Ser	Ala	Pro
	50					55					60				
Lys	Glu	Cys	Val	Ile	Ala	Tyr	Leu	Pro	Gln	His	Leu	Met	Thr	Glu	Asp
65					70					75					80
Gly	Arg	Thr	Val	Phe	Glu	Glu	Thr	Ala	Gln	Ala	Phe	Ala	His	Leu	His
			85						90					95	
Glu	Met	Glu	Ala	Glu	Ile	Glu	Arg	Met	Asn	Lys	Glu	Leu	Glu	Thr	Arg
			100					105					110		
Thr	Asp	Tyr	Glu	Ser	Asp	Ser	Tyr	Met	Glu	Leu	Ile	Glu	Asn	Val	Ser
	115						120					125			
Thr	Leu	Ser	Glu	Lys	Phe	Tyr	Ala	Ile	Asp	Ala	Thr	Asn	Tyr	Glu	Glu
	130					135					140				
Asp	Val	Glu	Lys	Ala	Leu	Leu	Gly	Leu	Gly	Phe	Met	Arg	Glu	Asp	Phe
145					150					155					160
His	Arg	Gln	Thr	Ser	Asp	Phe	Ser	Gly	Gly	Trp	Arg	Met	Arg	Ile	Glu
			165						170					175	
Leu	Ala	Lys	Leu	Leu	Leu	Gln	Lys	Pro	Asp	Val	Leu	Leu	Leu	Asp	Glu
			180					185					190		
Pro	Thr	Asn	His	Leu	Asp	Ile	Glu	Ser	Ile	Gln	Trp	Leu	Glu	Asp	Phe
	195						200					205			
Leu	Ile	Asn	Asn	Gly	Lys	Ala	Val	Ile	Val	Ile	Ser	His	Asp	Arg	Lys
	210					215					220				
Phe	Val	Asp	Asn	Ile	Thr	Thr	Arg	Thr	Ile	Glu	Val	Thr	Met	Gly	Arg
225					230					235					240
Ile	Tyr	Asp	Tyr	Lys	Val	Asn	Tyr	Ser	Lys	Tyr	Leu	Glu	Leu	Arg	Lys
			245						250					255	
Glu	Arg	Arg	Glu	Gln	Gln	Gln	Lys	Ala	Tyr	Glu	Glu	Gln	Gln	Lys	Phe
			260					265					270		
Ile	Ala	Glu	Thr	Lys	Asp	Phe	Ile	Glu	Arg	Phe	Lys	Gly	Thr	Tyr	Ser
	275					280						285			
Lys	Thr	Leu	Gln	Val	Gln	Ser	Arg	Val	Lys	Met	Leu	Glu	Lys	Leu	Glu
	290					295					300				
Ile	Leu	Glu	Val	Asp	Glu	Glu	Asp	Thr	Ser	Ala	Leu	Arg	Leu	Lys	Phe
305					310					315					320
Pro	Pro	Ser	Pro	Arg	Ser	Gly	Asn	Tyr	Pro	Val	Ile	Met	Asp	Gly	Val
			325						330					335	
Gly	Lys	Ser	Tyr	Gly	Asp	Lys	Val	Val	Phe	Arg	Asn	Ala	Thr	Leu	Thr
			340					345					350		
Val	Glu	Arg	Gly	Asp	Lys	Val	Ala	Phe	Val	Gly	Lys	Asn	Gly	Glu	Gly
	355					360						365			
Lys	Ser	Thr	Leu	Val	Lys	Cys	Ile	Met	Asn	Glu	Ile	Glu	His	Asp	Gly
	370					375					380				
Thr	Leu	Thr	Leu	Gly	His	Asn	Val	Gln	Ile	Gly	Tyr	Phe	Ala	Gln	Asn
385					390					395					400
Gln	Ala	Ser	Leu	Leu	Asp	Glu	Asn	Leu	Thr	Val	Phe	Gln	Thr	Ile	Asp

405 410 415
 Asp Val Ala Lys Gly Glu Ile Arg Asn Lys Ile Arg Asp Leu Leu Gly
 420 425 430
 Ala Phe Met Phe Gly Gly Pro Glu Glu Ser Met Lys Lys Val Lys Val
 435 440 445
 Leu Ser Gly Gly Glu Arg Thr Arg Leu Ala Met Ile Lys Leu Leu Leu
 450 455 460
 Glu Pro Val Asn Leu Leu Ile Leu Asp Glu Pro Thr Asn His Leu Asp
 465 470 475 480
 Leu Lys Thr Lys Asp Ile Leu Lys Gln Ala Leu Lys Asp Phe Asp Gly
 485 490 495
 Thr Leu Ile Val Val Ser His Asp Arg Asp Phe Leu Asp Gly Leu Val
 500 505 510
 Thr Lys Val Tyr Glu Phe Gly Asn Gln Lys Val Thr Glu His Leu Cys
 515 520 525
 Gly Ile Tyr Glu Phe Leu Asp Lys Lys Lys Met Asp Ser Leu Arg Glu
 530 535 540
 Leu Glu Lys
 545

<210> 7847

<211> 473

<212> PRT

<213> B.fragilis

<400> 7847

His Tyr Cys Ile Ile His Ile Gly His Lys Gln Asn Ile His Arg Thr
 1 5 10 15
 Lys Arg Thr Arg Asn Gln Gln Asp Arg Tyr His Arg Leu Ser Trp Cys
 20 25 30
 Glu Thr His Cys Gln Glu Leu Met Met Asn Met Val Leu Val Arg Phe
 35 40 45
 Glu Arg Ala Leu Ala Thr Ala Asn Thr Asn His His His Thr Asp His
 50 55 60
 Ile Glu Cys Arg Asp Asn Gln Arg Thr Glu Ser Asn His Glu Ser Thr
 65 70 75 80
 Phe Gly Ile Arg Gly Asp Ile Gln Ile Val Leu Ala Val Phe Asp Gly
 85 90 95
 Lys Glu Arg Glu His Ile Ala Gln Ser Gln Ala Ala Arg Ile Thr His
 100 105 110
 Lys Asn Leu Thr Gly Thr Phe Arg Thr Ala Glu Asp Val Ile Val Lys
 115 120 125
 Glu Arg Asp Gln His Thr Glu Arg Gly Lys Gly Glu His Ala Val Arg
 130 135 140
 Pro Lys Phe Phe Leu His Glu Gln Glu Ala Glu Asp Lys Gln Gly Asn
 145 150 155 160
 Ala Ala Gln Thr Gly Gly Lys Thr Val Asp Thr Val Asn Gln Ile Asp
 165 170 175
 Gly Ile Gly Asp Lys Asp Asn Gln Lys Asn Arg Lys Arg His Thr Tyr
 180 185 190
 Pro Gly Arg Lys Gly Ile Gln Ala Glu Lys Thr Val Glu Val Ile Asp
 195 200 205
 Pro Lys Ala Gly Gln Gly Lys Lys Arg Ser Thr Asp Asp Leu Asp His
 210 215 220
 Lys Phe Leu Thr Val Ala His Ser Asp Lys Val Ile Gly Asn Thr Arg
 225 230 235 240
 Gln Val Glu Gln Ser His Pro Ala Asp Gln Lys Gln Ala Leu Gly Gln
 245 250 255
 Gln Val His Arg Thr Glu Gly Gly Asn Ile Ile Thr His Gln Asp Ala

260	265	270
Lys Gly Glu His Ala Thr Gly Gly Lys Gln Asp Gly Gly Glu Glu Arg		
275	280	285
Asp Thr Ala Gln Thr Gly Asn Gly Thr Phe Met Asn Leu Ala Leu Thr		
290	295	300
Arg His Ile Glu Lys Leu Leu Pro Gln Arg Asp Lys Gln Asp Ala Gly		
305	310	315
Asn Asp Lys Pro Gly Asn Arg Ser Arg Asp Asp Lys Ser Gln Tyr Asp		
325	330	335
Glu Lys Asp Ile Gln Asp Lys Gly Asp Leu Gly Tyr Ile Gln Cys Cys		
340	345	350
Val Glu Lys Glu Lys Ser Leu Leu Leu Tyr Phe Pro Val Gly Ile Arg		
355	360	365
Ile Leu Phe Lys Thr Ala Glu Leu Phe Gly Asn Leu Thr Phe Ile Ala		
370	375	380
Gly Lys Gly Thr Leu Ser Pro Ala Val Asp Asp Ala Met Arg Leu Thr		
385	390	395
Gly Glu Val Val Val Lys Asp Phe Thr Ile Ala Ile Ser Gln Lys Ala		
405	410	415
His Leu Gln Gln Gly Ser Gly Gln Ala Val Glu His Phe Pro Thr Thr		
420	425	430
Val Gln Asp Leu Leu Asp Ala Asp Phe Leu Val Thr Val Ile Val Asp		
435	440	445
Arg Arg Val Ile Thr His Gln Lys Arg Lys Ala Gln Thr Gly Phe Phe		
450	455	460
Leu Val Gly Gly Ala Met Met Gly Ile		
465	470	

<210> 7848

<211> 189

<212> PRT

<213> B.fragilis

<400> 7848

Ser Ile Gly Ile Cys Phe Pro Phe Ala Arg Lys Val Cys Pro Asn Ile		
1	5	10
Val Thr Phe Ala Glu Ile Asn Lys Glu Ser Met Thr Lys Val Gly Leu		
20	25	30
Leu Ser Asp Thr His Ser Trp Trp Asp Glu Lys Tyr Leu Gln Tyr Phe		
35	40	45
Glu Thr Cys Asp Glu Ile Trp His Ala Gly Asp Ile Gly Ser Val Glu		
50	55	60
Val Ala Gln Lys Leu Ala Ala Phe Arg Pro Phe Arg Ala Val Tyr Gly		
65	70	75
Asn Ile Asp Gly Gln Glu Ile Arg Arg Met Phe Pro Gln Val Asn Arg		
85	90	95
Phe Thr Val Asp Gly Ala Glu Val Leu Met Lys His Ile Gly Gly Tyr		
100	105	110
Pro Gly Asn Tyr Asp Pro Ser Ile Lys Gly Ser Leu Leu Val His Pro		
115	120	125
Pro Lys Leu Phe Ile Ser Gly His Ser His Ile Leu Lys Val Lys Tyr		
130	135	140
Asp Lys Thr Leu Asp Met Leu His Ile Asn Pro Gly Ala Ala Gly Met		
145	150	155
Ser Gly Phe His Lys Val Arg Thr Met Val Arg Phe Ala Ile Asp Asn		
165	170	175
Gly Val Phe Lys Asp Leu Glu Val Ile Glu Leu Ala Gly		
180	185	

<210> 7849
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7849

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Leu Leu Thr Ile Lys Asn Tyr Gln Thr Met Ala Val Pro Tyr Lys Lys
1      5      10      15
Ile Ala Arg Lys Asp Pro Arg Lys Thr Asp Ala Ile Glu Lys Phe Tyr
      20      25      30
Pro Gln Leu Val Thr Leu Gly Gln Ser Ala Ser Leu Glu Ser Ile Ala
      35      40      45
Tyr Glu Met Lys Glu Lys Ser Ser Leu Ser Ser Gly Asp Ile Lys Ser
      50      55      60
Val Leu Thr Asn Phe Val Glu Ala Met Arg Thr Ser Leu Tyr Asn Gly
      65      70      75      80
Gln Ser Val Asn Ile Arg Asp Phe Gly Val Phe Ser Leu Ser Ala Arg
      85      90      95
Thr Lys Gly Val Asp Thr Glu Lys Glu Cys Thr Ala Lys Asn Ile Met
      100     105     110
Ala Val Lys Ile Asn Phe Arg Pro Ser Ser Ser Val Arg Pro Asn Leu
      115     120     125
Thr Ser Thr Arg Ala Gly Asp Lys Ile Glu Phe Ile Asp Ile Lys Ala
      130     135     140
Ala Leu Glu Gly Lys Glu Ser Glu Lys Gly Gly Asp Gly Asp Ile Val
      145     150     155     160
Asp Asp Pro Thr Ala
      165

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<210> 7850
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 7850

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Phe Asn Tyr Met Gln Tyr Asn Thr Gln Gln Lys Arg Met Pro Leu Pro
1      5      10      15
Glu Tyr Gly Arg Ser Ile Gln Asn Met Val Asp Phe Ala Leu Thr Ile
      20      25      30
Gln Asp Arg Ser Glu Arg Gln Arg Cys Ala Asn Thr Ile Ile Asn Ile
      35      40      45
Met Gly Asn Met Phe Pro His Leu Arg Asp Val Pro Asp Phe Lys His
      50      55      60
Lys Leu Trp Asp His Leu Ala Ile Met Ala Asp Phe Lys Leu Asp Ile
      65      70      75      80
Asp Tyr Pro Tyr Glu Ile Ile Arg Lys Asp Asn Leu Val Thr Lys Pro
      85      90      95
Asp Pro Ile Pro Tyr Pro Ser Thr Lys Ile Arg Tyr Arg His Tyr Gly
      100     105     110
Arg Thr Leu Glu Ile Leu Ile Lys Lys Ala Cys Glu Phe Gln Glu Gly
      115     120     125
Asp Glu Lys Lys Asn Leu Val Ala Leu Ile Cys Asn His Met Lys Lys
      130     135     140
Asp Tyr Met Ala Trp Asn Lys Asp Thr Val Asp Asp Arg Lys Ile Ala
      145     150     155     160
Glu Asp Leu Ala Glu Phe Ser Gly Gly Lys Leu Gln Met Asp Asp Glu
      165     170     175
Ile Leu Arg Leu Met Ser Glu Arg Ile Ala Gln Asn Tyr Arg Pro Arg
      180     185     190

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Thr Asn Asn Asn Asn Asn Gln Arg Asn Asn Asn Gln Arg Arg Lys Phe
 195 200 205

<210> 7851

<211> 290

<212> PRT

<213> B.fragilis

<400> 7851

Tyr Ser Ile Ile Met Pro Lys Lys Lys Arg Ser Lys Ala Phe Trp Asn
 1 5 10 15
 Asn Ile Lys Phe Lys Tyr Lys Leu Thr Ile Ile Asn Glu Asn Thr Leu
 20 25 30
 Glu Glu Val Val Gly Leu His Val Ser Lys Leu Asn Gly Leu Ser Val
 35 40 45
 Leu Leu Ser Val Leu Thr Val Leu Phe Leu Phe Ala Ala Ala Ile Ile
 50 55 60
 Thr Phe Thr Pro Leu Arg Asn Tyr Leu Pro Gly Tyr Met Asn Ser Asp
 65 70 75 80
 Ile Arg Ala Gln Val Val Glu Asn Ala Leu Arg Val Asp Ser Leu Gln
 85 90 95
 Gln Leu Val Asp Arg Gln Asn Met Tyr Ile Met Asn Ile Gln Asp Ile
 100 105 110
 Phe Ser Gly Thr Val Arg Val Asp Thr Val Gln Ser Met Asp Ser Leu
 115 120 125
 Thr Thr Met Arg Glu Asp Ser Leu Ile Ala Arg Ser Glu Arg Glu Glu
 130 135 140
 Ala Phe Arg Arg Gln Tyr Glu Glu Thr Glu Lys Tyr Asn Leu Thr Ser
 145 150 155 160
 Ile Thr Ala Gln Pro Asp Val Asn Gly Leu Ile Phe Tyr Arg Pro Thr
 165 170 175
 Arg Gly Met Ile Ser Asp His Phe Asp Ala Glu Lys Lys His Phe Gly
 180 185 190
 Thr Asp Ile Ala Ala Asn Pro Asn Glu Ser Val Leu Ala Thr Leu Asp
 195 200 205
 Gly Thr Val Ile Leu Ser Thr Tyr Thr Ala Glu Thr Gly Tyr Leu Ile
 210 215 220
 Glu Val Gln His Asn Gln Asp Phe Val Ser Val Tyr Lys His Cys Gly
 225 230 235 240
 Ser Leu Leu Lys Arg Glu Gly Asp Thr Val Lys Gly Gly Glu Ala Ile
 245 250 255
 Ala Leu Val Gly Asn Ser Gly Thr Leu Thr Thr Gly Pro His Leu His
 260 265 270
 Phe Glu Leu Trp His Arg Gly Arg Pro Val Asn Pro Glu Lys Tyr Ile
 275 280 285
 Val Phe
 290

<210> 7852

<211> 185

<212> PRT

<213> B.fragilis

<400> 7852

Thr Lys Ile Met Ser Gln Leu Asn Asp Ile Ser Leu Val Ala Gln Val
 1 5 10 15
 Val Val Phe Arg Asn Thr Arg Ala Phe Asp Gln Leu Val Gln Lys Tyr
 20 25 30
 Gln Ser Pro Val Arg Arg Phe Phe Leu Asn Leu Thr Cys Gly Asp Ser

```

      35              40              45
Glu Leu Ser Asp Asp Leu Ala Gln Asp Thr Phe Ile Lys Ala Tyr Thr
 50              55              60
Asn Ile Ala Asn Phe Lys Asn Leu Ser Ser Phe Ser Thr Trp Leu Tyr
65              70              75              80
Arg Ile Ala Tyr Asn Val Phe Tyr Asp Tyr Ile Arg Ser Arg Lys Glu
      85              90              95
Thr Thr Asp Leu Asp Ala Arg Glu Val Asp Ala Ala Asn Ser Thr Glu
      100              105              110
Gln Val Asn Val Gly Glu Gln Met Asp Val Tyr Gln Ser Leu Arg Thr
      115              120              125
Leu Lys Glu Ile Glu Arg Thr Cys Ile Thr Leu Phe Tyr Met Glu Asp
      130              135              140
Val Ser Ile Asp Lys Ile Ala Gly Ile Thr Gly Cys Pro Val Gly Thr
145              150              155              160
Val Lys Ser His Leu Ser Arg Ala Lys Asp Lys Leu Ala Ile Tyr Leu
      165              170              175
Lys Gln Asn Gly Tyr Asp Gly Asn Arg
      180              185

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<210> 7853

<211> 341

<212> PRT

<213> B.fragilis

<400> 7853

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Ile Tyr Lys Ile Val Met Lys Ile Tyr Leu Val Cys Gln Thr Trp Ser
1              5              10              15
Asn Thr Lys Asn Asn His Ala Gly Ile Leu Tyr Leu Cys Asn Gln Leu
      20              25              30
Ala Ala Ile Asn Pro Asp Ile Gln Val Ile Ala Met Pro Glu Phe Lys
      35              40              45
Ser Ile Gly Arg Phe Phe Leu Tyr His Ile Trp His Leu Tyr Tyr Ala
50              55              60
Phe Tyr Leu Tyr Leu Ser Thr Lys Asp Gly Asp Cys Val Ile Leu Met
65              70              75              80
Glu Tyr Leu Leu Ser Lys Ser Leu Asp Gln Ser Leu Ile Ala Ser Phe
      85              90              95
Leu Lys Arg Thr Lys Pro Asn Val Arg Ile Ile Ala Leu Pro His Leu
      100              105              110
Val Ser Lys Leu Ile Lys Lys His Phe Ser Glu Lys Glu Ile Val Asp
      115              120              125
Arg Ile Ser Lys Val Asp Ser Val Trp Val Leu Gly Ser Ser Leu Lys
      130              135              140
Thr Phe Leu Cys Ser Leu Gly Val Pro Asn Asp Lys Ile Arg Val Ile
145              150              155              160
Phe His Tyr Val Asp Thr Glu Tyr Tyr Lys Gly Glu Val Cys Lys Val
      165              170              175
Pro Asn Phe Arg Leu Arg Val Val Val Met Gly Asn Met Gln Arg Asp
      180              185              190
Tyr Asp Leu Leu Phe Glu Val Ile Ser Ala Leu Pro Leu Ile Asp Phe
      195              200              205
Asp Val Cys Ala Gly Val Ser Lys Ala Thr Glu Asn Leu Thr Ser Leu
      210              215              220
Lys Asn Val Thr Leu His Ser Tyr Met Ser Glu Asp Thr Leu Arg Gly
225              230              235              240
Ile Met Asn Lys Ala Asp Val Ser Leu Asn Ile Met Lys Asp Thr Ile
      245              250              255
Gly Ser Asn Val Ile Val Thr Ser Met Ala Met Gly Leu Ala Met Val

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Val	Ser	Asp	Val	Gly	Ser	Ile	Arg	Asp	Tyr	Val	Asp	Glu	Ser	Asn	Gly
		275					280					285			
Leu	Phe	Cys	Leu	Thr	Ser	Lys	Asp	Phe	Ile	Ile	Ala	Leu	Ser	Arg	Leu
	290					295					300				
Glu	Ala	Asp	Arg	Asp	Met	Val	Lys	Arg	Met	Gln	Leu	Lys	Ser	Val	Ser
305					310					315					320
Lys	Ala	Gln	Gly	Met	Asn	Val	Ser	Glu	Phe	Tyr	Arg	Trp	Phe	Arg	Thr
				325					330					335	
Met	Val	Tyr	Glu	Ser											
			340												

<210> 7854

<211> 301

<212> PRT

<213> B.fragilis

<400> 7854

Lys	Lys	Lys	Met	Glu	Glu	Val	Lys	Arg	Asn	Ser	Leu	Gln	Ala	Trp	Ile
1			5						10					15	
Leu	Ala	Ala	Arg	Pro	Lys	Thr	Leu	Ala	Gly	Ala	Ile	Thr	Pro	Val	Met
			20					25					30		
Ile	Gly	Cys	Ala	Leu	Ala	Phe	Ala	Asp	Gly	Lys	Phe	Asn	Trp	Ile	Pro
		35					40					45			
Ala	Leu	Ile	Cys	Cys	Leu	Phe	Ala	Gly	Leu	Met	Gln	Val	Ala	Ala	Asn
	50					55					60				
Phe	Ile	Asn	Asp	Leu	Phe	Asp	Phe	Leu	Lys	Gly	Thr	Asp	Arg	Glu	Asp
65					70					75					80
Arg	Leu	Gly	Pro	Glu	Arg	Ala	Cys	Ala	Gln	Gly	Trp	Ile	Ser	Ala	Ala
				85					90					95	
Ala	Met	Lys	Gln	Gly	Ile	Phe	Ile	Thr	Val	Gly	Leu	Ala	Cys	Leu	Ile
			100					105					110		
Gly	Cys	Thr	Leu	Leu	Phe	Tyr	Ala	Gly	Trp	Glu	Leu	Ile	Leu	Ile	Gly
		115					120					125			
Ala	Leu	Cys	Val	Leu	Phe	Ala	Phe	Leu	Tyr	Thr	Thr	Gly	Pro	Tyr	Pro
	130					135						140			
Leu	Ser	Tyr	Lys	Gly	Trp	Gly	Asp	Val	Leu	Val	Ile	Val	Phe	Phe	Gly
145					150					155					160
Phe	Val	Pro	Val	Gly	Thr	Tyr	Tyr	Val	Gln	Ala	Leu	Asn	Trp	Thr	
				165				170					175		
Pro	Asn	Val	Thr	Val	Ala	Ser	Leu	Val	Cys	Gly	Leu	Ile	Val	Asp	Thr
			180					185					190		
Leu	Leu	Val	Val	Asn	Asn	Tyr	Arg	Asp	Arg	Asp	Ala	Asp	Arg	Lys	Ser
		195					200					205			
Gly	Lys	Lys	Thr	Val	Val	Val	Arg	Phe	Gly	Glu	Ser	Phe	Gly	Arg	Tyr
	210					215					220				
Phe	Tyr	Leu	Leu	Leu	Gly	Ile	Thr	Ala	Ala	Trp	Leu	Cys	Phe	Trp	Phe
225					230					235					240
Leu	Phe	Asn	Gly	His	Leu	Tyr	Ala	Thr	Leu	Leu	Pro	Gln	Leu	Tyr	Leu
				245					250					255	
Phe	Phe	His	Ile	Arg	Thr	Trp	Lys	Lys	Met	Val	Gln	Ile	His	Ser	Gly
		260						265				270			
Lys	Lys	Leu	Asn	Ser	Ile	Leu	Gly	Glu	Thr	Ser	Arg	Asn	Met	Leu	Leu
		275					280					285			
Met	Gly	Ile	Leu	Leu	Ser	Ile	Gly	Leu	Val	Ile	Asn	Gly			
	290					295					300				

<210> 7855

<211> 240

<212> PRT

<213> B.fragilis

<400> 7855

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Leu Ser Pro Ile Ile Glu Lys Ile Lys Ile Cys Gly His Leu Leu Leu
1           5           10           15
Asp Lys His Ser Gly Leu His Thr Met Lys Asn Lys Arg Tyr Ser Arg
          20           25           30
Gly Glu Glu Leu Ser Asn Thr Leu Ser His Gly Ala Gly Thr Leu Leu
          35           40           45
Gly Ile Thr Ala Gly Tyr Phe Leu Leu Glu Lys Ala Leu Ala Asn Pro
          50           55           60
His Pro Tyr Trp Ala Thr Gly Cys Val Leu Ala Tyr Leu Val Gly Met
65           70           75           80
Leu Ala Ser Tyr Ile Ser Ser Thr Trp Tyr His Gly Ser Arg Pro Gly
          85           90           95
Lys Arg Lys Glu Leu Leu Arg Lys Phe Asp His Gly Ala Ile Tyr Leu
          100          105          110
His Ile Ala Gly Thr Tyr Thr Pro Phe Thr Leu Leu Val Leu Arg His
          115          120          125
Ala Gly Gly Trp Gly Trp Gly Ile Phe Thr Phe Val Trp Leu Ser Ala
          130          135          140
Ile Val Gly Phe Ile Leu Ala Phe Lys Lys Leu Lys Glu His Ser Asn
145          150          155          160
Leu Glu Thr Ile Cys Phe Val Gly Met Gly Ser Ala Ile Leu Val Ala
          165          170          175
Leu Lys Pro Leu Met Asp Cys Leu Ser Ala Ile Gly Ala Ser Pro Ala
          180          185          190
Phe Trp Trp Leu Leu Gly Gly Gly Ala Ser Tyr Ile Met Gly Ala Val
          195          200          205
Phe Tyr Ser Leu Arg Lys Pro Tyr Met His Ala Val Phe His Leu Phe
          210          215          220
Cys Leu Gly Gly Ser Ile Gly His Ile Ile Ala Ile Trp Leu Ile Leu
225          230          235          240

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<210> 7856

<211> 368

<212> PRT

<213> B.fragilis

<400> 7856

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Ile Pro Phe Val Leu Asn Ile Leu Phe Ile Ile Leu Ala Phe Val Ile
1           5           10           15
Ser Ala Ser Val Ala Arg Leu Ile Ile Pro Arg Ile Leu Leu Ile Ser
          20           25           30
Leu Arg Lys Lys Leu Phe Asp Met Pro Ser Glu Arg Lys Val His Lys
          35           40           45
Arg Ala Ile Pro Arg Leu Gly Gly Val Ser Phe Phe Pro Thr Ile Leu
          50           55           60
Leu Ser Ser Cys Gly Val Phe Ala Leu Arg Ile Leu Met Gly Tyr Asp
65           70           75           80
Val Pro Ala Leu Arg Ala Val Tyr Leu Leu Pro Glu Cys Leu Phe Leu
          85           90           95
Val Cys Gly Met Thr Leu Leu Tyr Leu Thr Gly Ile Ala Asp Asp Leu
          100          105          110
Val Gly Val Arg Tyr Arg Gln Lys Phe Val Ile Gln Ile Ile Cys Ala
          115          120          125
Ser Phe Phe Pro Leu Ala Gly Leu Trp Ile Asn Asn Phe Tyr Gly Leu
          130          135          140

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Phe Gly Leu Tyr Ala Leu Pro Ala Trp Ile Gly Met Pro Phe Thr Val
 145 150 155 160
 Leu Leu Val Val Phe Val Thr Asn Ala Ile Asn Leu Ile Asp Gly Ile
 165 170 175
 Asp Gly Leu Ala Ser Gly Leu Ser Ser Val Ala Leu Leu Val Phe Gly
 180 185 190
 Phe Leu Phe Met Gln Lys Glu Leu Trp Thr Tyr Ser Met Leu Ala Phe
 195 200 205
 Ala Thr Phe Gly Val Leu Val Pro Phe Phe Tyr Tyr Asn Val Phe Gly
 210 215 220
 Ser Ala Glu Arg Ala Arg Lys Ile Phe Met Gly Asp Thr Gly Ser Leu
 225 230 235 240
 Thr Leu Gly Tyr Val Leu Ser Phe Leu Ala Ile Lys Tyr Ser Gln Tyr
 245 250 255
 Asn Leu Asp Val Thr Pro Tyr Thr Glu Gly Ala Phe Val Ile Ala Phe
 260 265 270
 Ser Thr Leu Ile Val Pro Ala Phe Asp Val Ile Arg Val Val Met Val
 275 280 285
 Arg Val Arg Ser Gly Lys Ser Pro Phe Glu Pro Asp Lys Asn His Ile
 290 295 300
 His His Lys Phe Leu Ala Met Gly Phe Thr Pro Arg Lys Ala Met Ile
 305 310 315 320
 Thr Ile Leu Leu Ile Ser Cys Ala Phe Ser Ala Val Asn Ile Leu Phe
 325 330 335
 Met Pro Tyr Val Asn Asn Thr Ile Met Leu Ile Gly Asp Ile Thr Val
 340 345 350
 Trp Val Gly Leu Asn Leu Trp Trp Asp Arg Ile Arg Asp Asn Lys Cys
 355 360 365

<210> 7857

<211> 143

<212> PRT

<213> B.fragilis

<400> 7857

Ala Asn Ile Val Trp Gln Tyr Leu Tyr Ile Gln Glu Ile Ile Gly Thr
 1 5 10 15
 Phe Ala Thr Glu Ile Arg Arg Arg Ala Val Met Lys Thr Val Asn Gln
 20 25 30
 Ile Ile Gly Glu Asn Leu Lys Lys Ile Arg Glu Leu Ser Gly Phe Thr
 35 40 45
 Gln Glu Gln Val Ala Gln Ser Ile Lys Ile Glu Arg Ser Thr Tyr Ser
 50 55 60
 Asn Tyr Glu Gly Gly Thr Arg Glu Ile Pro Tyr Thr Ile Leu Glu Asp
 65 70 75 80
 Ile Ser Asn Leu Phe Gly Cys Glu Pro Phe Ile Leu Phe Glu Asp Asn
 85 90 95
 Ile Gln Thr Asn Asn Glu Ile Met Ala Thr Ala Phe Arg Ile Ser Asn
 100 105 110
 Leu Gly Glu Asn Asp Leu Lys Glu Ile Ala Ala Phe Lys Asp Ile Val
 115 120 125
 Lys Ser Tyr Leu Lys Met Glu Arg Ile Ala Gln Asn Glu Ala Glu
 130 135 140

<210> 7858

<211> 775

<212> PRT

<213> B.fragilis

<400> 7858

Asn	Ile	Ser	Val	Thr	Cys	Met	Thr	Phe	Leu	Cys	Asn	Thr	Lys	Ile	Arg
1			5						10					15	
Pro	Leu	Gln	Ser	Glu	Ile	Thr	Tyr	Thr	Phe	Met	Glu	Thr	Ile	Tyr	Leu
			20					25					30		
Cys	Ile	Ile	Ile	Phe	Leu	Phe	Val	Leu	Ala	Val	Phe	Asp	Leu	Met	Val
			35				40					45			
Gly	Val	Ser	Asn	Asp	Ala	Val	Asn	Phe	Leu	Asn	Ser	Ala	Val	Gly	Ala
	50					55					60				
Lys	Ala	Ala	Ser	Phe	Lys	Thr	Ile	Leu	Phe	Ile	Ala	Gly	Ala	Gly	Ile
65					70					75					80
Phe	Ile	Gly	Ala	Ser	Leu	Ser	Asn	Gly	Met	Met	Asp	Ile	Ala	Arg	His
				85					90					95	
Gly	Ile	Tyr	Gln	Pro	Glu	His	Phe	Tyr	Phe	Ala	Glu	Ile	Met	Cys	Ile
			100					105					110		
Leu	Leu	Ala	Val	Met	Leu	Thr	Asp	Val	Val	Leu	Leu	Asp	Val	Phe	Asn
		115					120					125			
Ser	Met	Gly	Met	Pro	Thr	Ser	Thr	Thr	Val	Ser	Met	Val	Phe	Glu	Leu
	130					135					140				
Leu	Gly	Gly	Thr	Phe	Ala	Leu	Ala	Leu	Ile	Lys	Val	His	Asn	Ser	Asp
145					150					155					160
Thr	Leu	Gly	Leu	Gly	Asp	Leu	Ile	Asn	Thr	Asp	Lys	Ala	Leu	Ser	Val
				165					170					175	
Ile	Met	Ala	Ile	Phe	Val	Ser	Val	Ala	Ile	Ala	Phe	Phe	Phe	Gly	Met
			180					185					190		
Leu	Val	Gln	Trp	Leu	Ala	Arg	Met	Val	Phe	Thr	Phe	Asn	Tyr	Lys	Ser
		195					200					205			
Asn	Ile	Lys	Tyr	Ser	Ile	Ala	Leu	Phe	Gly	Gly	Ile	Ala	Ser	Thr	Ala
	210					215					220				
Ile	Val	Tyr	Phe	Met	Val	Ile	Lys	Gly	Leu	Lys	Asp	Ser	Ser	Phe	Met
225					230					235					240
Thr	Pro	Glu	Asn	Lys	Gln	Trp	Val	Gln	Glu	Asn	Thr	Met	Met	Leu	Val
				245					250					255	
Ser	Cys	Phe	Phe	Val	Ile	Ser	Thr	Ile	Leu	Met	Gln	Ile	Leu	His	Trp
			260					265					270		
Leu	Lys	Val	Asn	Val	Phe	Lys	Val	Val	Val	Leu	Leu	Gly	Thr	Phe	Ala
	275						280					285			
Leu	Ala	Leu	Ala	Phe	Ala	Gly	Asn	Asp	Leu	Val	Asn	Phe	Ile	Gly	Val
	290					295					300				
Pro	Leu	Ala	Gly	Tyr	Ser	Phe	Ile	Asp	Tyr	Thr	Ala	Asn	Gly	Thr	
305					310				315					320	
Ser	Val	Gly	Pro	Asp	Gly	Phe	Leu	Met	Thr	Ser	Leu	Met	Gly	Ser	Ala
				325					330					335	
Lys	Thr	Pro	Trp	Tyr	Phe	Leu	Ile	Gly	Ala	Gly	Ala	Val	Met	Val	Tyr
			340					345					350		
Ala	Leu	Cys	Thr	Ser	Lys	Lys	Ala	His	Ala	Val	Ile	Lys	Thr	Ser	Val
	355						360					365			
Asp	Leu	Ser	Arg	Gln	Asp	Glu	Gly	Glu	Glu	Asn	Phe	Gly	Ser	Thr	Pro
	370					375					380				
Ile	Ala	Arg	Thr	Leu	Val	Arg	Phe	Ser	Leu	Thr	Leu	Ala	Asn	Gly	Ile
385					390					395					400
Ser	Arg	Ile	Thr	Pro	Pro	Ser	Ala	Lys	Arg	Trp	Ile	Asp	Thr	Arg	Phe
				405					410					415	
Arg	Lys	Asp	Glu	Ala	Ile	Ile	Ala	Asp	Gly	Ala	Ala	Phe	Asp	Leu	Val
			420					425					430		
Arg	Ala	Ser	Val	Asn	Leu	Val	Leu	Ala	Gly	Leu	Leu	Ile	Ala	Val	Gly
			435				440					445			
Thr	Ser	Leu	Lys	Leu	Pro	Leu	Ser	Thr	Thr	Tyr	Val	Thr	Phe	Met	Val
	450					455					460				

Ala Met Gly Thr Ser Leu Ala Asp Arg Ala Trp Gly Arg Asp Ser Ala
 465 470 475 480
 Val Tyr Arg Ile Thr Gly Val Leu Ser Val Ile Gly Gly Trp Phe Ile
 485 490 495
 Thr Ala Gly Ala Ala Phe Thr Ile Cys Phe Phe Val Ala Met Val Ile
 500 505 510
 His Phe Gly Gly Ser Ile Ala Ile Ile Ala Leu Ile Gly Leu Ala Ala
 515 520 525
 Phe Thr Leu Ile Arg Ser Gln Leu Met Tyr Lys Lys Lys Lys Glu Lys
 530 535 540
 Glu Lys Gly Asn Glu Thr Leu Lys Gln Leu Met Gln Ala Thr Ser Ser
 545 550 555 560
 His Glu Ala Leu Glu Leu Met Arg Lys His Thr Arg Glu Glu Leu Ser
 565 570 575
 Lys Val Leu Glu Tyr Ala Glu Gln Asn Phe Glu Leu Thr Val Thr Ser
 580 585 590
 Phe Leu His Glu Asn Leu Arg Gly Leu Arg Arg Ala Met Gly Ser Thr
 595 600 605
 Lys Phe Glu Lys Gln Leu Ile Lys Gln Met Lys Arg Thr Gly Thr Val
 610 615 620
 Ala Met Cys Lys Leu Asp Asn His Thr Val Leu Glu Lys Gly Leu Tyr
 625 630 635 640
 Tyr Tyr Gln Gly Asn Asp Phe Ala Ser Glu Leu Val Tyr Ser Ile Ser
 645 650 655
 Arg Leu Cys Glu Pro Cys Leu Glu His Ile Asp Asn Asn Phe Asn Pro
 660 665 670
 Leu Asp Ala Ile Gln Lys Gly Glu Phe Gly Asp Val Ala Glu Asp Ile
 675 680 685
 Thr Tyr Leu Ile Gln Gln Cys Arg Gln Lys Leu Glu Gly Asn Asn Tyr
 690 695 700
 Ser Asn Leu Glu Glu Asp Leu His Arg Ala Asn Asp Leu Asn Ser Gln
 705 710 715 720
 Leu Ser His Leu Lys Arg Gln Glu Leu Gln Arg Ile Gln Ser Gln Thr
 725 730 735
 Gly Ser Ile Lys Val Ser Met Val Tyr Leu Thr Met Ile Gln Glu Ala
 740 745 750
 Gln Asn Val Val Thr Tyr Thr Ile Asn Leu Met Lys Val Ser Arg Lys
 755 760 765
 Phe Gln Ile Glu Thr Asp Ile
 770 775

<210> 7859

<211> 297

<212> PRT

<213> B.fragilis

<400> 7859

Cys Val Asp Val Leu Met Asn Glu Leu Glu Asp Ile Tyr Lys Arg Ile
 1 5 10 15
 Glu Tyr Leu Arg Asn Asn Gly Val Lys Met Lys Glu Ile Ala Asp Trp
 20 25 30
 Ile His Met Ala Pro Ser Val Leu Ser Ala Leu Tyr Ser Ser Val Leu
 35 40 45
 Pro Thr Tyr Leu Asn Leu Gln Lys Thr Lys Pro Arg Glu Glu Ala Leu
 50 55 60
 Asp Glu Ala Leu Ala Leu Val Asn Asn Val Ser Lys Lys Arg Leu Leu
 65 70 75 80
 Gly Asn Leu Gly Glu Met Lys Glu Arg Leu Phe Asp Leu Glu Pro Asn
 85 90 95

Gln Glu Ala Asn Ile Thr Gly Asn Ala Phe Leu Lys Leu Leu Glu Lys
 100 105 110
 Glu Met Gln Glu Ser Val Gly Glu Val Tyr Asn Tyr Ser Gly Thr Tyr
 115 120 125
 Leu Ser Tyr Ser Leu Ser Ser Ser Thr Asp Ser Leu Lys Ala Glu Pro
 130 135 140
 Tyr Leu Ile Cys Ala Ser Glu Asn Asn Asp Tyr Val Lys Val Gly Met
 145 150 155 160
 Ile Asn Ala Tyr Lys Ser Val His Trp Gly Ser Gly Ile Ile Ser Asn
 165 170 175
 His Gln Asn Ser Tyr Leu Met Phe Asn Glu Arg Glu Leu Pro Gln Phe
 180 185 190
 Ala Leu Val Thr Ile Tyr Leu Gln Leu Pro His Tyr Glu Phe Pro His
 195 200 205
 Met Leu Lys Gly Leu Tyr Leu Cys Leu Asp Tyr Asn His Asn Pro Ile
 210 215 220
 Ala Arg Arg Ile Val Leu Val Lys Gln Ser Asp Ser Thr Asp Ile Asp
 225 230 235 240
 Glu Phe Leu Lys Met Glu Gly Lys Leu Ile Ser Arg Ser Glu Leu Thr
 245 250 255
 Pro Glu Glu Glu Ile Tyr Tyr Asn Tyr Thr Cys Gln Glu Gly Asp Tyr
 260 265 270
 Ile Lys Thr Cys Thr Val Pro Ser Pro Lys Leu Asn Glu Ser Asp Leu
 275 280 285
 Glu Arg Glu Lys Lys Met Leu Lys Ile
 290 295

<210> 7860

<211> 304

<212> PRT

<213> B.fragilis

<400> 7860

Asn Tyr Pro Val Phe Leu His Lys Thr Phe Gly Asn Met Ile Gln Ser
 1 5 10 15
 Met Thr Gly Tyr Gly Lys Ala Thr Ala Glu Leu Pro Asp Lys Lys Ile
 20 25 30
 Asn Val Glu Ile Lys Ser Leu Asn Ser Lys Ala Met Asp Leu Ser Ala
 35 40 45
 Arg Ile Ala Pro Ala Tyr Arg Glu Lys Glu Met Glu Ile Arg Asn Glu
 50 55 60
 Ile Ala Arg Val Leu Glu Arg Gly Lys Val Asp Phe Ser Leu Trp Val
 65 70 75 80
 Glu Lys Lys Glu Cys Ala Asp Ala Ala Thr Pro Ile Asn Gln Val Leu
 85 90 95
 Val Glu Gly Tyr Tyr Asn Gln Ile Lys Ala Ile Ser Glu Asn Leu His
 100 105 110
 Ile Ala Val Pro Thr Asp Trp Phe Gln Thr Leu Leu Arg Met Pro Asp
 115 120 125
 Val Met Thr Arg Thr Glu Thr Gln Glu Leu Ser Glu Glu Glu Trp Gly
 130 135 140
 Ile Val Tyr Ala Ala Val Lys Glu Ala Val Ser His Leu Val Asp Phe
 145 150 155 160
 Arg Lys Gln Glu Gly Ala Ala Leu Glu Lys Lys Phe Arg Glu Lys Ile
 165 170 175
 Ala Asn Ile His Arg Leu Leu Glu Ser Val Thr Pro Tyr Glu Lys Glu
 180 185 190
 Arg Val Asp Lys Val Lys Glu Arg Ile Thr Asp Ala Leu Glu Lys Thr
 195 200 205

Val Lys Asp Val Glu Thr Leu Val Ser Ala Met Glu Lys Ile Ile Leu
 325 330 335
 Met Ser Met Glu Gln Arg Val Thr Met Gly Glu Ala Gly Arg Val Lys
 340 345 350
 Met Gln Cys Glu Phe Asp Ile Lys Leu Val Thr Glu Arg Tyr Ile Asn
 355 360 365
 Thr Leu His Tyr Tyr Leu Gly Phe
 370 375

<210> 7862
 <211> 125
 <212> PRT
 <213> B.fragilis

<400> 7862
 Tyr Thr Lys Val Met Glu Leu Gln Ile Ile Gln Ser Lys Ile Tyr Gly
 1 5 10 15
 Ile Arg Gly Gln Lys Val Met Leu Asp Phe Asp Leu Ala Gly Leu Tyr
 20 25 30
 Gln Val Glu Thr Arg Val Leu Asn Gln Ala Val Lys Arg Asn Ser Lys
 35 40 45
 Gln Phe Pro Thr Asp Leu Met Phe Gln Leu Asn Thr Glu Glu Trp Glu
 50 55 60
 Ile Leu Lys Ser Gln Ile Val Ile Ser Ser Trp Gly Gly Thr Arg Lys
 65 70 75 80
 Leu Pro Phe Ala Phe Thr Glu Gln Gly Leu Ala Met Leu Ser Gly Val
 85 90 95
 Leu Asn Ser Asp Arg His Arg Ser Glu Tyr Phe His Tyr Ala Ser Phe
 100 105 110
 Cys Ser Cys Pro Pro Ile Gly Leu Gly Ser Ser Gly Glu
 115 120 125

<210> 7863
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 7863
 Asn Lys Thr Val Met Thr Glu Thr Asp Asp Lys Leu Leu Lys Gln Phe
 1 5 10 15
 Phe Gly Glu Gln Lys Gln Glu Ile Glu Asp Asn Gly Phe Ser Arg Arg
 20 25 30
 Val Met Arg Asn Leu Pro Gly Arg Asn His Arg Leu Val Gln Ala Trp
 35 40 45
 Gly Ala Ala Cys Ala Val Val Cys Val Ile Leu Phe Phe Thr Leu Gly
 50 55 60
 Gly Leu Gln Ala Thr Ile Ser Thr Leu Arg Glu Val Phe Val Ser Met
 65 70 75 80
 Val Gln Gln Ser Ala Thr Thr Gly Phe Asp Pro Lys Ser Leu Tyr Ile
 85 90 95
 Ala Ala Leu Val Leu Ala Phe Phe Gly Ala Arg Lys Ala Trp Ser Met
 100 105 110
 Ala

<210> 7864
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7864

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Ile Leu Thr Thr Ser Val Ser Phe Leu Phe Val Thr Phe Leu Tyr Met
1          5          10          15
Trp Gln Ala Lys Phe Ala Lys Leu Ser Asp Leu Thr Lys Ser Phe Leu
          20          25          30
Ile Tyr Leu Trp Gly Phe Val Lys Arg Glu Leu Phe Tyr Cys Asn Phe
          35          40          45
Val Leu Trp Ser Lys Gln Ile Val Tyr Ile Leu Phe Arg Tyr Gly Leu
          50          55          60

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<210> 7865

<211> 151

<212> PRT

<213> B.fragilis

<400> 7865

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Gly Thr Asp Tyr Ala Pro Ser Gly Gln Phe Glu Lys Met Phe Asn Thr
1          5          10          15
Asp Leu Gly Ala Gly Val Gly Thr Gly Val Ala Gln Ile Ala Gly Gly
          20          25          30
Gln Ala Asp Gly Tyr Asn Phe Phe Pro Gln Gln Asp Leu Ser Ser Pro
          35          40          45
Thr Thr Lys Glu Asp Val Met Lys Lys Ser Ile His Val Ile Met Glu
          50          55          60
Val Glu Phe Asp Lys Lys Val Gly Gly Ser Gly Pro Glu Thr Gly Trp
          65          70          75          80
Leu Asn Val Val Ala Leu Lys Asp Asn Thr Ala Thr Asn Tyr Ile Thr
          85          90          95
Asp Phe Glu Ala Gly Lys Val Tyr Phe Ile Asn Leu Ala Asp Ile Lys
          100          105          110
Asp Ile Met Asp Val Pro Val Pro Pro Val Thr Pro Asp Pro Asp Pro
          115          120          125
Glu Thr Val Ser Val Asp Leu Thr Val Ser Ile Gly Gln Trp Thr Val
          130          135          140
Val Gln Val Lys Pro Glu Val
          145          150

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<210> 7866

<211> 206

<212> PRT

<213> B.fragilis

<400> 7866

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Ile Phe Ile Lys Met Arg Ile Thr Lys Ser Ile Leu Ala Leu Met Ala
1          5          10          15
Ala Thr Met Thr Phe Ala Ala Cys Ser Asn Asp Glu Lys Ile Thr Glu
          20          25          30
Ser Thr Pro Lys Thr Val Ala Leu Thr Val Lys Leu Pro Glu Phe Gly
          35          40          45
Gly Ala Ser Ser Arg Ala Ile Asp Pro Glu Thr Thr Thr Gly Asn Lys
          50          55          60
Val Thr Ile Asn Gly Pro Val Lys Ile Ile Ala Arg Val Ser Gln Gly
          65          70          75          80
Gly Ala Ile Thr Asn Thr Ile Ser Glu Asn Ile Thr Ala Gly Ser Met
          85          90          95
Ser Thr Ile Thr Val Ser Gly Ala Ala Gln Trp Ile Glu Val Glu Ala
          100          105          110
Asn Gly Asp Asn Ser Thr Glu Thr Asp Asn Val Asn Thr Arg Gln Gly

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115	120	125
Ser Ala Thr Ser Ser Lys Val Arg Leu Phe Gly Gly Ala Thr Ile Asn		
130	135	140
Pro Gly Ser Gly Gly Asn Ala Thr Cys Thr Pro Thr Ile Asn Pro Asp		
145	150	155
Met Ala Arg Val Glu Val Lys Gly Ser Leu Ala Gly Pro Trp Thr His		
165	170	175
Leu Asn Asp Leu Lys Ile Lys Gly Ile Tyr Ile Asn Asn Val Lys Leu		
180	185	190
Thr Arg Gly Ala Ser Ser Leu Thr Arg Ile Val Ser Ala Ala		
195	200	205

<210> 7867

<211> 267

<212> PRT

<213> B.fragilis

<400> 7867

Cys Met Thr Lys Arg Thr Cys Gln Phe Pro Lys His Thr Cys Leu Arg		
1	5	10
Glu Ile Asn Phe Leu Lys Ile Ala Gly Ile Ser Leu Leu Phe Cys		
20	25	30
Thr Thr Ser Gln Ile Ala Val Ala Asp Ser Tyr Glu Lys Asn Ala Val		
35	40	45
Thr Ala Thr Gln Gln Ser Lys Thr Glu Lys Ile Thr Gly Lys Ile Val		
50	55	60
Asp Glu Ser Gly Glu Ala Ile Ile Gly Ala Ser Val Lys Val Gln Gly		
65	70	75
Ser Thr Ile Gly Thr Ile Thr Asn Met Glu Gly Glu Phe Met Ile Pro		
85	90	95
Asn Val Pro Asn Lys Ala Val Leu Glu Ile Ser Tyr Ile Gly Tyr Lys		
100	105	110
Pro Leu Glu Val Ala Val Gly Lys Ser Lys Asp Leu Arg Ile Thr Met		
115	120	125
Glu Glu Asp Thr Lys Thr Leu Asp Glu Val Ile Val Val Gly Tyr Gly		
130	135	140
Thr Thr Ser Lys Arg Lys Thr Thr Ala Ala Ile Ala Ser Val Asn Thr		
145	150	155
Glu Asp Ile Ile Lys Ala Pro Thr Ala Asn Ile Thr Gln Ser Leu Ala		
165	170	175
Gly Arg Ala Pro Gly Leu Leu Val Thr Thr Ser Gly Gly Gly Leu Asn		
180	185	190
Asn Phe Ser Ser Val Ser Ile Arg Gly Gly Gly Thr Pro Leu Tyr Val		
195	200	205
Ile Asp Asp Val Ile Ser Glu Glu Arg Asp Phe Arg Asn Leu Asn Ala		
210	215	220
Glu Asp Ile Asp Gln Ile Thr Ile Leu Lys Asp Ala Ala Ser Thr Ala		
225	230	235
Val Tyr Gly Ala Arg Ala Ala Asn Gly Ile Val Met Ile Val Thr Lys		
245	250	255
Gln Gly Gln Ser Arg Glu Asn Glu Arg Gln Leu		
260	265	

<210> 7868

<211> 540

<212> PRT

<213> B.fragilis

<400> 7868

Leu	Ile	Gln	Lys	Lys	Met	Ala	Asn	Leu	Asp	Leu	Ser	Lys	Tyr	Gly	Ile
1				5					10					15	
Thr	Gly	Val	Thr	Glu	Ile	Leu	His	Asn	Pro	Ser	Tyr	Asp	Val	Leu	Phe
			20					25					30		
Ala	Glu	Glu	Thr	Lys	Pro	Gly	Leu	Glu	Gly	Phe	Glu	Lys	Gly	Gln	Val
		35				40						45			
Thr	Glu	Leu	Gly	Ala	Val	Asn	Val	Met	Thr	Gly	Val	Tyr	Thr	Gly	Arg
	50					55					60				
Ser	Pro	Lys	Asp	Lys	Phe	Phe	Val	Lys	Asn	Glu	Ala	Ser	Glu	Asn	Ser
65				70						75				80	
Val	Trp	Trp	Thr	Ser	Glu	Glu	Tyr	Lys	Asn	Asp	Asn	Lys	Pro	Cys	Ser
			85					90						95	
Glu	Glu	Ala	Trp	Ala	Asp	Leu	Lys	Ala	Lys	Ala	Val	Lys	Glu	Leu	Ser
			100					105					110		
Asn	Lys	Arg	Leu	Phe	Val	Val	Asp	Thr	Phe	Cys	Gly	Ala	Asn	Glu	Gly
		115					120					125			
Thr	Arg	Met	Lys	Val	Arg	Phe	Ile	Met	Glu	Val	Ala	Trp	Gln	Ala	His
	130					135					140				
Phe	Val	Thr	Asn	Met	Phe	Ile	Arg	Pro	Thr	Ala	Glu	Glu	Leu	Ala	Asn
145				150						155				160	
Tyr	Gly	Glu	Pro	Asp	Phe	Val	Cys	Phe	Asn	Ala	Ser	Lys	Ala	Lys	Val
			165					170						175	
Asp	Asn	Tyr	Lys	Glu	Leu	Gly	Leu	Asn	Ser	Glu	Thr	Ala	Thr	Val	Phe
			180					185					190		
Asn	Leu	Lys	Thr	Lys	Glu	Gln	Val	Ile	Leu	Asn	Thr	Trp	Tyr	Gly	Gly
		195				200						205			
Glu	Met	Lys	Lys	Gly	Met	Phe	Ser	Ile	Met	Asn	Tyr	Met	Asn	Pro	Leu
	210					215					220				
Arg	Gly	Ile	Ala	Ser	Met	His	Cys	Ser	Ala	Asn	Thr	Asp	Met	Glu	Gly
225				230						235				240	
Thr	Ser	Ser	Ala	Ile	Phe	Phe	Gly	Leu	Ser	Gly	Thr	Gly	Lys	Thr	Thr
			245					250						255	
Leu	Ser	Thr	Asp	Pro	Lys	Arg	Lys	Leu	Ile	Gly	Asp	Asp	Glu	His	Gly
			260					265					270		
Trp	Asp	Asn	Glu	Gly	Val	Phe	Asn	Tyr	Glu	Gly	Gly	Cys	Tyr	Ala	Lys
		275					280					285			
Val	Ile	Asn	Leu	Asp	Lys	Glu	Ser	Glu	Pro	Asp	Ile	Phe	Asn	Ala	Ile
	290					295					300				
Lys	Arg	Asp	Ala	Leu	Leu	Glu	Asn	Val	Thr	Val	Ala	Ala	Asp	Gly	Lys
305				310						315				320	
Ile	Asn	Phe	Ala	Asp	Lys	Ser	Val	Thr	Glu	Asn	Thr	Arg	Val	Ser	Tyr
			325					330						335	
Pro	Ile	Tyr	His	Ile	Glu	Asn	Ile	Val	Lys	Pro	Val	Ser	Lys	Gly	Pro
			340					345					350		
His	Ala	Lys	Gln	Val	Ile	Phe	Leu	Ser	Ala	Asp	Ala	Phe	Gly	Val	Leu
	355						360					365			
Pro	Pro	Val	Ser	Ile	Leu	Asn	Pro	Glu	Gln	Ala	Gln	Tyr	Tyr	Phe	Leu
	370					375					380				
Ser	Gly	Phe	Thr	Ala	Lys	Leu	Ala	Gly	Thr	Glu	Arg	Gly	Ile	Thr	Glu
385				390						395				400	
Pro	Thr	Pro	Thr	Phe	Ser	Ala	Cys	Phe	Gly	Ala	Ala	Phe	Leu	Ser	Leu
			405					410					415		
His	Pro	Thr	Lys	Tyr	Ala	Glu	Glu	Leu	Val	Lys	Lys	Met	Glu	Met	Thr
			420					425					430		
Gly	Ala	Lys	Ala	Tyr	Leu	Val	Asn	Thr	Gly	Trp	Asn	Gly	Ser	Gly	Lys
		435					440					445			
Arg	Ile	Ser	Ile	Lys	Asp	Thr	Arg	Gly	Ile	Ile	Asp	Ala	Ile	Leu	Asp
	450					455					460				
Gly	Ser	Ile	Asp	Lys	Ala	Pro	Thr	Lys	Val	Ile	Pro	Phe	Phe	Asp	Phe

465 470 475 480
 Val Val Pro Thr Glu Leu Pro Gly Val Asp Pro Lys Ile Leu Asp Pro
 485 490 495
 Arg Asp Thr Tyr Ala Asp Pro Ala Gln Trp Asn Glu Lys Ala Lys Asp
 500 505 510
 Leu Ala Gly Arg Phe Ile Lys Asn Phe Ala Lys Phe Thr Gly Asn Glu
 515 520 525
 Ala Gly Lys Lys Leu Val Ala Ala Gly Pro Lys Leu
 530 535 540

<210> 7869

<211> 538

<212> PRT

<213> B.fragilis

<400> 7869

Arg Gln Glu Asn Ile Met Asn Asn Lys Arg Lys Asn Met Ser Ile Tyr
 1 5 10 15
 Ile Thr Val Leu Leu Trp Ile Leu Ile Pro Leu Leu Ile Ile Asn Gly
 20 25 30
 Leu Ile Phe Leu Thr Ser Asp Met Leu Ser Val Phe Val Gly Gly Met
 35 40 45
 Leu Ser Leu Lys Leu Leu Cys Tyr Ser Leu Phe Phe Ser Tyr Ser Phe
 50 55 60
 Leu Leu Gly Tyr Lys Ala Gln Thr Gly Gly Gly Ile Ile Ile Leu Val
 65 70 75 80
 Leu Leu Leu Ile Leu Gly Leu Phe Leu Trp Gln Ser Phe Ile Ser Trp
 85 90 95
 Val Glu Pro Gly Thr Leu Trp Arg Glu Ala Val Gly Ala Ile Ile Phe
 100 105 110
 Leu Gly Val Ile Leu Ser Val Gly Ile Leu Cys Arg Tyr Gly Ile Lys
 115 120 125
 Ala Gly Gly Leu Leu Arg Leu Ser Ser Ile Leu Ala Phe Ala Ile Val
 130 135 140
 Ala Phe Val Tyr Ile Thr Val Cys Leu Ser Thr Val Cys Gly Ala Tyr
 145 150 155 160
 Ser Pro Ile Pro Glu Leu Phe Trp Lys Asp Ala Tyr Pro Glu Lys
 165 170 175
 Gly Lys Asn Gly Thr Val Phe Phe His His Ser Lys Leu His Ile Asn
 180 185 190
 Pro Phe Asp Ser Arg Val Ile Gly Val Phe Arg Phe Asn Asp Lys Lys
 195 200 205
 Glu Tyr Val Gly Tyr Ser Ala Ser Met Tyr Glu Ser His Glu Ile Val
 210 215 220
 Asn Ser Gly Phe Lys Val Asp Asp Thr Ile Lys Ala Ser Thr Cys Asp
 225 230 235 240
 Phe Ile His Ser Ser Tyr Glu Pro Leu Leu Ser Asn Phe Met Ser Asp
 245 250 255
 Cys Gln Asp Ala Leu Tyr Met Lys Glu Gly Asp Tyr Cys Val Phe Leu
 260 265 270
 Tyr Thr Glu Lys Gly Ala Leu Tyr Arg Lys Glu Phe Asp Tyr His Arg
 275 280 285
 Asn Gly Ile Val Lys Gln Ala Arg Thr Tyr Thr Tyr Asp Arg Lys Thr
 290 295 300
 Gly Phe His Ile Glu Arg Glu Lys Thr Ile Glu Phe Asp Glu Leu Gly
 305 310 315 320
 Phe Cys Asp Lys Ser Gly Arg Val Arg Trp Asn Ile Lys Asp Phe His
 325 330 335
 Gln Thr Asp Thr Val Ile Asp Met Glu Ser Arg Tyr Gly Gln Ala Tyr


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          340          345          350
Asp Pro Ala Ala Arg Asn Arg Lys Tyr Ala Leu Pro Gln Gln Leu Ile
          355          360          365
Ile Asp Ser Phe Val Thr Val Glu Ser Lys Thr Ala Ser Pro Asp Ser
          370          375          380
Leu Arg Lys Tyr Ser Ser Leu Asp Phe Pro Leu Asp Glu Tyr Tyr Lys
          385          390          395          400
Leu Gly Gly Val Asn Gly His Ala Ile Ser Val Tyr Val Asn Thr Asp
          405          410          415
Glu Tyr Lys Trp Arg Lys Ile Tyr Leu Ser Asp Phe Thr Gln Leu Gly
          420          425          430
Asn Val Glu Gln Met Tyr Ser Phe Ile Asp Ala Leu Glu Leu Ser Cys
          435          440          445
Leu Asp Thr Gly Met Trp Val Arg Ile Gly Glu Gln Ser Met Val Val
          450          455          460
Gly Glu Asp Asp Glu Cys Cys Ser Phe Val Leu Lys Glu Val Val Lys
          465          470          475          480
Gly Gly Lys Ala Leu Ala Leu Tyr Phe Phe Asp Asp Tyr Ala Val Thr
          485          490          495
Thr Asp Ser Arg Phe Cys Phe Tyr Phe Asn Pro Ser Ile His Lys Asp
          500          505          510
Met Glu Ile Gln Lys Arg Ala Gly Ala Ala Trp Asn Glu Met Lys Lys
          515          520          525
Ile Phe Met Glu Tyr Lys Glu Lys Glu Asn
          530          535

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<210> 7870
<211> 60
<212> PRT
<213> B.fragilis

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<400> 7870
Lys Arg Ala Leu Phe Leu Lys Asp Ile Ile His Leu Leu Phe Lys Asp
1          5          10          15
Ile Ile Ile Ile Leu Ile Ser Thr Ser Arg Phe Glu Ile Lys Arg Lys
          20          25          30
Asn Gln Pro Asn Asp Thr Ile Pro Gln Tyr Gly Asp Glu Ile Asn His
          35          40          45
Thr Lys Asn Glu Ile Cys Val Lys Asn Gly Ile Ile
          50          55          60

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<210> 7871
<211> 637
<212> PRT
<213> B.fragilis

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<400> 7871
Tyr Ser Lys Asn Thr Leu Thr Pro Val His Val Asn Pro Lys Phe Lys
1          5          10          15
Tyr Ile Asn Arg Ile Met Ala Asp Glu Met Met Val Lys Glu Leu Glu
          20          25          30
Glu Val Val Val Arg Phe Ser Gly Asp Ser Gly Asp Gly Met Gln Leu
          35          40          45
Ala Gly Asn Ile Phe Ser Asn Val Ser Ala Thr Val Gly Asn Asp Ile
          50          55          60
Cys Thr Phe Pro Asp Tyr Pro Ala Asp Ile Arg Ala Pro Gln Gly Ser
          65          70          75          80
Leu Thr Gly Val Ser Gly Phe Gln Val His Val Gly Ala Ser Lys Ile
          85          90          95

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Phe	Thr	Pro	Gly	Asp	His	Cys	His	Val	Leu	Val	Ala	Met	Asn	Pro	Ala	100	105	110
Ala	Leu	Lys	Thr	Gln	Ile	Lys	Phe	Cys	Lys	Pro	Gln	Gly	Leu	Val	Ile	115	120	125
Thr	Asp	Ser	Asp	Ser	Phe	Gly	Glu	Lys	Asp	Leu	Glu	Lys	Ala	Gln	Phe	130	135	140
Lys	Thr	Gly	Asn	Pro	Phe	Glu	Glu	Met	Gly	Ile	Thr	Gln	Gln	Val	Leu	145	150	155
Glu	Val	Pro	Ile	Ser	Ser	Met	Cys	Lys	Glu	Ser	Leu	Lys	Asp	Ser	Gly	165	170	175
Leu	Asp	Asn	Lys	Ala	Met	Leu	Arg	Cys	Lys	Asn	Met	Phe	Ala	Leu	Gly	180	185	190
Leu	Val	Cys	Trp	Leu	Phe	Asn	Arg	Asn	Leu	Ser	Ala	Ala	Glu	Lys	Met	195	200	205
Leu	Asn	Glu	Lys	Phe	Ala	Lys	Lys	Pro	Glu	Ile	Ala	Ala	Ala	Asn	Ile	210	215	220
Lys	Val	Leu	Asn	Asp	Gly	Tyr	Asn	Tyr	Gly	Ala	Asn	Thr	His	Ala	Ser	225	230	235
Thr	Ser	Thr	Tyr	Lys	Ile	Glu	Ser	Lys	Thr	Pro	Lys	Ala	Ala	Gly	Leu	245	250	255
Tyr	Thr	Asp	Ile	Asn	Gly	Asn	Lys	Ala	Thr	Ser	Tyr	Gly	Leu	Ile	Ala	260	265	270
Ala	Ala	Glu	Lys	Ala	Gly	Leu	Glu	Leu	Tyr	Leu	Gly	Ser	Tyr	Pro	Ile	275	280	285
Thr	Pro	Ala	Thr	Asp	Ile	Leu	His	Glu	Leu	Ala	Lys	His	Lys	Ser	Leu	290	295	300
Gly	Val	Lys	Thr	Val	Gln	Cys	Glu	Asp	Glu	Ile	Ala	Gly	Cys	Ala	Ser	305	310	315
Ala	Val	Gly	Ala	Ala	Phe	Ala	Gly	Asp	Leu	Ala	Val	Thr	Thr	Thr	Ser	325	330	335
Gly	Pro	Gly	Val	Cys	Leu	Lys	Ser	Glu	Ala	Met	Asn	Leu	Ala	Val	Ile	340	345	350
Ala	Glu	Leu	Pro	Leu	Val	Val	Val	Asn	Val	Gln	Arg	Gly	Gly	Pro	Ser	355	360	365
Thr	Gly	Met	Pro	Thr	Lys	Ser	Glu	Gln	Thr	Asp	Leu	Leu	Gln	Ala	Leu	370	375	380
Tyr	Gly	Arg	Asn	Gly	Glu	Ser	Pro	Met	Pro	Val	Ile	Ala	Ala	Thr	Ser	385	390	395
Pro	Thr	Asn	Cys	Phe	Asp	Ala	Ala	Tyr	Met	Ala	Ala	Lys	Ile	Ala	Leu	405	410	415
Glu	His	Met	Thr	Pro	Val	Val	Leu	Leu	Thr	Asp	Ala	Phe	Ile	Ala	Asn	420	425	430
Gly	Ser	Ala	Ala	Trp	Lys	Leu	Pro	Asn	Met	Asp	Glu	Tyr	Pro	Ala	Ile	435	440	445
Asn	Pro	Pro	Tyr	Val	Thr	Pro	Asp	Met	Ile	Gly	Thr	Trp	Thr	Pro	Phe	450	455	460
Gln	Arg	Asn	Glu	Lys	Thr	Gly	Val	Arg	Tyr	Trp	Ala	Val	Pro	Gly	Thr	465	470	475
Glu	Gly	Phe	Met	His	Arg	Ile	Gly	Gly	Leu	Glu	Lys	Ser	Ser	Glu	Thr	485	490	495
Gly	Val	Ile	Ser	Thr	Glu	Pro	Glu	Asn	His	Gln	Lys	Met	Thr	Leu	Leu	500	505	510
Arg	Gln	Ala	Lys	Val	Asp	Lys	Ile	Ala	Asp	Ser	Ile	Pro	Glu	Gln	Glu	515	520	525
Val	Gln	Gly	Asp	Ala	Asp	Ala	Asp	Leu	Leu	Val	Val	Gly	Trp	Gly	Gly	530	535	540
Thr	Tyr	Gly	His	Leu	Tyr	Ser	Ala	Val	Glu	His	Met	Arg	Lys	Asn	Gly	545	550	555
Lys	Lys	Val	Ala	Leu	Ala	His	Phe	Gln	Tyr	Ile	Asn	Pro	Leu	Pro	Lys	560		

				565					570					575	
Asn	Thr	Ala	Glu	Ile	Leu	Lys	Lys	Tyr	Lys	Lys	Ile	Val	Val	Ala	Glu
			580					585					590		
Gln	Asn	Leu	Gly	Gln	Phe	Ala	Gly	Tyr	Leu	Arg	Met	Lys	Val	Pro	Gly
		595					600					605			
Leu	Asn	Ile	Ser	Gln	Phe	Asn	Gln	Val	Lys	Gly	Gln	Pro	Phe	Val	Thr
	610					615					620				
Arg	Glu	Leu	Val	Glu	Ala	Phe	Thr	Lys	Leu	Leu	Glu	Glu			
625					630					635					

<210> 7872

<211> 222

<212> PRT

<213> B.fragilis

<400> 7872

Asn	Ala	Val	Glu	Lys	Met	Lys	Ile	Ile	Asn	Leu	Ser	Glu	Thr	Asp	Ser
1			5					10					15		
Ile	Leu	Asn	Gln	Tyr	Val	Ser	Glu	Ile	Arg	Asn	Val	Glu	Val	Gln	Asn
		20					25					30			
Asp	Arg	Leu	Arg	Phe	Arg	Arg	Asn	Ile	Glu	Arg	Ile	Gly	Glu	Val	Met
	35						40					45			
Ala	Tyr	Glu	Met	Ser	Lys	Thr	Phe	Ala	Tyr	Ser	Val	Lys	Glu	Ile	Gln
	50				55						60				
Thr	Pro	Leu	Gly	Ile	Ala	Pro	Val	Arg	Thr	Pro	Asp	Asn	Pro	Leu	Val
65				70					75					80	
Ile	Ser	Thr	Ile	Leu	Arg	Ala	Gly	Leu	Pro	Phe	His	Gln	Gly	Phe	Leu
			85					90					95		
Ser	Tyr	Phe	Asp	Tyr	Ala	Glu	Asn	Ala	Phe	Val	Ser	Ala	Tyr	Arg	Lys
	100						105					110			
Tyr	Lys	Asp	Thr	Leu	Lys	Phe	Asp	Ile	His	Ile	Glu	Tyr	Ile	Ala	Ser
	115						120					125			
Pro	Arg	Ile	Asp	Gly	Lys	Thr	Leu	Ile	Ile	Thr	Asp	Pro	Met	Leu	Ala
	130					135					140				
Thr	Gly	Gly	Ser	Met	Glu	Leu	Ser	Tyr	Gln	Ala	Met	Leu	Thr	Lys	Gly
145				150					155					160	
His	Pro	Ser	Glu	Ile	His	Val	Ala	Ser	Ile	Ile	Ala	Ser	Gln	Arg	Ala
			165					170					175		
Val	Asp	His	Ile	Ala	Ser	Ile	Leu	Pro	Glu	Asp	Lys	Thr	Thr	Ile	Trp
	180						185					190			
Cys	Ala	Ala	Ile	Asp	Pro	Glu	Ile	Asn	Glu	His	Ser	Tyr	Ile	Val	Pro
	195					200						205			
Gly	Leu	Gly	Asp	Ala	Gly	Asp	Leu	Ala	Phe	Gly	Glu	Lys	Glu		
	210					215					220				

<210> 7873

<211> 337

<212> PRT

<213> B.fragilis

<400> 7873

Glu	Met	Ser	Glu	Thr	Val	Tyr	Thr	Ala	Lys	Asp	Tyr	Lys	Ser	Gly	Gln
1			5					10					15		
Pro	Arg	Trp	Cys	Pro	Gly	Cys	Gly	Asp	His	Ala	Phe	Leu	Asn	Ser	Leu
		20					25					30			
His	Lys	Ala	Met	Ala	Glu	Leu	Gly	Val	Ala	Pro	His	Asn	Ile	Ala	Val
	35						40					45			
Ile	Ser	Gly	Ile	Gly	Cys	Ser	Ser	Arg	Leu	Pro	Tyr	Tyr	Val	Asn	Thr
	50					55					60				

Tyr Gly Phe His Thr Ile His Gly Arg Ala Ala Val Ala Thr Gly
 65 70 75 80
 Ala Lys Val Ala Asn Pro Asp Leu Thr Ile Trp Gln Ile Ser Gly Asp
 85 90 95
 Gly Asp Gly Leu Ala Ile Gly Gly Asn His Phe Ile His Ala Val Arg
 100 105 110
 Arg Asn Ile Asp Leu Asn Met Ile Leu Leu Asn Asn Arg Ile Tyr Gly
 115 120 125
 Leu Thr Lys Gly Gln Tyr Ser Pro Thr Ser Asp Arg Gly Phe Val Ser
 130 135 140
 Lys Ser Ser Pro Tyr Gly Thr Val Glu Asp Pro Phe His Pro Ala Glu
 145 150 155 160
 Leu Cys Phe Gly Ala Arg Gly Arg Phe Phe Ala Arg Cys Val Ala Val
 165 170 175
 Asp Gly Pro Ala Ser Val Glu Val Leu Lys Ala Ala Ala Asn His Lys
 180 185 190
 Gly Ala Ser Val Val Glu Val Leu Gln Asn Cys Val Ile Phe Asn Asp
 195 200 205
 Gly Thr His Glu Ser Val Ala Thr Lys Glu Gly Arg Ser Lys Asn Ala
 210 215 220
 Ile Tyr Leu Glu His Gly Lys Pro Met Leu Phe Gly Glu Asn Lys Glu
 225 230 235 240
 Phe Gly Leu Met Gln Glu Gly Phe Gly Leu Lys Val Val Lys Leu Gly
 245 250 255
 Glu Asn Gly Val Thr Glu Lys Asp Ile Leu Ile His Asn Ala His Ser
 260 265 270
 Met Asp Asn Thr Leu Gln Leu Lys Leu Ala Leu Met Glu Gly Pro Asp
 275 280 285
 Phe Pro Ile Ala Leu Gly Val Ile Arg Asp Val Glu Ala Pro Thr Tyr
 290 295 300
 Asn Asp Ala Val Ala Glu Gln Ile Asp Glu Val Lys Ala Lys Lys Lys
 305 310 315 320
 Tyr His Asn Phe Gln Glu Leu Leu Met Thr Asn Glu Thr Trp Glu Val
 325 330 335
 Lys

<210> 7874

<211> 60

<212> PRT

<213> B.fragilis

<400> 7874

Gln Gly Lys Asp Asn Ala Pro Ala Lys Arg Ile Thr Tyr Pro Lys Gln
 1 5 10 15
 Pro Phe Thr Ser Pro Phe Pro Arg Leu Tyr Phe Lys Ile Leu Ile Ile
 20 25 30
 Asn Met Leu Val Phe Glu Leu Pro Asp Gln Leu Ser Trp Gly Ile Thr
 35 40 45
 Glu Ile Leu Phe Ala Val Phe Ile Glu Thr Gly Arg
 50 55 60

<210> 7875

<211> 415

<212> PRT

<213> B.fragilis

<400> 7875

Phe Ile Leu Glu Lys Lys Ile Gly Lys Leu Ser Ile Arg Val Leu Leu

```

1           5           10           15
Asn Thr His Arg Asn Asp Cys Glu Ile Tyr Pro Leu Ile Ile Arg
20           25           30
Val Val Tyr His Arg Arg Lys Ser Glu Tyr Ser Leu Gly Trp Lys Ile
35           40           45
His Thr Ser Asn Phe Ser Ala Asp Arg Glu Arg Val Val Tyr Ser Ser
50           55           60
Thr Gly Asn Leu Lys Arg Lys Asp Leu Gly Leu Ile Asn Asp Ala Ile
65           70           75           80
Ser Gln Glu Arg Glu Arg Leu Leu Lys Ile Phe Ala Phe Leu Gln Gln
85           90           95
Asn Met Pro Gly Phe Ser Leu Ser Gln Leu Met Asp Lys Tyr Arg Met
100          105          110
Glu Arg Asn Leu Arg Tyr Val Asp Ala Phe Ile Val Arg Glu Ile Glu
115          120          125
Arg Leu Arg Gln Glu Gly Arg Ser Gly Thr Ala Gly Leu Tyr Leu Ser
130          135          140
Gly Leu Tyr Ser Leu Arg Arg Phe Leu Arg Gly Gln Lys Ile Thr Phe
145          150          155          160
Arg Glu Leu Thr Tyr Cys Phe Leu Thr Asp Tyr Ile His Phe Leu Arg
165          170          175
Met Arg Gly Ile Ser Glu Asn Thr Val Asn Met Tyr Ile Arg Asn Leu
180          185          190
Arg Ala Val Tyr Asn Lys Ala Gln Lys Gln Gly Ile Asn Met Gly Cys
195          200          205
Glu Ser Pro Phe Arg Glu Leu Lys Leu Gln Thr Gln Glu Thr Ala Lys
210          215          220
Arg Ala Leu Cys Lys His Asp Ile Ala Arg Ile Val Ser Val Asp Leu
225          230          235          240
Ser Ser Glu Pro Leu Leu Asp Arg Ala Arg Asp Leu Phe Met Phe Ser
245          250          255
Phe Tyr Ala Arg Gly Met Pro Phe Val Asp Ile Val Phe Leu Lys His
260          265          270
Asp Ser Ile Ile Asn Gly Ile Ile Tyr Tyr Glu Arg Asn Lys Thr Gly
275          280          285
Gln Arg Met Gln Val Arg Val Ile Pro Pro Leu Ala Ala Leu Ile Glu
290          295          300
Lys Tyr Arg Ser Ser Tyr Pro Tyr Val Leu Pro Tyr Ile Thr Ser Phe
305          310          315          320
Ser Asp Arg Thr Ser Tyr Met Gln Tyr Arg Tyr Ala Leu Gly Asn Val
325          330          335
Asn Arg Leu Leu Lys Arg Leu Gly Arg Arg Leu His Leu Pro Leu Val
340          345          350
Leu Thr Thr Tyr Val Ala Arg His Ser Trp Ala Thr Ile Ala Lys Glu
355          360          365
Glu Gly Phe Ser Ile Ala Ser Ile Ser Glu Gly Leu Gly His Thr Ser
370          375          380
Glu Ala Thr Thr Gln Ile Tyr Leu Gln Ser Phe Asn Ser Glu Val Ile
385          390          395          400
Asp Lys Ile Asn Glu Gln Val Val Ala Ser Ile Gly Arg His Ile
405          410          415

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<210> 7876

<211> 117

<212> PRT

<213> B.fragilis

<400> 7876

Ala Glu Gly Glu Arg Lys Glu Asn Glu Gly Asn Cys Leu Thr Val Thr

1		5		10		15									
Cys	Leu	Ile	Phe	Ile	Ser	Ser	Ser	Val	Phe	Phe	Arg	Ile	Ser	Arg	Leu
		20						25					30		
Ala	Phe	Glu	Ala	Met	Arg	Ser	Asn	Ser	Thr	Glu	Asn	Ala	Glu	Phe	Gln
		35					40					45			
Val	Asn	Pro	Ser	Ser	Thr	Leu	Thr	Ser	Pro	Val	Thr	Gly	Val	Glu	Glu
		50				55					60				
Ala	Ala	Phe	Leu	Ile	Arg	Ile	Ser	Arg	Cys	Leu	His	Thr	Thr	Asn	Ser
65					70					75					80
Ala	Val	Ser	Thr	Gly	Arg	Val	Thr	Gly	Thr	Leu	Leu	Ile	Ser	Asp	Lys
				85				90						95	
Asp	Gly	Ser	Pro	Val	Asn	Ala	Glu	Phe	Met	Pro	Val	Val	Ser	Leu	Pro
			100					105						110	
Ile	Thr	Asn	Lys	Ser											
			115												

<210> 7877

<211> 300

<212> PRT

<213> B.fragilis

<400> 7877

Phe	Thr	Lys	Leu	Lys	Met	Lys	Leu	His	Tyr	Lys	Lys	Glu	His	Ile	Ser
1				5					10					15	
Cys	Thr	Asn	Tyr	Lys	Ser	Glu	Ser	Tyr	Glu	Gly	Phe	Gly	Ile	Gly	Thr
		20						25					30		
Leu	Thr	Ser	Gly	Ser	Asn	Phe	Asn	Ser	Gln	Thr	Leu	Ser	Val	Lys	Thr
		35				40						45			
Asn	Phe	Leu	Ile	Phe	Ile	Leu	Glu	Gly	Glu	Val	Glu	Ile	Ile	Pro	Lys
		50				55					60				
Glu	Gly	Lys	Ile	Lys	Arg	Val	Ile	Ala	Gln	Glu	Phe	Phe	Phe	Ile	Ser
65					70					75					80
Ala	Leu	Ser	Thr	Tyr	Glu	Ile	Gln	Val	Arg	Val	Pro	Gly	Arg	Tyr	Ile
				85				90						95	
Tyr	Met	Ser	Phe	Leu	Tyr	Asn	Asp	Ile	Lys	Leu	Cys	Glu	Lys	His	Met
			100					105						110	
Leu	Glu	Ser	Tyr	Leu	Lys	Glu	Val	Arg	Glu	Ala	Ser	Glu	Glu	Val	Gly
		115				120							125		
Ile	Leu	Ser	Val	Arg	His	Pro	Leu	Asn	Leu	Phe	Leu	Glu	Leu	Met	Asp
		130				135					140				
Ala	Tyr	Leu	Arg	Ala	Gly	Val	Asn	Cys	Lys	His	Leu	His	Ser	Ile	Lys
145					150					155					160
Glu	Lys	Glu	Leu	Phe	Ile	Ile	Leu	Arg	Thr	Ser	Tyr	Ser	Lys	Gln	Glu
				165					170					175	
Ile	Val	Asn	Leu	Phe	His	Glu	Ile	Ile	Gly	Thr	Asn	Met	Ser	Phe	Lys
			180					185						190	
Ala	Ala	Val	Leu	Leu	His	Val	Asp	Arg	Val	Asn	Asn	Arg	Glu	Glu	Leu
		195					200					205			
Ala	Gln	Ala	Met	Gly	Met	Ser	Ile	Thr	Asp	Leu	Ala	Arg	Lys	Phe	Lys
		210				215					220				
Val	Glu	Phe	Gly	Glu	Ser	Val	Tyr	Ser	Trp	Leu	Leu	Lys	Gln	Lys	Asn
225					230					235					240
Lys	Lys	Ile	Ile	Tyr	Arg	Leu	Ala	Gln	Pro	Gly	Ala	Ser	Val	Lys	Glu
				245					250					255	
Ile	Val	Tyr	Glu	Phe	Gly	Phe	Ser	Ser	Ala	Ala	Ser	Phe	Asn	Lys	Tyr
			260					265						270	
Cys	Lys	Lys	Asn	Phe	Gly	Asn	Ser	Pro	Arg	Glu	Leu	Val	Arg	Gln	Leu
			275				280						285		
Lys	Asp	Lys	His	Ile	Asp	Asn	Gln	Asn	Leu	Lys	Ile				

290

295

300

<210> 7878

<211> 261

<212> PRT

<213> B.fragilis

<400> 7878

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Met Cys Met Arg Ser Thr Pro Ser Ala Phe Ile Gly Lys Asn Val Ser
1      5      10      15
Gly Gln Arg Ser Thr Phe Glu Glu Met Ala Thr Glu Met Pro Ile Asp
      20      25      30
Leu Pro Glu Gly Lys Trp Thr Phe Leu Cys Leu Glu Gly Lys Val Gly
      35      40      45
Asp Tyr Glu Ile Gly Ile Tyr Arg Gln Val Phe Pro His Lys Phe Ser
      50      55      60
Pro Ala Val Ser Pro Gly Ile Thr Thr Leu Ser Asp Phe Arg Val Lys
      65      70      75      80
Ala Tyr Tyr Glu Gln Lys Glu Asn Leu Glu Tyr Ser Leu Gly Glu Leu
      85      90      95
Phe Phe Gly Arg Leu Asp Ser Met Glu Ile Thr Ala Asp Asn Gly Gly
      100      105      110
Thr Gly Val Val Asp Leu Met Lys Asn Thr Asn Lys Ile Glu Val Arg
      115      120      125
Val Lys Gly Ile Ala Asp Gly Ser Ser Ala Arg Ile Thr Ser Asp Asn
      130      135      140
Gly Arg Phe Asn Ser Glu Asn Val Thr Pro Ala Asp Ala Gly Thr Ile
      145      150      155      160
Ile Tyr Val Pro Tyr Tyr Ser Ala Ser Gln Thr Asp Asp Thr Arg Val
      165      170      175
Phe Gln Phe Asp Val Leu Arg Leu Tyr Thr Asp Gly His Leu Phe Leu
      180      185      190
Lys Leu Leu Asn Pro Asp Gly Thr Asp Val Ile Pro Gly Phe Thr Lys
      195      200      205
Asp Leu Ile Asn Ala Ile Met Ser Ser Pro Ala Tyr His Thr Gln Glu
      210      215      220
Asp Leu Asp Arg Glu Asp Thr Tyr Leu Ile Glu Leu Val Leu Ser Lys
      225      230      235      240
Asp Gly Val Ile Val Ser Leu Arg Val Asn Gly Trp Glu Thr Val Ser
      245      250      255
Thr Thr Pro Glu Val
      260

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<210> 7879

<211> 81

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (48)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7879

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Asn Arg Gln Arg Thr Leu Leu Tyr Cys Lys Pro Thr Thr Met Ser Ser
1      5      10      15
Pro Leu Ser Arg Tyr Pro His Gly Gly Ala Met Asp Leu Glu Phe Val
      20      25      30
Met Arg Gln Thr Ala Arg Met Ser Gln Arg Ser Met Asn Pro Asp Xaa

```

35 40 45
 Ser Trp Gly Phe Thr Ser Leu Asp Pro Ser Pro Leu Asn Leu Leu Ile
 50 55 60
 Lys Lys Ser Lys Val Phe Pro Gly Leu Pro Val Pro Phe Lys Lys His
 65 70 75 80
 Trp

<210> 7880
 <211> 277
 <212> PRT
 <213> B.fragilis

<400> 7880
 Ser Ile Val Arg Val Glu Lys Arg Phe Ser Lys Ile Phe Ser Ile Val
 1 5 10 15
 Val Tyr Ala Phe Leu Ala Leu Trp Met Gly Ala Cys Lys Ser Glu Pro
 20 25 30
 Val Arg Leu Pro Glu Leu Ser Gly His Arg Gly Ala Asp Cys Ile Ala
 35 40 45
 Pro Glu Asn Thr Leu Ala Ser Ala Asp Ser Cys Ile Lys Tyr Lys Ile
 50 55 60
 Asp Phe Met Glu Cys Asp Ile Cys Ile Ser Lys Asp Ser Val Phe Tyr
 65 70 75 80
 Leu Leu His Asp Ser Thr Leu Asp Arg Thr Thr Asn Gly Thr Gly Leu
 85 90 95
 Ile Arg Glu Trp Leu Ser Ala Asp Ile Asp Thr Leu Asp Ala Gly Ser
 100 105 110
 Trp Phe Gly Glu Lys Phe Ser Gly Gln Cys Val Pro Arg Leu Asp Val
 115 120 125
 Leu Leu Arg Lys Ala Lys Gln Asn Gly Leu Lys Leu Thr Leu Asp Tyr
 130 135 140
 Arg Thr Gly Asp Phe Gly Gln Leu Leu Asp Leu Val Arg Arg Glu Gly
 145 150 155 160
 Met Leu Glu Asn Cys Thr Phe Thr Phe Trp Ser Asp Lys Glu Ala Lys
 165 170 175
 Ala Phe Arg Gln Val Ala Pro Glu Ile Arg Thr Leu Gln Ala Tyr Val
 180 185 190
 Gly Gly Gly Ala Glu Leu Asp Lys Val Ile Ala Glu Ile Asn Pro Asn
 195 200 205
 Ile Ala Val Ile Arg Ile Asp Ser Leu Asp Lys Leu Leu Val Glu Arg
 210 215 220
 Cys His Lys Lys Gly Leu Lys Val Leu Ala Leu Ala Leu Gly Thr Asp
 225 230 235 240
 Asp Val Glu Glu Ser Asp Arg Lys Ala Ile Glu Leu Gly Val Asp Val
 245 250 255
 Leu Ala Thr Asp Arg Pro Glu Leu Phe Val Lys Lys Tyr Arg Pro Glu
 260 265 270
 His Thr Trp Thr Lys
 275

<210> 7881
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7881
 Leu Tyr Ser Gly Lys Leu Asn Asn Ser Ile Leu Tyr Ala Asn Phe Ile
 1 5 10 15

Leu Cys Met Ile Tyr Phe Val Ser Val Leu Gly Asn Cys Ile Val Arg
 20 25 30
 Leu Ile Phe Ser Phe Asp Leu Glu Ala Arg Gly Thr Tyr Gln Asn Asp
 35 40 45
 Asn Tyr Val Phe Glu Glu Gln Met Asp Asp Ile Phe Gln Glu
 50 55 60

<210> 7882

<211> 798

<212> PRT

<213> B.fragilis

<400> 7882

Pro Ser Lys Gly Lys Ala Gly Lys Met Ser Val Asn Tyr Asn Phe Asn
 1 5 10 15
 Tyr Asn Trp Ser Gln Pro Ala Asn Met Pro Asn Lys Leu Asp Ala His
 20 25 30
 Asp Ala Ala Phe Tyr Lys Asn Met Ser Met Thr Asn Asp Gly Leu Ala
 35 40 45
 Pro Ala Tyr Thr Asp Asp Glu Leu Glu Leu Phe Arg Asn Gly Ser Asp
 50 55 60
 Pro Arg Arg Tyr Pro Asn Thr Asp Trp Gln Lys Leu Cys Leu Lys Asn
 65 70 75 80
 Ser Ala Pro Glu Met Gln His Thr Leu Thr Val Thr Gly Gly Ser Glu
 85 90 95
 Lys Ile Lys Ala Tyr Thr Ser Leu Gly Phe Tyr Asp Gln Lys Ser Leu
 100 105 110
 Tyr Lys Phe Asp Val Asn Ser Phe Lys Arg Tyr Asn Phe Arg Thr Asn
 115 120 125
 Ile Val Ala Asp Phe Lys Glu Ile Gly Leu Lys Val Thr Ser Ser Ile
 130 135 140
 Glu Ala Tyr Lys Thr Asp Leu Arg Ser Pro Asn Ala Lys Ser Gly Asp
 145 150 155 160
 Ser Tyr Tyr His Thr Trp Gly His Ile Gln Asn Lys Ala Pro Trp Glu
 165 170 175
 Ile Ala Tyr Asn Pro Asn Gly Gln Ile Phe Asn Thr Pro Asp Asn Pro
 180 185 190
 Leu Met Glu Ile Ser Pro Asp Ala Gly Tyr Thr Lys Asn Glu Asn Leu
 195 200 205
 Ser Ala Ile Ala Asn Leu Ala Leu Glu Trp Ser Val Pro Tyr Val Pro
 210 215 220
 Gly Leu Arg Leu Lys Ala Leu Gly Asn Tyr Arg Ile Asn Asn Asp Lys
 225 230 235 240
 Ser Lys Ser Trp Lys Lys Ser Pro Leu Ala Tyr Asp Trp Asp Gly Asn
 245 250 255
 Pro Asn Asp Pro Gly Lys Pro Ser Leu Ser Lys Ser Tyr Ser Asn Trp
 260 265 270
 Ser Ser Tyr Thr Val Gln Gly Phe Ala Asn Tyr Asp Arg Thr Phe Asn
 275 280 285
 Gln Val His Thr Ile Ser Ala Thr Ala Gly Ile Glu Ala Tyr Lys Leu
 290 295 300
 Phe Lys Asp Asp Ala Ser Leu Ser Arg Glu Glu Tyr Leu Leu Asp Val
 305 310 315 320
 Asp Gln Ile Gly Ala Gly Pro Val Ser Thr Ala Lys Asn Ser Ser Ser
 325 330 335
 Glu Gly Glu Glu Ala Arg Ala Gly Val Val Ala Arg Leu Lys Tyr Asp
 340 345 350
 Tyr Ala Ser Lys Tyr Val Ala Glu Ala Ser Leu Arg Tyr Asp Gly Ser
 355 360 365

Asp Asn Phe Pro Arg Gly Lys Arg Trp Gly Thr Phe Tyr Ala Gly Ser
 370 375 380
 Leu Ala Trp Val Ile Ser Glu Glu Ser Phe Trp Gln Thr Leu Lys Asp
 385 390 395 400
 Arg His Ile Phe Asp Gln Phe Lys Val Arg Ala Ser Tyr Gly Glu Ile
 405 410 415
 Gly Ser Asp Ala Ile Gly Arg Tyr Ala Tyr Leu Gln Ser Tyr Gly Leu
 420 425 430
 Asn Asp Arg Gly Tyr Leu Leu Asn Gly Ser Trp Tyr Pro Gly Phe Ser
 435 440 445
 Glu Gly Ala Leu Val Ser Lys Asp Ile Thr Trp Tyr Thr Thr Arg Asp
 450 455 460
 Phe Asn Ile Gly Phe Asp Phe Gly Ser Leu Asn Asn Arg Leu Ser Gly
 465 470 475 480
 Ser Val Asp Tyr Phe Arg Lys Ser Thr Lys Gly Tyr Leu Thr Ser Pro
 485 490 495
 Ser Ala Val Ala Tyr Thr Asp Pro Leu Gly Ile Ala Leu Pro Lys Val
 500 505 510
 Lys Ser Asn Gly Glu Phe Ile Arg Gln Gly Ala Glu Phe Ile Leu Gln
 515 520 525
 Trp Lys Glu Lys Arg Gly Asp Phe Glu Tyr Thr Leu Ser Gly Asn Phe
 530 535 540
 Thr Tyr Phe Asp Gln Tyr Trp Asn Ile Asn Pro Asn Glu Ala Glu Thr
 545 550 555 560
 Asp Thr Lys Asn Pro Tyr Lys Arg Thr Thr Gln Ala Lys Gly Tyr Trp
 565 570 575
 Gly Ile Gly Tyr Asp Cys Leu Gly Tyr Tyr Gln Asn Gln Glu Asp Ile
 580 585 590
 Met Asn Ser Pro Lys Arg Gln Ser Ser Val Asn Leu Gly Ala Gly Asp
 595 600 605
 Leu Lys Tyr Asn Asp Phe Asn Gly Asp Gly Ile Ile Asp Gly Ser Asp
 610 615 620
 Gln His Arg Ile Gly Lys Asn Ser Met Pro Arg Gly Gln Tyr Gly Phe
 625 630 635 640
 Ser Ala Asp Leu Asn Tyr Lys Gly Trp Phe Met Asn Met Leu Trp Gln
 645 650 655
 Gly Ala Thr Pro Ala Asp Leu Tyr Met Gly Gly Met Ile Gln Gly Ser
 660 665 670
 Gln Ser Gly Ser Gly Tyr Pro Pro Val Ile Tyr Asp Phe Gln Thr Asp
 675 680 685
 Val Trp Thr Pro Asn Asn Thr Gly Ala Arg Tyr Pro Arg Leu Arg Ser
 690 695 700
 Thr Ala Ser Tyr Asn Gly Ser Asn Asn Tyr Gly Ser Ser Asp Phe Trp
 705 710 715 720
 Leu Ile Asn Thr Gly Tyr Leu Arg Leu Lys Thr Leu Ser Ile Gly Tyr
 725 730 735
 Asp Phe Lys His Lys Leu Leu Lys Arg Val Ala Trp Met Asn Lys Cys
 740 745 750
 Asn Val Ser Leu Asn Gly Tyr Asn Leu Leu Thr Phe Ser Lys Ala Asn
 755 760 765
 Lys Phe Asp Ile Asp Pro Glu Ile Gly Asp Gly Asn Leu Tyr Thr Tyr
 770 775 780
 Pro Val Ser Arg Val Tyr Ser Ile Ser Val Asn Val Gly Phe
 785 790 795

<210> 7883

<211> 579

<212> PRT

<213> B.fragilis

<400> 7883

Ser His Phe Leu Phe Cys Cys Lys Met Ile His Gln Lys Lys Phe Val
 1 5 10 15
 Thr Ile Ser Ile Gly Tyr Arg Ile Tyr Lys Met Leu Gly Met Leu Cys
 20 25 30
 Leu Cys Val Leu Val Tyr Ser Cys Gly Ser Lys Ser Pro Leu Thr Met
 35 40 45
 Arg Leu Phe Met Gln Ala Gly Gly Ala Thr Val Glu Leu Pro Asn Thr
 50 55 60
 Ser Ser Ala Asp Ser Val Phe Thr Val Ser Glu Thr Val Gly Phe Arg
 65 70 75 80
 Asp Ser Val Val Val Asp Asn Pro Val Ser Ser Val Asp Ser Leu Glu
 85 90 95
 Glu Asp Ile Trp Lys Ser Ile Asp Met Asp Arg Ile Asp Ile Val Ala
 100 105 110
 Gln Arg Lys Ser Ile Glu Arg Ile Leu Glu Arg Asn Gly Glu Val Thr
 115 120 125
 Leu Met Phe Tyr Val Lys Ala Pro Lys Val Leu Leu Asp Ser Cys Trp
 130 135 140
 Lys Leu Thr Met Tyr Pro Glu Leu Ile Glu Lys Asp Ser Ser Val Leu
 145 150 155 160
 Leu Ser Pro Val Ile Leu Arg Gly Lys Glu Phe Ile Arg Thr Gln Glu
 165 170 175
 Ser Gln Tyr Lys Ala Tyr Asp Asp Phe Leu Lys Gly Ile Ile Pro Glu
 180 185 190
 Ser Lys Tyr Asp Ser Ala Phe Val Asp Arg Glu Gly Ile Arg Lys Asp
 195 200 205
 Ile Phe Ala Arg Gln Arg Leu Phe Trp Lys Val Tyr Glu Ala Glu Arg
 210 215 220
 Arg Arg Arg Leu Ala Tyr Leu Arg Trp Lys Ala Leu Met Asp Lys Arg
 225 230 235 240
 His Gly Trp Ile Ser Thr Lys Ala Glu Gly Asn Arg Asn Thr Leu Lys
 245 250 255
 Gln Arg Met Gln Arg Asn Val Leu Glu Arg Ser Val Glu Lys Phe Ile
 260 265 270
 Ala Gly Tyr Asp Thr Val Gly Ile Arg Ala Ser Tyr Gln Lys Lys Tyr
 275 280 285
 Asp Arg Arg Thr Asp Phe Trp Pro Ala Tyr Arg Leu Pro Arg Ala Met
 290 295 300
 Thr Val Lys Asp Val Pro Ser Arg Phe Gln Glu Leu Tyr Leu Ser Gly
 305 310 315 320
 Gly Arg Leu Glu Asp Ile Arg Asn Tyr Ser Phe Thr Arg Arg Asp Ser
 325 330 335
 Ile Glu Ile Ala Ser His Arg Tyr Phe Arg Lys Ala Ile Ala Glu Asn
 340 345 350
 Glu Tyr Asn Arg Asp His Gln Asp Leu Ile Arg Asp Arg Ile Ile Arg
 355 360 365
 Phe Pro Tyr Ala Asp Ser Ala Met Val Asn Gln Thr Ala Asp Pro Ser
 370 375 380
 Glu Asp Phe Ser Tyr Leu Tyr Met Tyr Arg Ile Pro Val Arg Glu Gly
 385 390 395 400
 Met Lys Lys Leu Tyr Ile Thr Leu Arg Gly Asn Val Leu Ala Thr Asp
 405 410 415
 His Ser Val Trp Ser Leu Pro Pro Ala Asp Thr Leu Thr Phe Val Ile
 420 425 430
 Ala Ser Val Ala Asp Leu Ala Asp Ala Thr Leu Ala Arg Arg Phe Asp
 435 440 445
 Ile Ala Gly Asp Ser Val Asn His Leu Thr Pro Glu Arg Glu Glu Tyr

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      450              455              460
Ala Gln Gly Leu Glu Ala Leu Ser Asn Arg Glu Tyr Gln Arg Ala Leu
465              470              475              480
Gly Ile Leu Glu Lys Tyr Pro Asp Tyr Asn Thr Ala Val Ala Leu Thr
      485              490              495
Cys Leu Gly Tyr His Ala Lys Ser Glu Asp Leu Leu Lys Gln Leu Pro
      500              505              510
Gln Thr Ala Ala Val Glu Tyr Leu Arg Ala Ile Val Asn Val Arg Leu
      515              520              525
Glu Asp Tyr Gln Ala Ala Ala Glu Leu Leu Leu Glu Ala Cys Arg Lys
      530              535              540
Asp Thr Lys Tyr Val Tyr Arg Thr Glu Met Asp Ser Asp Ile Ala Ala
545              550              555              560
Leu Leu Pro Arg Phe Met Gly Leu Lys Glu Glu Leu Glu Arg Ile Ala
      565              570              575
Ser Glu Glu

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<210> 7884
 <211> 189
 <212> PRT
 <213> B.fragilis

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<400> 7884
Ile Ile Val Met Ala Phe Lys Arg Ser Val Phe Leu Phe Leu Leu Val
1              5              10              15
Val Ser Ser Thr Phe Leu Gly Val Glu Ile Ala Arg Gly Gln Val Tyr
      20              25              30
Ser Leu Gln Thr Asn Val Leu Gly Trp Gly Thr Thr Asn Met Asn Leu
      35              40              45
Glu Phe Gly Leu Lys Phe Ser His Arg Trp Thr Phe His Phe Pro Leu
      50              55              60
Gln Tyr Asn Pro Phe Ser Phe Gly Asp Ala Arg Leu Arg Asn Leu Ser
65              70              75              80
Ala Ser Pro Gly Val Arg Tyr Trp Ile Arg Glu Ser Tyr Gly Arg Ser
      85              90              95
Tyr Phe Leu Gly Ile His Gly Val Ser Thr Met Tyr Asn Val Gly Gly
      100              105              110
Val Phe Gly Asp Lys Tyr Arg Tyr Glu Gly Tyr Gly Phe Gly Gly Gly
      115              120              125
Leu Ser Leu Gly Tyr Asn Arg Pro Leu Ser Pro His Trp Asn Leu Glu
      130              135              140
Phe Glu Ala Gly Leu Gly Val Leu Trp Thr His Tyr Asp Lys Tyr Val
145              150              155              160
Cys Lys Ala Cys Gly Gln Lys Val Ala Thr Phe Lys Gly Ala Arg Leu
      165              170              175
Ile Pro Thr Lys Leu Ala Val Asn Ile Val Tyr Leu Phe
      180              185

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<210> 7885
 <211> 392
 <212> PRT
 <213> B.fragilis

```

<400> 7885
Leu His Lys Met Ser Leu Leu Lys Lys Lys Tyr Met Arg Cys Val Lys
1              5              10              15
Gly Ile Tyr Ile Phe Phe Leu Leu Leu Ser Phe Ile Ser Cys Glu Leu
      20              25              30

```

Glu Asp Lys Ile Gly Arg Tyr Thr Ser Gly Asp Asn Pro Val Glu Val
 35 40 45
 Glu Leu Met Thr Arg Asn Val Thr Leu Gly Gly Ser Glu Ser Gly Val
 50 55 60
 Thr Leu Lys Arg Leu Arg Val Ile Ala Val Ala Lys Asn Ser Gly Lys
 65 70 75 80
 Val Glu Met Asn Arg Arg Ala Asp Leu Ser Asp Pro Ser Ser Ser Gly
 85 90 95
 Leu Glu His Thr Gly Gly Val Phe Lys Leu Tyr Leu Arg Pro Gly Asp
 100 105 110
 Tyr Asp Leu Phe Val Ile Gly Asn Glu Thr Thr Gly Met Asn Ser Ala
 115 120 125
 Leu Thr Gly Glu Pro Ser Leu Ser Glu Ile Lys Ser Val Pro Val Thr
 130 135 140
 Leu Pro Val Asp Thr Ala Glu Phe Val Val Cys Lys His Leu Asp Ile
 145 150 155 160
 Arg Ile Arg Asn Ala Ala Ser Ser Thr Pro Val Thr Gly Glu Val Ser
 165 170 175
 Val Asp Glu Gly Leu Thr Trp Asn Ser Ala Phe Ser Val Glu Leu Glu
 180 185 190
 Arg Ile Ala Ser Lys Ala Ser Leu Glu Ile Arg Lys Asn Thr Asp Glu
 195 200 205
 Asp Ile Lys Ile Arg Gln Val Thr Val Lys Gln Leu Pro Ser Phe Ser
 210 215 220
 Phe Leu Ser Pro Ser Ala Tyr Pro Leu Ser Gly Gly Leu Thr Val Thr
 225 230 235 240
 Asp Thr Arg Ser Phe Ser Thr Pro Val Ser Ile Ala Gly Glu Lys Asp
 245 250 255
 Val Pro Ser Gly Tyr Pro Tyr Thr Ser Val Val Gln Gly Lys Asn Ser
 260 265 270
 Phe Ile Leu Pro Glu Tyr Ile Trp Asp Asn Thr Ala Gly Lys Gly Arg
 275 280 285
 Ala Ser Phe Met Glu Ile Glu Ala Glu Arg Asn Gly Ala Ser Glu Thr
 290 295 300
 Trp Gln Ile Leu Leu Gly Lys Ser Thr Asp Ile Pro Ala Asp Tyr Ser
 305 310 315 320
 Leu Gly Arg Asn Thr Tyr Tyr Arg Tyr Met Leu Thr Val Asn Pro Leu
 325 330 335
 Asn Val Asp Val Asn Val Ser Val Glu Pro Trp Gln Asn Thr Thr Ala
 340 345 350
 Tyr Asp Thr Ile Pro Gly Ala Lys Ile Val Phe Ser Arg Val Asn Val
 355 360 365
 Gly Tyr Ser Tyr Ala Ser Glu Ser Val Val Thr Phe Thr Thr Lys Asn
 370 375 380
 Leu Pro Pro Val Ser Val Ser Leu
 385 390

<210> 7886

<211> 90

<212> PRT

<213> B.fragilis

<400> 7886

Tyr Met Ile Phe Val Gly Lys Lys Asn Ser Thr Ser Phe Phe Leu Leu
 1 5 10 15
 Ile Ser Leu Ile Leu Gly Leu Ala Leu Tyr Thr Ala Leu Phe Ser Ser
 20 25 30
 Cys Val Tyr Glu Asp Leu Ser Lys Cys Ser Arg Met Phe Met Leu Gln
 35 40 45

Pro Arg Tyr Leu Leu His Thr Gly Glu Gly Asp Arg Phe Gly Glu Ala
 50 55 60
 Val His His Ile Asp Val Tyr Ala Phe Asp Ser Leu Gly Ile Tyr Arg
 65 70 75 80
 Gln Lys Cys Phe Gly Thr Lys Glu His Ile
 85 90

<210> 7887
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7887
 Ser Gly Tyr Ser Gly Ile Tyr Arg Ile Glu Thr Met Arg Phe Pro Ser
 1 5 10 15
 Leu Ile Ile Glu Lys Ala Ser Tyr Ser Phe Ala His Ile Ile Gly Gly
 20 25 30
 Leu Val Val Phe Ile Lys Thr Glu Cys Gly Val Ile Leu Asp Phe Asp
 35 40 45
 Ser Thr Pro Phe Leu Gln Asp Ala Ile Met Gln Asn Arg Ile Phe Pro
 50 55 60
 Pro Arg
 65

<210> 7888
 <211> 443
 <212> PRT
 <213> B.fragilis

<400> 7888
 Ser Leu Val Lys Pro Ile Asp Ser Met Ile Lys Leu Tyr Phe Lys Gln
 1 5 10 15
 Ala Trp Gln Leu Leu Lys Gln Asn Pro Leu Phe Ser Ser Val Tyr Val
 20 25 30
 Leu Gly Thr Gly Leu Gly Ile Ala Met Thr Met Ser Leu Val Ile Ile
 35 40 45
 Tyr Tyr Ile Lys Met Ala Pro Val Tyr Pro Glu Glu Asn Arg Asn Arg
 50 55 60
 Ile Leu Val Ser Lys Gly Met Thr Ala Ile Glu Gln Gly Asn Glu Asn
 65 70 75 80
 Asn Trp Phe Ser Ser Asn Val Ser Phe Gln Thr Val Lys Arg Phe Tyr
 85 90 95
 Tyr Pro Leu Lys Ser Ala Glu Ala Val Gly Cys Ser Leu Asp Gly His
 100 105 110
 Thr Thr Ser Leu Leu Glu Leu Ser Glu Ser Lys Asp Leu Lys Glu Val
 115 120 125
 Gln Val Lys Leu Val Asp Ala Gly Phe Trp Lys Val Phe Ser Phe Ala
 130 135 140
 Phe Val Asp Gly Lys Pro Phe Thr Arg Ala Asp Phe Asp Ser Gly Leu
 145 150 155 160
 Arg Lys Ala Val Ile Ser Val Thr Leu Ala Arg Arg Leu Tyr Gly Asp
 165 170 175
 Asn Ala Pro Val Gly Arg Thr Phe Val Leu Asp Ser Asp Glu Tyr Gln
 180 185 190
 Val Cys Gly Val Val Lys Asp Val Ser Phe Ile Thr Pro Ala Thr Tyr
 195 200 205
 Ala Asp Ile Trp Leu Pro Leu Thr Val Asp Ala Glu Val Val Glu Glu
 210 215 220
 Lys Glu Gly Ser Tyr Glu Leu Ile Gly Asn Leu Ser Val Tyr Met Leu

225 230 235 240
 Ala Pro Ser Val Gly Ser Lys Asp Lys Val Ala Gly Glu Val Arg Asp
 245 250 255
 Ala Phe Arg Lys Tyr Asn Phe Ser Gln Lys Lys Tyr Lys Val Asp Leu
 260 265 270
 Tyr Gly Gln Pro Val Ser Tyr Trp Lys Ser Thr Phe Tyr Glu Tyr Cys
 275 280 285
 Asn Ser Ala Pro Asp Trp Gly Lys Leu Ile Arg Thr Tyr Gly Thr Ile
 290 295 300
 Leu Leu Ala Leu Leu Phe Val Pro Ala Leu Asn Leu Ala Gly Met Ile
 305 310 315 320
 Ala Ser Arg Met Lys Arg Gln Leu Ser Glu Met Gly Ile Arg Lys Ala
 325 330 335
 Phe Gly Ala Ser Lys Ala Ser Leu Leu Met Gln Val Phe Trp Glu Asn
 340 345 350
 Leu Phe Leu Thr Gly Leu Gly Gly Leu Leu Gly Leu Leu Leu Ser Tyr
 355 360 365
 Leu Ile Val Tyr Cys Gly Arg Asn Trp Leu Pro Asp Leu Leu Ser Ala
 370 375 380
 Tyr Ser Asp Val Ile Pro Glu Gly Val Asp Ser Phe Leu Thr Pro Gly
 385 390 395 400
 Met Leu Leu Asn Pro Val Val Ile Gly Ile Thr Phe Leu Val Ser Leu
 405 410 415
 Ile Leu Asn Val Leu Ser Ala Leu Ile Pro Ala Leu His Ala Leu Lys
 420 425 430
 Lys Asp Ile Val Tyr Ser Leu Asn Asp Lys Arg
 435 440

<210> 7889

<211> 425

<212> PRT

<213> B.fragilis

<400> 7889

Ile Ala Met Asn Leu Met Met Ile Leu Arg Gln Leu Trp Asn Gln Arg
 1 5 10 15
 Ala Ala Asn Gly Trp Ile Leu Gly Glu Leu Val Val Val Thr Tyr Phe
 20 25 30
 Leu Trp Gly Val Val Asp Pro Val Tyr Val Leu Leu Ser Asp Lys Ala
 35 40 45
 Leu Pro Asp Asn Tyr Asp Leu Thr Asp Thr Tyr Leu Leu Ser Ile Gly
 50 55 60
 Ala Tyr Ser Ala Asn His Thr Arg Tyr Asn Pro Glu Leu Asp Ser Asp
 65 70 75 80
 Ser Leu Lys Gln Val Asp Phe Met Arg Ile Val Asp Gln Val Arg Arg
 85 90 95
 Tyr Pro Gly Val Ser Asp Val Thr Val Ser Phe Phe Asn Ser Tyr Pro
 100 105 110
 Gln Ser Gly Thr Trp Asn Gly Gly Gln Leu Phe Asn Asp Thr Ile Phe
 115 120 125
 Ala Asn Ile Gln Gln Met Thr Phe Leu Ser Gly Thr Asp Tyr Phe Gly
 130 135 140
 Val Phe Arg Ile His Asp Ala Arg Thr Gly Glu Ile Pro Pro Val Leu
 145 150 155 160
 Ala Glu Gly Glu Gln Gly Ile Tyr Leu Thr Pro Asp Val Ala Glu Lys
 165 170 175
 Leu Phe Gly Glu Lys Tyr Pro Gln Asn Lys Trp Ile His Trp Gly Asp
 180 185 190
 Ser Thr Arg Lys Ser Pro Leu Thr Ala Val Ile Asp Pro Leu Gln Ile

195	200	205
Arg Ser Ile Ser Gln Pro Gly Pro Leu Val Phe Lys Ala Thr Ser Glu		
210	215	220
Leu Ile His Leu Pro Gly Ala Ala Arg Ile Cys Phe Arg Val Arg Asp		
225	230	235
Gly Leu Ala Ser Pro Ala Phe Thr Glu Thr Phe Lys Arg Glu Met Arg		
245	250	255
Pro Arg Met Gln Ile Gly Asn Tyr Tyr Leu Ala Ser Leu Thr Asp Phe		
260	265	270
Glu Thr Val Ser Lys His Phe Glu Tyr Tyr Met Gly Thr Thr Gly Thr		
275	280	285
Ile Arg Leu Gln Ile Ile Leu Ala Ser Phe Phe Leu Leu Cys Val Phe		
290	295	300
Leu Gly Met Gly Gly Thr Phe Trp Leu Arg Cys Asn Ser Arg Arg Glu		
305	310	315
Glu Met Gly Ile Tyr Met Thr Met Gly Ser Thr Arg His Arg Leu Ile		
325	330	335
Arg Gln Phe Leu Leu Glu Ala Trp Trp Met Val Thr Ile Ala Phe Val		
340	345	350
Ile Gly Ala Leu Ala Gln Phe Gln Ile Val Tyr Leu Asn Gly Phe Ala		
355	360	365
Phe Ala Pro Asp Asp Pro Asn Pro Asp Tyr Ile Gln Asn Arg Pro Val		
370	375	380
Leu His Phe Leu Ile Val Ser Ala Ile Ser Tyr Ile Leu Ile Leu Ala		
385	390	395
Val Ser Phe Val Ala Thr Tyr Ile Pro Val Ser Lys Ala Ala Arg Met		
405	410	415
Asn Pro Ala Asp Ala Leu Arg Asp Glu		
420	425	

<210> 7890

<211> 113

<212> PRT

<213> B.fragilis

<400> 7890

Leu Arg Val Lys Cys Val Gly Asn Thr Val Ala Phe Asp Lys Ser Thr
1 5 10 15
Thr Val Thr Lys Gly Cys Asn Val Ser Arg Pro Tyr Ile Leu Leu Tyr
20 25 30
Trp Ser Thr Glu Leu Ser Leu Ile Thr Ser Ser Ile Gly His Leu Val
35 40 45
Val Tyr Ser Val Thr Asn Val Arg Ile Phe Ile Ile Cys Ser Met Gly
50 55 60
Glu Glu Ile Lys Thr Gly Ile Gly Val Lys Ile Ser Val Ile Arg Val
65 70 75 80
Val Ser Ser Ala Phe Phe Leu Pro Met Tyr Pro Arg Leu Ile Glu Leu
85 90 95
Leu Val His Gln Arg Ala Val Cys Ser Phe Ser Asp Thr Gln Leu Ser
100 105 110
Ala

<210> 7891

<211> 304

<212> PRT

<213> B.fragilis

<400> 7891


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Thr Thr Arg Cys Pro Met Glu Glu Val Ile Lys Leu Asn Ser Val Asp
1      5      10
Gln Tyr Asn Lys Met Tyr Gly Leu Glu Thr Leu His Pro Leu Val Thr
20      25      30
Val Val Asp Leu Ser Lys Ala Thr Val Phe Pro Thr His Phe Thr Leu
35      40      45
Asn Tyr Gly Leu Tyr Ala Leu Phe Leu Lys Gln Thr Lys Cys Gly Asp
50      55      60
Leu Arg Tyr Gly Arg Gln Met Tyr Asp Tyr Gln Glu Gly Thr Val Thr
65      70      75      80
Ser Phe Ala Pro Gly Gln Val Val Glu Val Lys Leu Asn Asp Gly Val
85      90      95
Arg Pro Met Ser His Gly Ile Leu Phe His Pro Asp Leu Ile Arg Gly
100     105     110
Thr Ser Leu Gly Gln Glu Ile Lys His Tyr Ser Phe Phe Ser Tyr Ala
115     120     125
Ser Asn Glu Ala Leu His Leu Ser Asp Asp Glu Lys Lys Ile Phe Gln
130     135     140
Asp Cys Leu Asp Lys Val Gln Gln Glu Leu Ser Arg Pro Ile Asp Lys
145     150     155     160
His Ser Lys Arg Leu Ile Ala Arg Asn Ile Glu Leu Leu Leu Asp Tyr
165     170     175
Cys Met Arg Phe Tyr Glu Arg Gln Phe Val Thr Arg Ser Lys Val Asn
180     185     190
Lys Asp Val Leu Met Lys Phe Glu Asp Leu Leu Asp Val Tyr Phe Gln
195     200     205
Ser Glu Gln Ser Pro Asn Glu Lys Leu Pro Thr Val Lys Tyr Phe Ala
210     215     220
Asp Lys Val Asn Leu Ser Ser Asn Tyr Phe Gly Asp Leu Ile Lys Lys
225     230     235     240
Glu Thr Gly Lys Thr Ala Gln Glu Tyr Ile Gln Gly Lys Ile Ile Asn
245     250     255
Ile Ala Lys Glu Arg Ile Leu Ala Ser Glu Lys Thr Val Ser Glu Ile
260     265     270
Ala Tyr Glu Leu Gly Phe Gln Tyr Pro Gln His Phe Thr Arg Ile Phe
275     280     285
Lys Lys Val Val Gly Cys Thr Pro Thr Glu Tyr Arg Val Ile Gln Val
290     295     300

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<210> 7892

<211> 429

<212> PRT

<213> B.fragilis

<400> 7892

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Asn Met Ile Arg Leu Ile Met Lys Asn Leu Trp Ala Arg Arg Arg Lys
1      5      10      15
Asn Gly Trp Leu Leu Ala Glu Leu Ile Leu Val Ser Ile Val Thr Trp
20      25      30
Val Ile Val Asp Pro Leu Val Val Leu Thr His Asp Arg Asn Leu Pro
35      40      45
Glu Gly Tyr Arg Pro Asp His Leu Phe Leu Leu Gln Leu Ala Ser Tyr
50      55      60
Pro Ala Gly Ser Glu Gln Phe Arg Ala Glu Glu Asn Asp Thr Leu Ala
65      70      75      80
Arg Lys Ala Asn Phe Glu Arg Leu Leu Asn Lys Leu Lys His Tyr Glu
85      90      95
Gly Val Lys Tyr Thr Thr Phe Ile Leu Asn Glu Gln Tyr Pro Ser Ala
100     105     110

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Leu Ser Ile Ser Asn Gly Asn Thr Met Phe Asp Thr Ile Pro Val Arg
 115 120 125
 Thr Leu Arg Leu Ala Phe Ile Pro His Thr Asp Tyr Phe Arg Thr Met
 130 135 140
 Gly Met Glu Gly Ala Glu Gly Met Thr Ala Glu Gln Leu Asp Asn Arg
 145 150 155 160
 Asp Phe Leu Trp Thr Glu Ser Val Leu Thr Ala Asp Ile Ser Gln Arg
 165 170 175
 Leu Lys Asp Gly Lys Pro Leu Tyr Gly Arg Arg Leu Gly Asn Gly Asp
 180 185 190
 Glu Glu Asp Tyr Arg Val Gly Gly Val Ile Ala Pro Val Arg Tyr Arg
 195 200 205
 Ser Tyr Met Gln Pro Met Pro Ile Glu Leu Tyr Val Tyr Glu Glu Phe
 210 215 220
 Pro Asp Tyr Met Tyr Tyr Tyr Ile Pro Leu Ile Ala Leu Arg Ile Asp
 225 230 235 240
 Asp His Leu Ser Glu Lys Phe Phe Leu His His Phe Arg Glu Trp Met
 245 250 255
 Asn Lys Glu Leu Thr Val Gly Asn Tyr Tyr Val Lys Ser Val Gln Ser
 260 265 270
 Phe Ser Asp Ile Gln Glu Gln His Glu Phe Ser Glu Gly Ile Thr Asn
 275 280 285
 Gln Tyr Arg Leu Asn Leu Ala Leu Gly Ile Phe Phe Leu Val Asn Leu
 290 295 300
 Cys Leu Gly Val Ala Gly Thr Phe Trp Met Gln Thr Arg Ser Arg Arg
 305 310 315 320
 Glu Glu Val Gly Ile Met Leu Ser Phe Gly Gly Thr Pro Ser His Ile
 325 330 335
 Thr Arg Leu Leu Leu Tyr Glu Gly Trp Ile Leu Thr Thr Leu Gly Thr
 340 345 350
 Leu Thr Gly Cys Leu Leu Tyr Leu Gln Tyr Ala Leu Arg Asp Gly Leu
 355 360 365
 Tyr Thr Thr Cys Asn Ser Ala Glu Glu Ala Met Pro Ala Tyr Trp Ile
 370 375 380
 Asn His Phe Gly Leu His Phe Thr Ala Val Thr Leu Ile Val Tyr Leu
 385 390 395 400
 Leu Leu Leu Ile Val Val Ser Ile Gly Ile Trp Met Pro Ala His Lys
 405 410 415
 Leu Ser Arg Ile Ser Pro Val Asp Ala Leu Arg Asp Glu
 420 425

<210> 7893

<211> 427

<212> PRT

<213> B.fragilis

<400> 7893

Lys Glu Leu Met Ile Lys Gln Tyr Phe Lys Gln Ser Leu Val Leu Leu
 1 5 10 15
 Gln Gln Asn Lys Leu Leu Ser Val Ile Ala Ile Ile Gly Thr Ala Leu
 20 25 30
 Ala Ile Ala Met Ile Met Cys Ile Val Leu Ile Tyr Gln Ala Arg Thr
 35 40 45
 Ala Asn Tyr Glu Pro Glu Ile Asn Arg Asp Arg Thr Leu Ser Ile Glu
 50 55 60
 Met Thr Ile Ala Gln Lys Ile Asp Asp Lys Gly Trp Asn Met Gly Asn
 65 70 75 80
 Gln Leu Ser Leu Arg Thr Ile Lys Glu Cys Phe Tyr Pro Met Thr Thr
 85 90 95

Ala Glu Ala Val Ser Ala Val His Tyr Ser Met Thr Ser Leu Ala Ala
 100 105 110
 Thr Pro Asp Gly Thr Arg Glu Val Lys Cys Ala Val Ser Tyr Thr Asp
 115 120 125
 Asp Asn Phe Trp Arg Val Phe Gly Phe Arg Phe Leu His Gly Lys Pro
 130 135 140
 Tyr Gly Gln Glu Phe Val Ser Gly Glu Lys Lys Leu Val Val Thr Arg
 145 150 155 160
 Ser Leu Ala Arg Arg Leu Phe Gly Ile Asp Asn Ala Val Gly Arg Ile
 165 170 175
 Ile Ser Leu Gly Phe Val Asp Tyr Thr Val Cys Gly Val Val Ala Asp
 180 185 190
 Val Ser Val Leu Ala Glu Ala Ala Tyr Ala Glu Ala Trp Ala Pro Tyr
 195 200 205
 Thr Ala Leu Pro Asp Tyr Glu Arg Ser Val Ser Glu Gly Leu Gln Gly
 210 215 220
 Gly Tyr Ser Cys Tyr Ile Leu Val Pro Lys Gly Ala Asp Pro Asp Val
 225 230 235 240
 Val Arg Thr Glu Ala Gln Gln Asn Val Asp Arg Met Asn Ala Asn Gln
 245 250 255
 Lys Glu Leu Lys Leu Leu Leu Gly Gly Ala Pro Asp Thr Arg Leu Met
 260 265 270
 Ser Leu Ala Arg Asp Asn Pro Phe Asp Asp Pro Asp Thr Ser Arg Leu
 275 280 285
 Val Leu Ile Tyr Ile Val Val Ile Thr Ile Leu Leu Leu Val Pro Ala
 290 295 300
 Ile Asn Leu Ser Gly Ile Thr Leu Ser Arg Met Arg Arg Arg Met Glu
 305 310 315 320
 Glu Ile Gly Val Arg Arg Ala Phe Gly Ala Thr Arg Gly Glu Leu Leu
 325 330 335
 Arg Gln Val Leu Ala Glu Asn Leu Val Val Thr Leu Met Gly Gly Val
 340 345 350
 Leu Gly Leu Ile Leu Ser Tyr Ile Ala Val Leu Cys Met Arg Asp Trp
 355 360 365
 Leu Leu Asn Thr Ser Met Ser Gly Tyr Tyr Gly Val Asp Thr Gln Val
 370 375 380
 Ser Ala Gly Met Val Ile Gln Pro Phe Val Phe Val Cys Ala Leu Leu
 385 390 395 400
 Phe Cys Leu Leu Met Asn Leu Leu Ser Ala Gly Ile Pro Ala Ile Arg
 405 410 415
 Val Ser Arg Thr Asn Ile Val Asn Ala Ile Lys
 420 425

<210> 7894

<211> 224

<212> PRT

<213> B.fragilis

<400> 7894

Thr Lys Val Met Ile Thr Leu Thr Ser Leu Ser Lys Ile Tyr Arg Thr
 1 5 10 15
 Asn Glu Ile Glu Thr Val Ala Leu Glu Asn Val Asn Leu Lys Val Asp
 20 25 30
 Arg Gly Glu Phe Leu Ser Ile Met Gly Pro Ser Gly Cys Gly Lys Ser
 35 40 45
 Thr Leu Leu Asn Ile Met Gly Leu Leu Asp Ala Pro Thr Ala Gly Thr
 50 55 60
 Ile Glu Ile Asn Gly Thr His Thr Glu Gly Met Lys Asp Lys Glu Leu
 65 70 75 80

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Ala Ala Phe Arg Asn Lys Thr Leu Gly Phe Val Phe Gln Ser Phe His
      85                      90                      95
Leu Ile Asn Ser Leu Asn Val Met Asp Asn Val Glu Leu Pro Leu Leu
      100                      105                      110
Tyr Arg His Ile Ala Ser Ser Glu Arg Arg Lys Leu Ala Gln Glu Val
      115                      120                      125
Leu Glu Lys Val Gly Leu Ser His Arg Met Arg His Phe Pro Thr Gln
      130                      135                      140
Leu Ser Gly Gly Gln Cys Gln Arg Val Ala Ile Ala Arg Ala Ile Ile
      145                      150                      155                      160
Gly Asn Pro Glu Ile Ile Leu Ala Asp Glu Pro Thr Gly Asn Leu Asp
      165                      170                      175
Ser Lys Met Gly Ala Glu Val Met Glu Leu Leu His Arg Leu Asn Lys
      180                      185                      190
Glu Asp Gly Arg Thr Ile Val Met Val Thr His Asn Glu Glu Gln Ala
      195                      200                      205
Gly Gln Thr Ser Arg Thr Val Arg Phe Phe Asp Gly Arg Gln Val Gln
      210                      215                      220

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<210> 7895

<211> 401

<212> PRT

<213> B.fragilis

<400> 7895

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Ile Glu Glu Ile Met Ile Lys His Leu Leu Lys Gln Ile Trp Ala Gln
1      5                      10                      15
Arg Ser Val Asn Ala Trp Leu Trp Phe Glu Leu Met Ile Val Ser Val
      20                      25                      30
Cys Leu Phe Tyr Val Met Asp Tyr Leu Tyr Val Pro Gly Arg Leu Tyr
      35                      40                      45
Ala Pro Pro Leu Gly Phe Asp Thr Glu His Val Tyr Arg Val Lys Leu
      50                      55                      60
Ala Ser Ile Pro Pro Gly Gly Lys Glu Tyr Lys Pro Gly Asp Thr Asp
      65                      70                      75                      80
Ser Leu Lys Ile Glu Gln Trp Phe Ser Ile Leu Ser Arg Leu Arg Ala
      85                      90                      95
Tyr Pro Gly Val Glu Ala Val Ser Leu Ser Ile Gly Ser His Pro Tyr
      100                      105                      110
Asn Gln Asn Ser Ser Ser Gly Ser Arg Gly Ile Asp Thr Thr Trp Val
      115                      120                      125
His Gly Tyr Val Tyr Asn Val Ser Pro Asp Tyr Phe Arg Val Phe Arg
      130                      135                      140
Ile Thr Asp Lys Gln Gly Lys Thr Glu Ser Leu Val Gln Ala Ala Asn
      145                      150                      155                      160
Gln Glu Asn Thr Trp Ile Ile Ser Ala Glu Thr Glu Arg Glu Phe Ser
      165                      170                      175
Ala Lys Gly Thr Asp Ala Leu Gly Lys Gly Val Lys Asn Trp Gly Glu
      180                      185                      190
Thr Glu Pro Thr His Thr Ile Arg Gly Ile Cys Asn Thr Ile Arg Phe
      195                      200                      205
Asp Asp Phe Tyr Pro Leu Tyr Pro Thr Tyr Ile Glu Cys His Ser Glu
      210                      215                      220
Ala Ala Leu Leu Gly Arg Arg Gly Asn Asn Ala Glu Phe Cys Val Arg
      225                      230                      235                      240
Val Arg Pro Asp Ala Asp Gly Val Asp Phe Pro Ser Arg Phe Arg Lys
      245                      250                      255
Asp Met Lys Val Gln Leu Arg Val Gly Asn Phe Tyr Leu Leu Asp Ile
      260                      265                      270

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[illegible]

<210> 7896

<211> 215

<212> PRT

<213> B.fragilis

<400> 7896

Ser	His	Lys	Val	Gly	Thr	Tyr	Val	Val	Tyr	Phe	Lys	Val	Arg	Gln	Lys
1				5					10					15	
Glu	Asp	Met	Pro	Lys	Leu	Tyr	Ala	Glu	Val	Asn	Glu	Leu	Val	Arg	Lys
			20					25					30		
Tyr	Asn	Thr	Ser	Gln	Lys	Glu	Tyr	Thr	Val	Asp	Ile	Phe	His	Gln	Pro
		35					40					45			
Asp	Pro	Tyr	Trp	Gln	Thr	Trp	Phe	Arg	Glu	Gly	Asn	Thr	Asn	Glu	Ile
	50					55					60				
Asp	Trp	Ala	Ser	Val	Ile	Lys	Leu	Tyr	Gly	Gly	Ala	Leu	Leu	Ala	Leu
65				70					75					80	
Leu	Leu	Val	Pro	Ala	Ile	Asn	Leu	Ser	Gly	Met	Ile	Ser	Ser	Arg	Met
				85					90					95	
Asp	Asp	Arg	Leu	Ala	Glu	Met	Gly	Ile	Arg	Lys	Ala	Phe	Gly	Ala	Asn
			100					105					110		
Arg	Lys	Gln	Leu	Leu	Asn	Gln	Val	Leu	Trp	Glu	Asn	Leu	Leu	Leu	Thr
		115					120					125			
Cys	Ile	Gly	Gly	Leu	Met	Gly	Leu	Ile	Val	Ser	Trp	Gly	Leu	Leu	Val
	130					135					140				
Leu	Gly	Arg	Asn	Trp	Val	Phe	Ser	Leu	Phe	Asp	Lys	Tyr	Pro	Thr	Val
145				150						155				160	
Ile	Ser	Asp	Gly	Val	Asp	Val	Ala	Ile	Asn	Pro	Gln	Met	Leu	Phe	Ser
			165						170					175	
Pro	Leu	Met	Phe	Cys	Val	Thr	Phe	Ala	Phe	Cys	Leu	Ile	Leu	Asn	Leu
			180					185					190		
Leu	Ser	Ala	Trp	Trp	Pro	Thr	Trp	Arg	Ser	Leu	His	Lys	Asp	Ile	Ile
		195					200					205			
Asp	Ser	Leu	Asn	Glu	Lys	Lys									
	210					215									

<210> 7897

<211> 81

<212> PRT

<213> B.fragilis

<400> 7897

Cys Lys Ala Ser Lys Gln Lys Asp Lys Lys Phe Phe Ser Gly Lys Arg
 1 5 10 15
 Cys Ser Leu Leu Ile Leu Asn Asn Ala His Leu Tyr Ile Met Asn Gly
 20 25 30
 Ile Lys Val Gly Tyr Ser Ser His Gly Thr Trp Lys Lys Val Ile Asn
 35 40 45
 Arg Leu Leu Tyr Asn Phe Glu Pro Ser Asp Ser Ser Phe Phe Phe Ile
 50 55 60
 Ile Ser Pro Val Arg Val Val Val Leu Val Arg Glu Ala Asp Tyr Val
 65 70 75 80
 Lys

<210> 7898

<211> 133

<212> PRT

<213> B.fragilis

<400> 7898

Ser Phe His Ser Ile Met Lys Asn Thr Phe Cys Val Leu Ala Cys Phe
 1 5 10 15
 Phe Ile Thr Ile Phe Cys Gln Ala Gln Ser Val Glu Glu His Tyr Tyr
 20 25 30
 Phe Lys Asn Leu Ser Ile Arg Asn Gly Leu Ser Gln Asn Thr Val Asn
 35 40 45
 Ala Ile Leu Gln Asp Arg Lys Gly Phe Met Trp Leu Gly Thr Lys Asp
 50 55 60
 Gly Leu Asn Arg Tyr Asp Gly Leu Ser Phe Arg Lys Phe Lys His Asp
 65 70 75 80
 Ala Ala Asn Pro Arg Ser Ile Gly Thr Val Leu Ser Leu Arg Phe Thr
 85 90 95
 Lys Ile Ser Met Val Asn Ile Trp Ser Val Leu Met Gln Glu Tyr Ile
 100 105 110
 Phe Thr Ile Leu Arg Arg Arg Leu Leu Arg Asn Ser Ile Ala Arg Ala
 115 120 125
 Trp Arg Arg Gln Gly
 130

<210> 7899

<211> 127

<212> PRT

<213> B.fragilis

<400> 7899

Glu Ala Arg Phe Ile Ile Ser Leu Leu Met Trp Lys Glu Leu Leu Arg
 1 5 10 15
 Ile Val Lys His Lys Ile Asn His Ser Asn Lys Pro Arg Leu Met Lys
 20 25 30
 Arg Thr Lys Glu Asn Tyr Pro Ser Phe Asn Leu Phe Ser Ile Val Gly
 35 40 45
 Thr Trp Glu Ser Ile Asn Leu Asn Pro Thr Val Ile Ile Tyr Arg Asn
 50 55 60
 Asp Asn Asp Tyr Leu Leu Ser Ile Ile Tyr Val Ser Glu Thr Thr Lys
 65 70 75 80
 Gln Ala Ser Pro Ala Thr Tyr Glu Ile Gln Lys Glu Gly Ser Leu Tyr
 85 90 95
 Phe Ile Ala Pro Ala Pro Lys Arg Val Tyr Ile Asp Tyr Asp Pro Val
 100 105 110

Lys Asp Val Leu Asn Leu Ser Ser Leu Gly Asp Tyr Leu Arg Asn
 115 120 125

<210> 7900

<211> 107

<212> PRT

<213> B.fragilis

<400> 7900

Ser Asp Met Ser Thr Ile Glu Leu Thr Glu Trp Glu Leu Ala Ile Arg
 1 5 10 15
 Glu Gln Leu Ile Lys Ala Ala Ser Glu Gly Lys Thr Leu Tyr Tyr Ser
 20 25 30
 Asp Leu Val Lys Glu Lys Asp Val Ser Leu Val Arg Ser Leu Gly Thr
 35 40 45
 Val Leu Glu Arg Ile Thr Arg Tyr Asp Ile Glu Asn Lys Gln Pro Ile
 50 55 60
 Leu Ala Ser Ile Ala Val Leu Asn Ser Thr Gly Leu Pro Ser Glu Gly
 65 70 75 80
 Phe Phe Glu Leu Cys Asp Thr Leu Asp Ile Ser Ala Arg Leu Ser Asp
 85 90 95
 Leu Gln Gln Ser Cys Phe Glu Tyr Trp Lys Gln
 100 105

<210> 7901

<211> 203

<212> PRT

<213> B.fragilis

<400> 7901

Asn Ile Gln Ser Pro Thr Lys Lys Tyr Met Asp Lys Phe Ser Tyr Ala
 1 5 10 15
 Ile Gly Leu Gly Ile Gly Gln Asn Leu Leu Gly Met Gly Ala Lys Gly
 20 25 30
 Ile Ala Val Asp Asp Phe Ala Gln Ala Ile Lys Asp Val Leu Glu Gly
 35 40 45
 Asn Gln Thr Ala Ile Ser His Gln Glu Ala Arg Glu Ile Val Asn Lys
 50 55 60
 Tyr Phe Glu Glu Leu Glu Thr Lys Met Asn Ala Ala Asn Ile Glu Gln
 65 70 75 80
 Gly Lys Ala Phe Leu Glu Glu Asn Lys Lys Arg Pro Asn Val Val Thr
 85 90 95
 Leu Pro Ser Gly Leu Gln Tyr Glu Val Ile Thr Glu Gly Thr Gly Lys
 100 105 110
 Lys Ala Gln Ala Thr Asp Gln Val Lys Cys His Tyr Glu Gly Thr Leu
 115 120 125
 Ile Asp Gly Thr Leu Phe Asp Ser Ser Ile Lys Arg Gly Gln Pro Ala
 130 135 140
 Val Phe Gly Val Asn Gln Val Ile Pro Gly Trp Val Glu Ala Leu Gln
 145 150 155 160
 Leu Met Pro Glu Gly Ser Lys Trp Lys Leu Phe Ile Pro Ser Glu Leu
 165 170 175
 Ala Tyr Gly Ala Gln Gly Ala Gly Glu Met Ile Pro Pro His Ser Thr
 180 185 190
 Leu Val Phe Glu Val Glu Leu Ile Glu Val Leu
 195 200

<210> 7902

<211> 499

<212> PRT

<213> B.fragilis

<400> 7902

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Leu Lys Lys Ser Ile Ala Phe Ala Leu Leu Leu Arg Met Phe Tyr Leu
1      5      10      15
Cys Thr Thr Leu Tyr Phe Lys Gln Phe Thr Phe Met Ser Thr Glu Leu
      20      25      30
Phe Ser Thr Leu Pro Tyr Lys Val Ala Asp Ile Thr Leu Ala Asp Phe
      35      40      45
Gly Arg Lys Glu Ile Asp Leu Ala Glu Lys Glu Met Pro Gly Leu Met
      50      55      60
Ala Leu Arg Glu Lys Tyr Gly Glu Ser Lys Pro Leu Lys Gly Ala Arg
65      70      75      80
Ile Met Gly Ser Leu His Met Thr Ile Gln Thr Ala Val Leu Ile Glu
      85      90      95
Thr Leu Val Ala Leu Gly Ala Glu Val Arg Trp Cys Ser Cys Asn Ile
      100     105     110
Tyr Ser Thr Gln Asp His Ala Ala Ala Ile Ala Ala Ser Gly Val
      115     120     125
Ala Val Phe Ala Trp Lys Gly Glu Thr Leu Ala Asp Tyr Trp Trp Cys
      130     135     140
Thr Leu Gln Ala Leu Asn Phe Glu Gly Gly Lys Gly Pro Thr Val Ile
145     150     155     160
Val Asp Asp Gly Gly Asp Ala Thr Met Met Ile His Val Gly Tyr Glu
      165     170     175
Ala Glu Asn Asn Ala Ala Val Leu Asp Lys Glu Val His Ala Glu Asp
      180     185     190
Glu Ile Glu Leu Asn Ala Ile Leu Lys Lys Val Leu Ala Glu Asp Lys
      195     200     205
Glu Arg Trp His Arg Val Ala Ala Glu Val Arg Gly Val Ser Glu Glu
210     215     220
Thr Thr Thr Gly Val His Arg Leu Tyr Gln Met Gln Glu Glu Gly Lys
225     230     235     240
Leu Leu Phe Pro Ala Phe Asn Val Asn Asp Ser Val Thr Lys Ser Lys
      245     250     255
Phe Asp Asn Leu Tyr Gly Cys Arg Glu Ser Leu Ala Asp Gly Ile Lys
      260     265     270
Arg Ala Thr Asp Val Met Ile Ala Gly Lys Val Val Val Cys Gly
      275     280     285
Tyr Gly Asp Val Gly Lys Gly Cys Ser His Ser Met Arg Ser Tyr Gly
290     295     300
Ala Arg Val Leu Val Thr Glu Val Asp Pro Ile Cys Ala Leu Gln Ala
305     310     315     320
Ala Met Glu Gly Phe Glu Val Val Thr Met Glu Asp Ala Cys Lys Glu
      325     330     335
Gly Asn Ile Phe Val Thr Thr Thr Gly Asn Ile Asp Ile Ile Arg Ile
      340     345     350
Asp His Met Glu Gln Met Lys Asp Gln Ala Ile Val Cys Asn Ile Gly
      355     360     365
His Phe Asp Asn Glu Ile Gln Val Asp Ala Leu Lys His Tyr Pro Gly
370     375     380
Ile Lys Arg Val Asn Ile Lys Pro Gln Val Asp Arg Tyr Tyr Phe Pro
385     390     395     400
Asp Gly His Ser Ile Leu Leu Ala Asp Gly Arg Leu Val Asn Leu
      405     410     415
Gly Cys Ala Thr Gly His Pro Ser Phe Val Met Ser Asn Ser Phe Thr
      420     425     430
Asn Gln Thr Leu Ala Gln Ile Glu Leu Phe Asn Lys Lys Tyr Asp Ile

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435 440 445
 Asn Val Tyr Arg Leu Pro Lys His Leu Asp Glu Glu Val Ala Arg Leu
 450 455 460
 His Leu Glu Lys Ile Gly Val Lys Leu Thr Lys Leu Thr Pro Glu Gln
 465 470 475 480
 Ala Ala Tyr Ile Gly Val Ser Val Asp Gly Pro Tyr Lys Ala Asp His
 485 490 495
 Tyr Arg Tyr

<210> 7903
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 7903
 Lys Ile Phe Pro Ala Ile His Cys Gly Ile Lys Asp Asn Ala Tyr Leu
 1 5 10 15
 Cys Thr Leu Lys Glu Thr Phe Tyr Arg Ser Ile Ile Leu Leu Ile Met
 20 25 30
 Tyr Leu Asp Ala Ala Lys Lys Gln Glu Ile Phe Ser Lys Tyr Gly Lys
 35 40 45
 Ser Asn Thr Asp Thr Gly Ser Ala Glu Ala Gln Ile Ala Leu Phe Ser
 50 55 60
 Tyr Arg Ile Thr His Leu Thr Glu His Met Lys Leu Asn Arg Lys Asp
 65 70 75 80
 Tyr Ser Thr Glu Arg Ala Leu Thr Met Leu Val Gly Lys Arg Arg Ala
 85 90 95
 Leu Leu Asp Tyr Leu Lys Ala Lys Asp Ile Thr Arg Tyr Arg Asp Ile
 100 105 110
 Ile Lys Glu Leu Gly Leu Arg Lys
 115 120

<210> 7904
 <211> 532
 <212> PRT
 <213> B.fragilis

<400> 7904
 Lys Ser Val Leu Ser Val Val Lys Leu Lys Pro Asn Glu Leu Glu Thr
 1 5 10 15
 Asn Pro Arg Met Asn Gln Lys Ile Ile Tyr Ser Ser Ala Leu Leu Val
 20 25 30
 Gly Leu Gly Ser Pro Gln Ala Phe Ala His Lys Glu Lys Ala His Thr
 35 40 45
 Pro Gln Lys Pro Asn Ile Ile Phe Ile Met Cys Asp Asp Met Gly Tyr
 50 55 60
 Gly Asp Leu Gly Cys Tyr Gly Gln Pro Tyr Ile Ser Thr Pro Asn Ile
 65 70 75 80
 Asp Asn Met Ala Arg Glu Gly Met Arg Phe Thr Gln Ala Tyr Ala Gly
 85 90 95
 Ser Pro Val Ser Ala Pro Ser Arg Ala Ser Leu Met Thr Gly Gln His
 100 105 110
 Thr Gly His Cys Glu Val Arg Gly Asn Lys Glu Tyr Trp Thr Gln Ala
 115 120 125
 Ser Thr Val Met Tyr Gly Asp Asn Lys Glu Phe Ser Val Val Gly Gln
 130 135 140
 His Pro Tyr Asp Pro Glu His Val Ile Leu Pro Glu Ile Met Lys Asp
 145 150 155 160

Thr Cys Ser Ala Ile Gly Leu Thr Val Arg Leu Ser Leu Arg Thr Arg
 35 40 45
 Leu Thr Leu Ile Arg Leu Ala Leu Ile Arg Lys Pro
 50 55 60

<210> 7906

<211> 452

<212> PRT

<213> B.fragilis

<400> 7906

Phe Tyr Phe Thr Phe Asn Tyr Lys Ile Met Ser Ser Asn Ser Thr Asn
 1 5 10 15
 Ile Asp Pro Ala Ile Leu Thr Ser Ile Leu Gly Glu Lys Arg Ala Ser
 20 25 30
 Glu Lys Tyr Ala Lys Leu Gly Ile Lys Tyr Asn Pro Phe Pro Arg Ser
 35 40 45
 Gly Thr Thr Asn Ile Asn Gly Asn Asp Ile Tyr Asn Arg Phe Met Ile
 50 55 60
 Pro Ile Asp Pro Val Val Leu Gly Gln Leu Asn Met Phe Ile Ser Asn
 65 70 75 80
 Ser Leu Ala Asn Asn Glu Ile Asp Asn Thr Asp Lys Phe Ile Ser Ala
 85 90 95
 Thr Val Leu Gly Asn Tyr Gly Ser Gly Lys Thr Gln Leu Leu Met Tyr
 100 105 110
 Thr Arg Phe Leu Leu Asn Met Ile Ala Thr Ser Ser Asp Tyr Glu Ala
 115 120 125
 Thr Pro Tyr Val Ile Tyr Ile Asp Asn Pro Gly Val Ser Leu Leu Glu
 130 135 140
 Phe Ile Gly Asn Ile Ile Ala Arg Ile Gly Glu Glu Asn Leu Arg Lys
 145 150 155 160
 Tyr Leu Trp Asn Asn Ile Ile Asn Val Ile Asp Asn Glu Tyr Glu Tyr
 165 170 175
 Lys Asn Ile Leu Leu Pro Tyr Val Asn Asn Thr Ile Leu Leu Phe Asp
 180 185 190
 Thr Glu Asn Lys Asp Pro Phe Ala Ala Glu Asn Arg Val Ser Tyr Lys
 195 200 205
 Gln Phe Leu Thr Val Phe Thr Gln Asn Ile Thr Thr Thr Asp Lys Arg
 210 215 220
 Lys Lys Phe Asp Leu Glu Phe Arg Asn Leu Leu Lys Val Leu Asp
 225 230 235 240
 Tyr Tyr Thr Lys Asp Ser Val Val Ser Tyr Tyr Phe Tyr Glu Phe Ile
 245 250 255
 Ser Gly Asp Tyr Gly Val Asn Lys Thr Trp Glu Ala Leu Thr Ser Gly
 260 265 270
 Ser Leu Lys Gln Leu Lys Gly Lys Glu Ala Arg Val Ile Lys Tyr Ile
 275 280 285
 Val Lys Leu Val Lys Glu Gln Gly Phe Ser Asp Phe Phe Ile Leu Val
 290 295 300
 Asp Glu Phe Glu Asp Ile Thr Glu Gly Arg Leu Thr Lys Ser Gln Ile
 305 310 315 320
 Asp Asn Tyr Val Tyr Asn Leu Arg Thr Leu Leu Asp Glu Gln Arg Glu
 325 330 335
 Trp Cys Leu Met Phe Thr Met Thr Pro Leu Ala Leu Lys Lys Leu Arg
 340 345 350
 Ser Val Ser Pro Pro Leu Ala Asp Arg Ile Ser Ser Arg Glu Ile Trp
 355 360 365
 Leu Gln Asp Leu Asn Thr Glu Gln Ala Ile Ser Ile Val Lys Asn Tyr
 370 375 380

Met Thr Ile Val Glu His Asp Ser Leu Leu Pro Phe Thr Glu Asp Gly
 385 390 395 400
 Ile Ala Tyr Leu Val Asp Ile Val Asp Gly Asn Ile Arg Arg Phe Leu
 405 410 415
 Lys Met Cys Phe Arg Leu Ile Glu Glu Ala Ala Leu Thr Phe Thr Ser
 420 425 430
 Pro Asp Asn Lys Ile Asn Lys Ala Phe Ile Glu Ser Gln Asn Leu Leu
 435 440 445
 Glu Gln Glu Ser
 450

<210> 7907
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 7907
 Pro His Thr Thr Thr Thr Leu Pro Ala Ile Ile Thr Ser Val Ala Arg
 1 5 10 15
 Leu Met Pro Ser Ala Asn Asp Ser Arg Gln Pro Tyr Arg Leu Ser Asn
 20 25 30
 Leu Asp Leu Val Thr Glu Ser Phe Thr Leu Lys Ala Gly Asn Asn Asn
 35 40 45
 Leu Pro Ser Ser Cys Ile Trp Tyr Arg Arg Cys Thr Pro Val Val Val
 50 55 60
 Ser Ser Glu Thr Pro Arg Thr Ser Ala Ala Thr Arg Cys Gln Arg Ser
 65 70 75 80
 Leu Ser Ser Ala Ser Thr Phe Phe Ser Ile Ala Phe Asn Ser Ile Ser
 85 90 95
 Ser Ser Ala Cys Thr Ser Leu Ser Asn Thr Ala Ala Leu Phe Ser Ala
 100 105 110
 Ser

<210> 7908
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 7908
 Val Arg Ser Thr Ser Val Pro Phe Lys Ser Ser Ile Ile Thr Glu Phe
 1 5 10 15
 Phe Phe Thr Thr Val Ser Val Ser Asp Asp Glu Met Ile Pro Thr Ser
 20 25 30
 Val Thr Thr Pro Ile Met Asn Lys Thr Met Pro Asp Asn Thr Met Pro
 35 40 45
 Val Thr Val Ala Ser Val Asn Leu Lys Lys Ser Phe Ile Val His Ile
 50 55 60
 Val Phe Met Pro Ala Leu Leu Lys Leu Thr Lys Ile Asn Asn
 65 70 75

<210> 7909
 <211> 329
 <212> PRT
 <213> B.fragilis

<400> 7909
 Ile Tyr Arg Thr Met His Ile Asp Phe Ala Pro Pro Ser Lys Gly Thr
 1 5 10 15

Tyr Asn Asn Ala Gly Ser Ser Arg Gln Leu Ala Ser Tyr Met Glu His
 20 25 30
 Glu Asp Leu Glu Arg Met Glu Lys Gly Ile Tyr Thr Asp Gly Phe Phe
 35 40 45
 Asn Leu Val Asp Asp Asn Ile Tyr Lys Ser Met Val Ile Lys Asp Ile
 50 55 60
 Asp Ser Asn Ile Gly Gln Leu Leu Lys Thr Asp Ala Lys Phe Tyr Ala
 65 70 75 80
 Thr His Val Ser Pro Ser Glu Lys Glu Leu Arg Ala Met Gly Ser Thr
 85 90 95
 Glu Lys Glu Gln Ala Glu Ala Met Lys Arg Tyr Ile Arg Glu Val Phe
 100 105 110
 Ile Pro Glu Tyr Ala Lys Asn Phe Asn Lys Glu Leu Ser Ala Ser Asp
 115 120 125
 Ile Lys Phe Tyr Gly Lys Ile His Phe Asp Arg Asn Arg Ser Asp Asn
 130 135 140
 Gly Leu Asn Met His Cys His Leu Ile Ile Ser Arg Lys Asp Gln Ala
 145 150 155 160
 Asn Lys Lys Lys Leu Ser Pro Leu Thr Asn His Lys Asn Thr Lys Asn
 165 170 175
 Gly Val Ile Lys Gly Gly Phe Ala Arg Val Asn Leu Phe Gln Gln Ala
 180 185 190
 Glu Gln Gly Phe Asp Lys Leu Phe Gly Tyr Asp Arg Gln Gln Ser Glu
 195 200 205
 Ser Phe Asp Tyr His Asn Thr Met Lys Asn Gly Ser Ile Ser Glu Gln
 210 215 220
 Thr Lys Leu Gln Glu Gln Asp Ile Gln Ser Ser Asp Arg Lys Ala Gly
 225 230 235 240
 Ile Asn Gln Gly Ser Asn Gln Glu Asn Leu Leu Ser Ile Asn Leu Val
 245 250 255
 Asn Lys Arg Ile Asn Asn Gln Ala Ser Ser Ile Asp Thr His Ile Val
 260 265 270
 Ile Lys Gln Lys Asp Asn Ala Tyr Ser Thr Ser Ser Phe Asn Gln Glu
 275 280 285
 Thr Asn Gln Ile Phe Gly Ser Phe Ile Ser Ser Ala Ala Gln Asp Ile
 290 295 300
 Arg Ser Ser Ser Asn His Glu Asp Gln Thr Leu Lys Ser Lys Lys Lys
 305 310 315 320
 Lys Lys Lys Glu Arg Ile Asn Lys Leu
 325

<210> 7910

<211> 64

<212> PRT

<213> B.fragilis

<400> 7910

Leu Gln Met Thr Cys Leu Phe Asp Thr Thr Ser Lys Asn Tyr Trp Thr
 1 5 10 15
 Ser Phe Pro Asn Gly Phe Ser Ser Ser Tyr Asn Ser Pro Ile Leu Cys
 20 25 30
 Ile Glu Phe Asn Glu Glu Tyr Gly Val Ile Ile Gln Ile Ile His Leu
 35 40 45
 Ile Tyr Lys Glu Phe Leu Arg Lys Ser Leu Ser Leu His Val Pro Lys
 50 55 60

<210> 7911

<211> 682

<212> PRT

<213> B.fragilis

<400> 7911

Asn	Glu	Lys	Thr	Leu	Met	Lys	Met	Ile	Leu	Lys	Thr	Met	Val	Cys	Leu
1				5					10					15	
Ala	Val	Ala	Phe	Ser	Gly	Thr	Ala	Gly	Ala	Ala	Asn	Tyr	Ser	Pro	Glu
			20					25					30		
Lys	Ser	Gln	Ala	Ser	Leu	Ala	Leu	Lys	Val	Pro	Gly	Asn	Pro	Ala	Val
		35					40					45			
Glu	Tyr	Pro	Leu	Thr	Leu	Ser	Lys	Leu	Ser	Asp	Ser	Tyr	Phe	Asp	Tyr
	50					55					60				
Glu	Trp	Lys	Ala	Lys	Glu	Lys	Ile	Pro	Val	Thr	Ile	Phe	Gln	Gln	Ile
65					70					75					80
Ser	Thr	Val	Asp	Asp	Lys	Gln	Gln	Val	Thr	Val	Val	Leu	Thr	Ala	Met
				85					90					95	
Glu	Asp	Val	Tyr	Phe	Asn	Phe	Glu	Glu	Arg	Ile	Arg	Thr	Asp	Phe	Arg
			100					105					110		
His	Asp	Asp	Cys	Gln	Phe	Tyr	Leu	Pro	Gly	Phe	Trp	Tyr	Arg	Arg	Asn
		115					120						125		
Leu	Arg	Ser	Pro	Lys	Glu	Ala	Pro	Ser	Phe	His	Thr	Ser	Asp	Ser	Trp
	130					135					140				
Val	Val	Arg	Glu	Asp	Arg	Leu	Ser	Thr	Pro	Leu	Thr	Gly	Ile	Phe	Asp
145					150					155					160
Glu	Lys	Gln	Lys	Lys	Tyr	Met	Thr	Val	Val	Arg	Arg	Ala	Glu	Tyr	Ile
				165					170					175	
Gln	Asp	Ala	Leu	Ser	Thr	His	Lys	Glu	Gly	Glu	Val	Ile	Leu	Ser	Gly
			180					185					190		
Thr	Thr	Ser	Leu	Gly	Phe	Thr	Gly	Phe	Glu	Asn	Leu	Asp	Gly	Thr	Ala
		195					200						205		
Ala	Leu	Ala	Phe	Gly	Phe	Pro	Tyr	Lys	Glu	Ala	Pro	Lys	Thr	Tyr	Ile
	210					215					220				
Arg	Lys	Leu	Thr	Leu	Ala	Pro	Ser	Val	Thr	Ala	Phe	Gln	Leu	Leu	Lys
225					230					235					240
Lys	Gly	Glu	Ser	Ile	Ser	Leu	Thr	Trp	Glu	Ile	His	Glu	Gly	Lys	Gly
				245					250					255	
Glu	Asp	Phe	Ala	Glu	Phe	Val	Ser	His	Thr	Trp	Glu	Tyr	Cys	Tyr	Asp
			260					265					270		
Thr	Phe	Gln	Pro	Lys	Pro	Val	Glu	Thr	Asp	Tyr	Thr	Pro	Asp	Tyr	Thr
		275					280						285		
Lys	Glu	Ile	Leu	Ser	His	Phe	Phe	Ile	Glu	Ser	Phe	Val	Gly	Asp	Arg
	290					295					300				
Pro	Leu	Asn	Tyr	Asn	Ser	Gly	Val	His	Met	Arg	Thr	Asp	Asp	Cys	Gln
305					310					315					320
Asn	Thr	Gly	Ser	Ala	Glu	Val	Gly	Phe	Val	Gly	Arg	Val	Leu	Leu	Asn
				325					330					335	
Ala	Phe	Asn	Ala	Trp	Glu	Tyr	Gly	Trp	Lys	Asn	Asn	Arg	Ala	Asp	Leu
			340					345					350		
Lys	Glu	Asn	Ala	Ala	Lys	Val	Phe	Asp	Thr	Tyr	Leu	Val	Asn	Gly	Phe
		355					360					365			
Ser	Pro	Ala	Gly	Phe	Phe	Lys	Glu	Phe	Val	Asp	Tyr	Arg	Thr	Gly	Tyr
	370					375					380				
Glu	Glu	Thr	Val	Phe	Ser	Ile	Arg	Arg	Gln	Ser	Glu	Gly	Ile	Tyr	Ala
385					390					395					400
Ile	Phe	His	Tyr	Leu	Asp	Phe	Glu	Lys	Arg	Asn	Gly	Arg	Lys	His	Pro
			405						410					415	
Glu	Trp	Glu	Ala	Lys	Val	Arg	Lys	Met	Leu	Asp	Val	Phe	Leu	Gln	Leu
			420					425					430		
Gln	Asn	Pro	Glu	Gly	Ser	Phe	Pro	Arg	Lys	Phe	Lys	Asp	Asp	Leu	Ser
		435					440					445			

Ile Val Asp Lys Ser Gly Gly Ser Thr Pro Ser Ala Thr Leu Pro Leu
 450 455 460
 Val Met Gly Tyr Lys Tyr Phe Lys Asp Lys Arg Tyr Leu Glu Ser Ala
 465 470 475 480
 Lys Arg Thr Ala Glu Tyr Leu Glu Lys Glu Leu Ile Ser Lys Ser Asp
 485 490 495
 Tyr Phe Ser Ser Thr Leu Asp Ala Asn Cys Glu Asp Lys Glu Ala Ser
 500 505 510
 Leu Tyr Ala Ala Thr Ala Thr Tyr Tyr Leu Ala Leu Val Ser Gln Gly
 515 520 525
 Lys Glu Arg Glu His Tyr Thr Gly Leu Thr Lys Lys Ala Ala Tyr Phe
 530 535 540
 Ala Leu Ser Trp Tyr Tyr Leu Trp Asp Val Pro Phe Ala Pro Gly Gln
 545 550 555 560
 Met Leu Gly Asp Ile Gly Leu Lys Thr Arg Gly Trp Gly Asn Val Ser
 565 570 575
 Val Glu Asn Asn His Ile Asp Val Phe Ile Phe Glu Phe Ala Ser Ile
 580 585 590
 Leu Asn Trp Leu Ser Lys Glu Tyr Ser Glu Pro Arg Phe Ser Gln Phe
 595 600 605
 Ala Glu Val Ile Ser Thr Ser Met Arg Gln Leu Leu Pro Tyr Glu Gly
 610 615 620
 His Leu Cys Gly Val Ala Lys Cys Gly Tyr Tyr Pro Glu Val Val Gln
 625 630 635 640
 His Thr Asn Trp Asp Tyr Gly Lys Asn Gly Lys Gly Tyr Tyr Asn Asp
 645 650 655
 Ile Phe Ala Pro Gly Trp Thr Val Ala Ser Leu Trp Glu Leu Phe Ser
 660 665 670
 Pro Gly Arg Ala Glu Gln Phe Phe Leu Ile
 675 680

<210> 7912

<211> 323

<212> PRT

<213> B.fragilis

<400> 7912

Ile Arg Tyr Phe Lys Met Lys Thr Asp Phe Ile Gln Ile Ala Ser Tyr
 1 5 10 15
 Ala Ser Lys Ala Pro Ser Gly His Asn Thr Gln Pro Trp Lys Phe His
 20 25 30
 Ile Thr Asp Ser Thr Ile Thr Val Leu Pro Asn Leu Asn Val Ala Leu
 35 40 45
 Pro Val Val Asp Arg Asn Asn Arg Glu Leu Phe Ile Ser Leu Gly Cys
 50 55 60
 Ala Val Glu Asn Leu Cys Ile Ala Ala Ser Tyr Phe Gly Tyr Thr Thr
 65 70 75 80
 His Ile Ile Glu Cys Ser Ile Glu Ala Ile Ile Leu Glu Leu Thr Lys
 85 90 95
 Asn Asp Leu Thr Ile Glu Asp Pro Leu Phe His Gln Ile Glu Lys Arg
 100 105 110
 Gln Thr Asn Arg Asn Ile Tyr Asn Gly Asn Lys Ile Ser Asn Gly Ile
 115 120 125
 Leu Gln Gln Leu Gln Ser Ile Pro Lys Glu Asn Gly Ile Gln Phe Tyr
 130 135 140
 Phe Thr Glu Ile Asn Thr Pro Phe Ala Asn Thr Ile Thr Gln Tyr Ile
 145 150 155 160
 Met Lys Gly Asn Glu Ile Gln Met Ala Asp Ile Ala Phe Lys Asn Glu
 165 170 175

Leu Leu Ser Trp Met Arg Phe Asn Lys Lys Gln Val Glu Ala Thr His
 180 185 190
 Asn Gly Leu Ser Tyr Leu Val Phe Gly Asn Pro Pro Leu Pro Arg Ile
 195 200 205
 Leu Ala Arg Pro Ile Val Ser Leu Phe Leu Lys Pro Asn Ala Gln Asn
 210 215 220
 Lys Ser Asp Arg Lys Lys Ile Asp Ser Ser Ser His Phe Val Val Cys
 225 230 235 240
 Thr Thr Gln Arg Asp Thr Ile Glu Glu Trp Ile Asn Leu Gly Arg Thr
 245 250 255
 Leu Gln Arg Phe Leu Leu Lys Val Thr Glu Ile Gly Ile Ala Tyr Ala
 260 265 270
 Phe Leu Asn Gln Pro Cys Glu Val Ala Ala Leu Ala Phe Asp Leu Arg
 275 280 285
 Glu Lys Leu Pro Val Asn Lys Glu His Pro Thr Leu Ile Met Arg Ile
 290 295 300
 Gly Tyr Ala Lys Gln Ile Pro Tyr Ser Pro Arg Lys Lys Ile Glu Thr
 305 310 315 320
 Leu Leu Val

<210> 7913

<211> 261

<212> PRT

<213> B.fragilis

<400> 7913

Ile Cys Lys Ala Phe Phe His Val Ser Phe Glu Arg Trp Gly Val Arg
 1 5 10 15
 Pro Val Tyr Leu Lys Ile Lys Ala Ser Met Lys Asn Leu Val Val Leu
 20 25 30
 Ser Gly Ala Gly Met Ser Ala Glu Ser Gly Ile Ser Thr Phe Arg Asp
 35 40 45
 Ala Gly Gly Leu Trp Asp Arg Tyr Pro Val Glu Gln Val Ala Thr Pro
 50 55 60
 Glu Gly Tyr Ala Arg Asp Pro Glu Leu Val Thr His Phe Tyr Asn Glu
 65 70 75 80
 Arg Arg Lys Gln Leu Leu Glu Val Glu Pro Asn Arg Gly His Glu Leu
 85 90 95
 Leu Ala Glu Leu Glu Lys Asp Phe Arg Val Thr Ile Val Thr Gln Asn
 100 105 110
 Ile Asp Asn Leu His Glu Arg Ala Gly Ser Arg His Ile Ile His Leu
 115 120 125
 His Gly Glu Leu Thr Lys Val Cys Ser Ser Arg Asp Pro Asn Asn Pro
 130 135 140
 His Tyr Ile Lys Glu Leu Lys Pro Glu Glu Phe Glu Val Lys Ile Gly
 145 150 155 160
 Asp Leu Ala Gly Asp Gly Ser Gln Leu Arg Pro Phe Ile Val Trp Phe
 165 170 175
 Gly Glu Ser Val Pro Glu Ile Glu Thr Ala Ile Asp Trp Val Glu Lys
 180 185 190
 Ala Asp Val Phe Val Ile Ile Gly Thr Ser Met Asn Val Tyr Pro Ala
 195 200 205
 Ala Gly Leu Leu Asn Tyr Val Pro Arg Asn Ala Glu Ile Tyr Leu Ile
 210 215 220
 Asp Pro Lys Pro Val Asp Val His Ser Ser Arg Pro Ile His Val Ile
 225 230 235 240
 Gln Lys Gly Ala Ser Glu Gly Val Ala Glu Leu Arg Glu Arg Leu Leu
 245 250 255

Thr Thr Asn His Ala
260

<210> 7914

<211> 262

<212> PRT

<213> B.fragilis

<400> 7914

Lys Tyr Leu Tyr Cys Met Asn Lys Met Asn Val Ala Ile Ile Glu Asp
1 5 10 15
Glu Ile Pro Ala Ala Arg Leu Leu His Ser Met Val Ser Gly Leu Arg
20 25 30
Pro Gln Trp Glu Leu Thr Leu Ile Pro Gly Ser Val Asp Glu Ala Val
35 40 45
Ala Trp Phe Asp Glu His Pro His Pro Asp Leu Ile Phe Leu Asp Ile
50 55 60
His Leu Ala Asp Gly Asn Ala Phe Asp Phe Leu Ser Ala Ala His Pro
65 70 75 80
Ser Ser Val Ile Ile Phe Thr Thr Ala Tyr Asp Gln Tyr Ala Ile Arg
85 90 95
Ala Phe Thr Val Asn Ser Ile Asp Tyr Ile Leu Lys Pro Ile Asp Glu
100 105 110
Lys Arg Leu Ser Asp Ala Ile Thr Lys Tyr Glu Ser Leu Thr Asn
115 120 125
Ala Val Pro Arg Pro Glu Asp Tyr Leu Gly Thr Leu Phe Glu Ala Leu
130 135 140
Gln Tyr Lys Glu Lys Arg Tyr Arg Thr Arg Phe Leu Ile Ser Gly Val
145 150 155 160
Asp Arg Phe Trp Ser Leu Gln Val Ala Asp Ile Ala Tyr Phe Tyr Ser
165 170 175
Glu Asn Lys Val Thr Phe Ala Val Thr Arg Lys Gly Gln Glu His Ile
180 185 190
Leu Asp Leu Ser Leu Asn Lys Leu Met Glu Gln Leu Asp Pro Glu Arg
195 200 205
Phe Phe Arg Ala Asn Arg Gln Val Leu Val Cys Ile Asp Ala Ile Asp
210 215 220
His Ala Glu Pro Phe Phe Asn Gly Lys Ile Val Val Thr Val Arg Pro
225 230 235 240
Pro Tyr Lys Gln Lys Ile Thr Ile Ser Glu Glu Lys Leu Ser Ala Phe
245 250 255
Lys Leu Trp Leu Asn His
260

<210> 7915

<211> 353

<212> PRT

<213> B.fragilis

<400> 7915

Ile Leu Pro Tyr His Lys Ile Arg Tyr Met Arg Thr Glu Ile Ala Thr
1 5 10 15
Leu Gly Glu Phe Gly Leu Ile Lys His Leu Thr Glu Gly Ile Lys Leu
20 25 30
Glu Asn Glu Ser Ser Lys Tyr Gly Val Gly Asp Asp Ala Ala Val Leu
35 40 45
Ser Tyr Pro Ala Asp Lys Gln Val Leu Val Thr Thr Asp Leu Leu Met
50 55 60
Glu Gly Val His Phe Asp Leu Thr Tyr Thr Pro Leu Lys His Leu Gly

65					70					75				80	
Tyr	Lys	Ser	Ala	Val	Val	Asn	Phe	Ser	Asp	Ile	Tyr	Ala	Met	Asn	Gly
				85					90					95	
Thr	Pro	Lys	Gln	Ile	Thr	Ala	Ser	Leu	Ala	Leu	Ser	Lys	Arg	Phe	Ser
			100					105					110		
Val	Glu	Asp	Met	Asp	Glu	Phe	Tyr	Ser	Gly	Leu	Arg	Leu	Ala	Cys	Gln
		115					120					125			
Gln	Tyr	Lys	Val	Asp	Ile	Val	Gly	Gly	Asp	Thr	Thr	Ser	Ser	Leu	Thr
	130					135					140				
Gly	Phe	Ala	Ile	Ser	Ile	Thr	Cys	Ile	Gly	Glu	Ala	Asp	Lys	Asp	Lys
145					150				155						160
Val	Val	Tyr	Arg	Asn	Gly	Ala	Lys	Asp	Thr	Asp	Leu	Ile	Cys	Val	Ser
			165					170					175		
Gly	Asp	Leu	Gly	Ala	Ala	Tyr	Met	Gly	Leu	Gln	Leu	Leu	Glu	Arg	Glu
		180						185					190		
Lys	Ala	Val	Phe	Lys	Gly	Glu	Gln	Asp	Ala	Gln	Pro	Asp	Phe	Ser	Gly
	195						200				205				
Lys	Glu	Tyr	Leu	Leu	Glu	Arg	Gln	Leu	Lys	Pro	Glu	Ala	Arg	Lys	Asp
	210				215					220					
Ile	Ile	Glu	Lys	Leu	Ser	Ala	Ala	Asn	Ile	Val	Pro	Thr	Ser	Met	Met
225					230				235						240
Asp	Ile	Ser	Asp	Gly	Leu	Ser	Ser	Glu	Leu	Leu	His	Ile	Cys	Thr	Gln
			245					250					255		
Ser	Lys	Ala	Gly	Cys	Arg	Val	Tyr	Glu	Glu	His	Ile	Pro	Ile	Asp	Tyr
		260						265					270		
Gln	Thr	Ala	Val	Met	Ala	Glu	Glu	Phe	Asn	Met	Asn	Leu	Thr	Thr	Cys
	275						280					285			
Ala	Met	Asn	Gly	Gly	Glu	Asp	Tyr	Glu	Leu	Leu	Phe	Thr	Val	Pro	Ile
	290					295					300				
Ala	Asp	His	Glu	Lys	Val	Ser	Glu	Met	Glu	Gly	Val	Arg	Leu	Ile	Gly
305					310				315						320
His	Ile	Thr	Lys	Pro	Glu	Leu	Gly	Cys	Ala	Leu	Ile	Thr	Arg	Asp	Gly
			325					330					335		
Gln	Glu	Phe	Glu	Leu	Lys	Ala	Gln	Gly	Trp	Asn	Pro	Leu	Gln	Glu	Asn
		340						345					350		

Lys

<210> 7916

<211> 440

<212> PRT

<213> B.fragilis

<400> 7916

Lys	Ala	Asn	Tyr	Glu	Gly	Gly	Tyr	Arg	Ile	Asn	Ile	Leu	Ile	Phe	Ala
1				5				10						15	
Tyr	Ile	Lys	Lys	Ile	Lys	Met	Asp	Phe	Leu	His	Ser	Glu	Ile	Gly	Ser
		20					25					30			
Ala	Lys	Asp	Asn	Phe	Tyr	Ser	Pro	Val	His	Asn	Trp	Tyr	Lys	Phe	Thr
	35					40					45				
Ala	Gly	Phe	Ser	Tyr	Lys	Phe	Val	Glu	Ala	Ile	Leu	Glu	Gly	Glu	Lys
	50				55						60				
Asn	Ser	Gln	Asn	Ile	Val	Phe	Glu	Pro	Phe	Ala	Gly	Cys	Gly	Thr	Thr
65				70				75							80
Leu	Val	Ser	Ser	Gln	Lys	Cys	Gly	Val	Lys	Ala	Ile	Gly	Asn	Glu	Gly
			85					90					95		
Gln	Glu	Phe	Met	Leu	Asp	Ile	Ile	Lys	Ala	Lys	Leu	Tyr	Trp	Asn	Ile
		100					105					110			
Asp	Lys	Thr	Glu	Cys	Ile	Asn	Ser	Leu	Asn	Tyr	Ile	Asp	Ser	Tyr	Ile

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      115              120              125
Lys Glu His Leu Thr Asn Phe Ser Met Glu Glu Val His Pro Leu Leu
  130              135              140
Ser Thr Leu Tyr Asp Asn Glu Thr Leu Lys Val Leu Tyr Leu Thr Arg
  145              150              155              160
Asp Ser Leu Asp His Ile Ser Asn Asp Lys Ile Arg Leu Phe Leu Lys
      165              170              175
Leu Ala Leu Ser Gln Thr Met His Lys Val Gly Leu Tyr Pro Ile Ala
      180              185              190
Val Pro Tyr Ile Ser Arg Thr Lys Arg Met Ala Asn Ser Gly His Ala
      195              200              205
Phe Ala Arg Phe Gln Ser Ile Val Leu Gln Met Leu Glu Asp Ile Gly
      210              215              220
Pro Leu Gln Asn Ile Glu Gln Thr Ser Glu Ile Tyr Leu His Asp Ser
  225              230              235              240
Arg Phe Glu Asn Pro Asn Ile Gly Asp Ser Ile Cys Asn Tyr Cys Ile
      245              250              255
Thr Ser Pro Pro Tyr Leu Asn Asn Leu Asp Tyr Gly Glu Val Ser Lys
      260              265              270
Val His Thr His Phe Phe Gly Leu Thr Glu Asn Trp Asn Asp Ile Thr
      275              280              285
Gln Lys Val Arg Lys Asn Leu Val Thr Gly Ala Thr Thr His Tyr Arg
      290              295              300
Asp Ile Asp Phe Asp Ile Asn Ile Phe Lys Glu Asn Asp Phe Ser Lys
  305              310              315              320
Glu Asn Gln Leu Val Phe Asp Glu Leu Phe Thr Ser Tyr Ile Gln Ile
      325              330              335
Met Glu Ile Ala Lys Thr Arg Asn Gly Lys Lys Ser Phe Asn Ile Leu
      340              345              350
Met Met His Tyr Phe Glu Asp Met Tyr Tyr Val Leu Lys Glu Met Arg
      355              360              365
Arg Val Leu Lys Lys Gly Ser Lys Ala Tyr Leu Ile Leu Gly Asp Ser
      370              375              380
Ala Pro Tyr Gly Ile Tyr Ile Pro Thr Thr Glu Leu Leu Gly Arg Ile
  385              390              395              400
Ala Tyr Ser Val Gly Phe Asn Lys Tyr His Ile Tyr Lys Ile Arg Thr
      405              410              415
Arg Gly Thr Lys Trp Lys Ser Leu Lys Tyr Arg His Asn Ile Glu Leu
      420              425              430
Ser Glu Asn Val Leu Val Leu Glu
      435              440

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<210> 7917

<211> 167

<212> PRT

<213> B.fragilis

<400> 7917

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Thr Arg Ile Leu Tyr Met Lys Lys Lys Asn Glu Gln Trp Leu Arg Tyr
1              5              10              15
Ser Asn Arg Ala Leu Ser Gly Leu Leu Met Leu Phe Gly Phe Val Ser
      20              25              30
Cys Asp Asn Gly Gly Gly Asp Ile Pro Val Glu Tyr Gly Met Pro Ser
      35              40              45
Ala Lys Tyr Arg Val Lys Gly Lys Val Ile Asp Ala Asp Thr Gln Glu
      50              55              60
Pro Val Pro Gly Ile Glu Val Val Thr Gly Ala Val His Thr Gly Asp
  65              70              75              80
Gly Lys Glu Trp Leu Ser Tyr Pro Asp Thr Leu Ile Thr Asp Lys Asp

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<210> 7918
<211> 112
<212> PRT
<213> B.fragilis
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<210> 7919
<211> 232
<212> PRT
<213> B.fragilis
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<400>	7919														
Lys	Lys	Asp	Leu	Ser	Leu	Cys	Leu	Glu	Ile	Leu	Ser	Ile	Thr	Arg	Lys
1				5					10					15	
Thr	Met	Asn	Met	Asn	Lys	Lys	Ile	Met	Gln	Lys	Gly	Trp	Leu	Tyr	Glu
			20					25					30		
Tyr	Glu	Val	Gly	Glu	Glu	Tyr	Arg	Arg	Asn	Tyr	Asn	Cys	Glu	Leu	Thr
			35				40					45			
Asp	Val	Arg	Tyr	Val	Leu	Gly	Glu	Gln	Phe	Asp	Met	Asp	Lys	Gln	Ser
	50					55					60				
Ala	Leu	Ile	Cys	Ile	Gly	Ile	Asn	Pro	Ser	Met	Ala	Met	Pro	Asn	Phe
65				70						75					80
Leu	Asp	Pro	Thr	Leu	Lys	Arg	Val	Gln	Glu	Tyr	Ala	Lys	Arg	Ser	Gly
				85				90					95		
Glu	Tyr	Gly	Ala	Trp	Tyr	Met	Leu	Asn	Val	Tyr	Pro	Gln	Arg	Ala	Thr
			100					105					110		
Asn	Pro	Asn	Asn	Met	Asp	Thr	Asp	Asp	Asn	Tyr	Asn	Met	Glu	Ile	His
			115				120					125			
Leu	Arg	Asn	Leu	Val	Ala	Ile	Lys	Lys	Met	Leu	Ser	Thr	Ile	Asp	Asn
	130					135					140				
Ala	Asp	Val	Trp	Cys	Ala	Trp	Gly	Ala	Thr	Ile	Ser	Asp	Pro	Lys	Arg
145				150						155					160

Thr Tyr Leu Ser Asp Leu Leu Phe Gly Asn Glu Asn Lys Asn Ile Gln
 165 170 175
 Gly Ile Ile Gly Leu Phe Asn Gly Asn Tyr His Phe Lys Ala Tyr Gly
 180 185 190
 Ala Thr Thr Lys Gly Tyr Pro Lys His Pro Leu Leu Ile Gly Lys Gly
 195 200 205
 Ala Lys Leu Lys Thr Leu Asn Glu Val Glu Leu Lys Glu Leu Ser Asp
 210 215 220
 Arg Ile Thr Asn Ile Ile Lys Lys
 225 230

<210> 7920
 <211> 180
 <212> PRT
 <213> B.fragilis

<400> 7920
 Gln Ser Ile His Arg Lys Ser Lys Phe Ile Arg Thr Gly Ile Ile Met
 1 5 10 15
 Glu Ser Trp Ser Gln Thr Pro Ile Lys Asp Phe Lys Val Ser Phe Phe
 20 25 30
 Leu Asp Thr Asn Ile Leu Cys Tyr Leu Val Asp Ser Thr Tyr Pro Asn
 35 40 45
 Leu Asn Lys Phe Ile Asn Tyr Leu Gly Asn Asn Pro Phe Ser Asp Val
 50 55 60
 Ile Ser Ser Asp Tyr Val Leu Leu Glu Phe Ile Gly Ile Arg Lys Arg
 65 70 75 80
 Glu His Tyr Leu Arg Ala Val Leu Lys Lys Gly Glu Gln Asp Gly Gln
 85 90 95
 Ser Val Asn Leu Ser Ser Leu Leu Lys Phe His Asn Gln Tyr Ser Ala
 100 105 110
 Pro Glu Val Asp Phe Ile Ser Ile Ile Pro Gln Ile Lys Glu Ser Val
 115 120 125
 Asp His Asp Glu Glu Glu Ile Thr Thr Gln Tyr Asn Ile Asp Phe Asn
 130 135 140
 Cys Lys Phe His Ile Asp Leu Phe Glu Pro Thr Lys Asn Ile Cys Leu
 145 150 155 160
 Val Ser Leu Lys Ser Ala Thr Ile Ile Gln Tyr Thr Ile Lys Gly Arg
 165 170 175
 Phe Met Ser Arg
 180

<210> 7921
 <211> 613
 <212> PRT
 <213> B.fragilis

<400> 7921
 Ile Ser Thr Gln Leu Phe Ile Phe Val Ser Phe Lys Arg Ala Gly Ile
 1 5 10 15
 Lys Thr Ile Cys Thr Met Lys Asp Phe Lys Phe Thr Leu Ala Thr
 20 25 30
 Val Thr Gly Ile Val Leu Ser Gly Ile Val Leu Phe Ile Ile Gly Val
 35 40 45
 Val Thr Leu Val Gly Ile Ile Ser Ser Ser Asp Thr Glu Thr Val Val
 50 55 60
 Lys Lys Asn Ser Val Met Met Leu Asp Leu Lys Gly Thr Leu Val Glu
 65 70 75 80
 Arg Thr Gln Glu Ser Leu Glu Gly Leu Leu Gly Lys Phe Thr Gly Glu

Ile Leu Ser Thr Leu Leu Asp Val His Pro Gly Asn Tyr Val Glu Ser
 565 570 575
 Gln Val Leu Lys Ser Gln Leu Gly Asp Tyr Tyr Lys Asp Phe Ser Leu
 580 585 590
 Leu Lys Asn Ile Lys Glu Arg Ala Met Ile Gln Ala Arg Val Pro Phe
 595 600 605
 Glu Leu Asn Val Lys
 610

<210> 7922

<211> 1178

<212> PRT

<213> B.fragilis

<400> 7922

Ser Tyr Asn Gln Lys Met Lys Asp Met Arg Leu Cys Phe Ser Val Cys
 1 5 10 15
 Asn Arg Arg Phe Leu Thr Gly Val Ile Met Phe Met Leu Leu Tyr Pro
 20 25 30
 Met Ser Val Phe Ala Val Gln Gly Gln Ile Ala Val Gln Gly Lys Ala
 35 40 45
 Met Ser Ile Lys Gln Ala Ile Gln Val Ile Glu Lys Asn Ser Lys Tyr
 50 55 60
 Thr Phe Phe Tyr Lys Ala Ala Asp Leu Ser Asn Ala Lys Ile Arg Asp
 65 70 75 80
 Ile His Cys Glu Gly Ser Ile Glu Glu Val Leu Asn Val Leu Phe Lys
 85 90 95
 Asp Ser Gly Ile Ser Tyr Val Ile Lys Asp Asn Glu Val Ile Leu Lys
 100 105 110
 Ser Thr Pro Val Val Val Ala Thr Pro Gln Gln Ser Asn Lys Ile Val
 115 120 125
 Val Lys Gly Asn Ile Arg Asp Thr Leu Gly Glu Ser Val Ile Gly Ala
 130 135 140
 Thr Ile Met Glu Lys Asn Asn Ala Gln Asn Gly Ser Ile Ser Asp Ile
 145 150 155 160
 Asn Gly Asp Phe Ser Leu Ser Val Ser Pro Gly Ala Val Ile Val Ile
 165 170 175
 Ser Tyr Ile Gly Tyr Val Thr Gln Glu Leu Lys Ala Ile Ala Gly Ala
 180 185 190
 Pro Leu Lys Val Val Leu Lys Asp Asp Ser Arg Thr Leu Asp Glu Val
 195 200 205
 Val Val Val Gly Phe Gly Ser Gln Lys Lys Ala Asn Leu Thr Gly Ala
 210 215 220
 Val Ser Ser Ile Lys Met Asp Glu Ile Ile Gly Asp Arg Pro Ile Met
 225 230 235 240
 Thr Ala Ser Asp Ala Leu Gln Gly Thr Val Pro Gly Leu Leu Val Ser
 245 250 255
 Asn Ser Gly Asn Ala Pro Gly Ser Gly Lys Ser Phe Gln Leu Arg Gly
 260 265 270
 Ala Tyr Ser Val Gly Ile Lys Asn Ser Asp Gly Ser Tyr Gly Ala Asn
 275 280 285
 Val Ala Pro Leu Ile Leu Ile Asp Asn Val Glu Gly Ser Leu Asp Met
 290 295 300
 Leu Asn Pro Glu Asp Ile Glu Thr Val Thr Val Leu Lys Asp Ala Ala
 305 310 315 320
 Ser Ala Ala Ile Tyr Gly Ala Arg Ala Ala Gly Gly Val Val Leu Val
 325 330 335
 Thr Thr Lys Arg Pro Lys Glu Ala Thr Ala Phe Arg Leu Asn Tyr Asn
 340 345 350

Asn	Asn	Phe	Gly	Phe	Ala	Thr	Ala	Thr	Asn	Leu	Pro	Lys	Gln	Ala	Ser
		355					360					365			
Leu	Met	Asp	Tyr	Leu	Gln	Ala	Tyr	Gln	Asp	Gly	Gly	Tyr	Ser	Asp	Ala
	370					375					380				
Tyr	Trp	Ser	Tyr	Gly	Ser	Pro	Ser	Val	Ser	Lys	Trp	Lys	Glu	Tyr	Leu
385					390					395					400
Thr	Gln	Tyr	Arg	Gln	Asp	Pro	Ser	Ser	Ile	Lys	Thr	Val	Gly	Asp	Gly
				405					410					415	
Ile	Phe	Ala	Asp	Thr	Asp	Gly	Ala	Leu	Tyr	Tyr	Leu	Asn	Glu	His	Asp
			420					425					430		
Pro	Tyr	Lys	Asn	Phe	Met	Glu	Thr	Ser	Phe	Gln	Met	Asn	His	Asn	Leu
		435						440					445		
Ser	Val	Ser	Gly	Gly	Thr	Asp	Lys	Leu	Arg	Tyr	Arg	Met	Ser	Ala	Gly
	450					455					460				
Tyr	Val	Ser	Thr	Asp	Gly	Val	Leu	Ile	Thr	Asp	Lys	Asp	Thr	Tyr	Glu
465					470					475					480
Arg	Leu	Asn	Ile	Asn	Ser	Tyr	Ile	Ser	Ala	Asp	Ile	Thr	Lys	Trp	Phe
				485					490						495
Thr	Gln	Glu	Leu	Thr	Met	Ser	Tyr	Ala	Arg	Thr	Asn	Gln	Ser	Gln	Pro
			500					505						510	
Asn	Ser	Gly	Leu	Gly	Ser	Met	Phe	Gly	Ser	Asn	Gln	Val	Ser	Tyr	Gln
		515						520					525		
Pro	Glu	Gly	Asn	Met	Pro	Ser	Asp	Val	Cys	Ser	Thr	Ile	Ser	Gln	Asp
	530					535					540				
Leu	Pro	Phe	Asn	Thr	Pro	Arg	Asn	Gln	Val	Leu	Leu	Ala	Asn	Lys	Trp
545					550					555					560
Lys	Lys	Ser	Tyr	Asp	Asn	Pro	Arg	Val	Phe	Val	Lys	Ser	Ile	Leu	Lys
				565					570					575	
Pro	Phe	Lys	Gly	Phe	Glu	Ala	Val	Phe	Glu	Tyr	Thr	Phe	Asp	Lys	Asn
			580					585					590		
Met	Tyr	Asp	Tyr	Asn	Phe	Tyr	Thr	Gly	Lys	Thr	Gln	Tyr	Thr	Asp	Ile
		595					600					605			
Gln	Gly	Gly	Asn	Asn	Ile	Trp	Asn	Ala	Ala	Lys	Asp	Tyr	Leu	Gln	Lys
	610					615					620				
Glu	Lys	Gln	Phe	Thr	Asp	Tyr	Asn	Ala	Phe	Asn	Ile	Tyr	Gly	Thr	Tyr
625					630					635					640
Lys	Phe	Asp	Leu	Asn	Lys	Asp	His	His	Phe	Ser	Val	Met	Ala	Gly	Phe
				645					650					655	
Asn	Gln	Glu	Ser	Lys	Tyr	Thr	Glu	Gly	Val	Asn	Val	Leu	Ser	Tyr	Asn
			660					665					670		
Gln	Ala	Val	Val	Glu	Val	Pro	Ala	Leu	Gly	Ser	Gly	Thr	Gly	Asp	Leu
		675					680					685			
Lys	Ala	Thr	Asp	Ser	Tyr	Asn	Glu	Tyr	Ser	Val	Arg	Gly	Gly	Phe	Phe
	690					695					700				
Arg	Val	Asn	Tyr	Asn	Tyr	Met	Asp	Lys	Tyr	Leu	Leu	Glu	Val	Asn	Gly
705					710					715					720
Arg	Tyr	Asp	Gly	Ser	Ser	Lys	Phe	Pro	Lys	Asp	Ser	Arg	Phe	Gly	Phe
			725						730					735	
Phe	Pro	Ser	Val	Ser	Leu	Gly	Trp	Asn	Val	Ala	Gln	Glu	Lys	Phe	Met
			740					745					750		
Glu	Val	Thr	Arg	Asn	Tyr	Ile	Asp	Gly	Leu	Lys	Ile	Arg	Ala	Ser	Tyr
		755					760					765			
Gly	Val	Ile	Gly	Asn	Gln	Asn	Val	Val	Asn	Tyr	Ala	Tyr	Phe	Pro	Thr
	770					775					780				
Met	Ser	Val	Ser	Asn	Lys	Tyr	Asn	Gly	Trp	Leu	Ser	Gly	Gly	Asp	Tyr
785					790					795					800
Val	Thr	Ala	Ile	Asn	Ser	Leu	Pro	Asn	Leu	Val	Ser	Thr	Ser	Phe	Thr
			805						810					815	
Trp	Glu	Lys	Val	Ala	Thr	Thr	Asp	Ile	Gly	Leu	Asp	Leu	Asn	Met	Phe

820				825				830							
Gly	Asn	Arg	Met	Asn	Val	Val	Phe	Asp	Trp	Tyr	Gln	Arg	Asp	Thr	Lys
835				840				845							
Gly	Met	Leu	Ala	Pro	Gly	Met	Gln	Leu	Pro	Ala	Val	Val	Gly	Ala	Ser
850				855				860							
Ser	Pro	Phe	Gln	Asn	Thr	Ala	Asp	Met	Arg	Thr	Arg	Gly	Trp	Glu	Leu
865				870				875				880			
Ala	Val	Asn	Trp	Arg	Asp	Arg	Ile	Gly	Lys	Phe	Asn	Tyr	Arg	Val	Gly
885				890				895							
Phe	Asn	Leu	Ser	Asp	Ser	Tyr	Ser	Glu	Ile	Thr	Lys	Tyr	Asp	Asp	Asn
900				905				910							
Ala	Ala	Ser	Lys	Leu	Leu	Ser	Asn	Phe	Tyr	Pro	Gly	Gln	Arg	Leu	Gly
915				920				925							
Glu	Ile	Trp	Gly	Tyr	Glu	Val	Asp	Gly	Phe	Tyr	Thr	Val	Asp	Asp	Phe
930				935				940							
Val	Asp	Thr	Asn	Ser	Trp	Lys	Leu	Lys	Asp	Gly	Val	Ala	Ser	Ile	Lys
945				950				955				960			
Gly	Val	Ser	Pro	Arg	Pro	Gly	Asp	Leu	Lys	Phe	Lys	Asn	Leu	Arg	Asp
965				970				975							
Asp	Asp	Lys	Ser	Thr	Asn	Gln	Ile	Asp	Ser	Gly	Asp	Gly	Thr	Leu	Asp
980				985				990							
Asn	Pro	Gly	Asp	Gln	Lys	Val	Ile	Gly	Asn	Ser	Leu	Pro	Lys	Tyr	Leu
995				1000				1005							
Tyr	Gly	Ile	Thr	Leu	Gly	Ala	Asn	Tyr	Lys	Gly	Phe	Asp	Leu	Asn	Ile
1010				1015				1020							
Met	Met	Gln	Gly	Thr	Gly	Gln	Arg	Asp	Ala	Trp	Ile	Ala	Asn	Asn	Leu
1025				1030				1035				1040			
Val	Phe	Pro	Met	Tyr	Ile	Tyr	Ser	Val	Asn	Asp	Ile	Lys	Tyr	Gln	Pro
1045				1050				1055							
Leu	Phe	Asp	Gly	Leu	Thr	Asp	Tyr	Trp	Arg	Pro	Val	Asp	Ala	Ala	Asn
1060				1065				1070							
Gly	Asp	Tyr	Thr	Ala	Val	Asn	Pro	Asn	Ala	Lys	Tyr	Pro	Arg	Met	Tyr
1075				1080				1085							
Gly	Gln	Asn	Pro	Thr	Val	Gly	Ser	Asn	Tyr	Gly	Arg	Lys	Thr	Asp	Lys
1090				1095				1100							
Tyr	Leu	Ser	Asn	Ala	Ala	Tyr	Phe	Arg	Ile	Lys	Asn	Val	Thr	Leu	Ser
1105				1110				1115				1120			
Tyr	Thr	Val	Pro	Lys	Thr	Trp	Ile	Ser	Arg	Ile	Gly	Leu	Asn	Gln	Leu
1125				1130				1135							
Lys	Gly	Phe	Val	Ser	Val	Glu	Asn	Leu	Ala	Thr	Phe	Ser	Ser	Leu	Pro
1140				1145				1150							
Ser	Gly	Ile	Asp	Pro	Glu	Thr	Leu	Ser	Trp	Asn	Tyr	Pro	Ala	Phe	Arg
1155				1160				1165							
Thr	Val	Ser	Phe	Gly	Ile	Asn	Phe	Thr	Leu						
1170				1175											

<210> 7923

<211> 656

<212> PRT

<213> B.fragilis

<400> 7923

Thr	His	Asn	Gln	Glu	Leu	Lys	Met	Lys	Lys	Ile	Tyr	Leu	Ser	Leu	Ala
1			5						10				15		
Ile	Leu	Ala	Gly	Ile	Gly	Leu	Ala	Gly	Cys	Asn	Asp	Ser	Phe	Leu	Glu
		20						25				30			
His	Ala	Pro	Val	Thr	Ser	Leu	Thr	Glu	Asn	Asn	Ala	Phe	Arg	Ser	Tyr
	35						40					45			
Asp	Asn	Phe	Lys	Ser	Phe	Ala	Trp	Pro	Cys	Tyr	Glu	Ile	Phe	Lys	Asp

50	55	60
Asn Asn Ile Ala Asn Thr Ile Asn Gly Thr Gly Gln Gly Ser Cys Tyr		
65	70	75
Ala Gly Asp Met Asn Ala Gly Tyr Leu Glu Ser Arg Ala Asn Glu Ser		80
	85	90
Gly Asn Asp Tyr Ala Phe Gly Arg Val Gln Ser Val Ala Ser Gly Asn		95
	100	105
Gly Trp Gly Phe Ser Gly Thr Phe Arg Arg Ala Asn Ile Leu Leu Ala		110
	115	120
Asn Ile Asp Lys Ser Glu Met Thr Asp Ala Glu Lys Asp His Trp Arg		125
	130	135
Ala Val Gly Tyr Phe Phe His Ser Tyr Trp Tyr Met Glu Leu Ile Asn		140
	145	150
Arg Phe Gly Ala Val Pro Trp Val Asn Thr Ala Leu Asn Glu Asn Ser		155
	165	170
Pro Glu Ala Tyr Gly Pro Arg Val Asp Arg Glu Ile Val Ala Asp Ser		175
	180	185
Val Leu Asn Arg Leu Lys Trp Ala Glu Ala Asn Ile Gly Asp Phe Glu		190
	195	200
Lys Gln Asp Gly Ala Asn Thr Ile Asn Arg Asp Cys Ile Arg Ala Ala		205
	210	215
Ile Ser Arg Phe Ala Leu Arg Glu Ala Thr Trp Arg Lys Tyr His Gly		220
	225	230
Ile Asp Gly Ala Gln Lys Phe Phe Asp Glu Cys Ile Arg Val Ser Arg		235
	245	250
Leu Leu Met Asn Asp Tyr Pro Thr Leu Tyr Tyr Gly Thr Asp Gly Gln		255
	260	265
Pro Ala Ala Gly Tyr Gly Glu Met Trp Thr Thr Glu Asp Leu Gly Lys		270
	275	280
Val Pro Gly Val Ile Leu Tyr Met Glu Phe Val Gln Asp Ile Lys Met		285
	290	295
Ala Asn Phe Ser Ala Leu Glu His Met Asp Ser His Asn Val Glu Met		300
	305	310
Asn Gln His Thr Val Asp Leu Tyr Leu Cys Lys Asp Gly Lys Pro Ile		315
	325	330
Ala Thr Ser Ala Asn Tyr His Gly Asp Lys Thr Pro Tyr Ala Thr Phe		335
	340	345
Arg Asp Arg Asp Pro Arg Leu Tyr His Val Val Met Pro Pro Tyr Lys		350
	355	360
Val Lys Ala Lys Val Lys Thr Lys Glu Asp Pro Arg Thr Trp Asp Tyr		365
	370	375
Thr Asp Asp Pro Ala Asp Arg Glu Tyr Ile Asp Ile Met Gly Pro Asn		380
	385	390
Glu Ser Cys Asp Asn Pro Gly Ile Gly Met Lys Arg Leu Pro Gly Gln		395
	405	410
Asn Trp Ser Ala Ser Leu Val Pro Ser Ser Pro Asn Phe Met Gly Gly		415
	420	425
Ile Gly Ala Thr Gly Phe Val Arg Ser Arg Ser Gly Tyr Tyr Phe Trp		430
	435	440
Lys Asn Trp Ser Asn Trp Glu Thr Asn Arg Asn Gly Gly Val Thr Leu		445
	450	455
Asn Thr Ser Asp Lys Pro Ile Phe Lys Ile Glu Glu Val Leu Leu Asn		460
	465	470
Tyr Ala Glu Ala Met Cys Glu Thr Gly Gln Phe Thr Gln Ala Val Ala		475
	485	490
Asp Glu Ser Ile Asn Lys Leu Arg Arg Arg Ala Gly Val Ala Asp Met		495
	500	505
Lys Val Ala Asp Ile Asp Asp Ser Phe Asp Pro Asn Arg Gly Arg Tyr		510
	515	520
		525

Tyr Pro Lys Gly Asn Glu Gln Gly Val Leu Val Asp Pro Val Leu Trp
 530 535 540
 Glu Val Arg Arg Glu Arg Ile Val Glu Leu Met Gly Glu Gly Phe Gly
 545 550 555 560
 Phe Tyr Asp Ile Arg Arg Trp Arg Met Ala Pro Trp Phe Leu Asn Arg
 565 570 575
 Gln Phe Lys Gly Met Trp Met Thr Lys Asp Lys Phe Arg His Gly Ala
 580 585 590
 Gln Phe Leu Leu Asn Glu Thr Thr Gly Gly Pro Asp Pro Ala Asp Gly
 595 600 605
 Ala Met Thr Glu Gly Tyr Ile Tyr Leu Gln Pro Asp Pro Ile Lys Ala
 610 615 620
 Gly Glu Gly Trp Gln Glu Arg Tyr Tyr Leu Tyr Glu Val Pro Thr Gln
 625 630 635 640
 Glu Ile Ile Leu Asn Pro Ala Leu Ala Pro Asn Asn Pro Gly Trp Glu
 645 650 655

<210> 7924
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 7924
 Leu Gln Ser Gln Arg Arg Gln His Thr Thr Ser Ile Ala Gly Ser Tyr
 1 5 10 15
 Thr Thr Val Thr Thr Asn Ala Ile Ser Gln Thr Asn Phe Met Gln Lys
 20 25 30
 Glu Ile Arg Leu Gln Glu Phe Gln Phe Phe Arg Gln Arg Tyr Gln Cys
 35 40 45
 Phe Ile Leu Thr Leu Gln Asn Ile Thr Val Tyr Thr Gly Gln Met Leu
 50 55 60
 Gly Glu Met Asn Ser Ile Thr Arg Val Ile Phe Tyr Phe Ser Asn Gln
 65 70 75 80
 Arg Ile Glu Thr Ile Lys Gln Lys Met Gly Ile Gln Leu Thr Leu
 85 90 95

<210> 7925
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7925
 Lys Asn Asn His Ile Val Leu Met Leu Leu Lys Ala Val Leu Lys Asn
 1 5 10 15
 Asp Leu Ile Gly Leu Ile Met Leu Arg Met Ala Phe Ser Asp Phe Gly
 20 25 30
 His Ile Leu Ser Glu Lys Asp Ile Leu Asn Met Lys Ile His Leu Tyr
 35 40 45
 His Phe Tyr Met His Gln Asn Glu Lys Arg Leu Tyr Phe Leu Phe Glu
 50 55 60
 Thr Asn
 65

<210> 7926
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7926

Arg Ile Asp Gln Asn Tyr Tyr Leu Ala Gln Asn Leu Phe Leu Ser Ser
 1 5 10 15
 Leu Leu Leu Phe Leu Ile Val Ile Arg Tyr Ile Cys Ser Tyr Gly Phe
 20 25 30
 Tyr Leu Ala Leu Gly Lys Gly Val Leu Ala Pro Val Ile Arg Gly Leu
 35 40 45
 Ser Pro Phe Gln Cys Arg Ser Ala Gln Val Leu Ile Pro Phe
 50 55 60

<210> 7927

<211> 375

<212> PRT

<213> B.fragilis

<400> 7927

Arg Met Lys Gln Leu Tyr Leu Phe Ile Leu Ile Val Phe Cys Cys Met
 1 5 10 15
 Gly Cys Gln Arg Asn Thr Leu Arg Gly Pro Ile Pro Thr Ile Ile Met
 20 25 30
 His Pro Asp Ser Cys Leu Lys Ser Leu Asp Ile Ser Val Met Met Lys
 35 40 45
 Asp Ser Ile Glu Val Ile Lys Leu Glu Thr Thr Asp Ser Cys Leu Ile
 50 55 60
 Gly Phe Ile Asn Lys Ile Ser Phe Thr Asp Lys His Ile Leu Val Ser
 65 70 75 80
 Asp Ala Arg Val Ser Gln Lys Ile Tyr Leu Phe Asp Lys Gly Gly Lys
 85 90 95
 Phe Ile Arg Tyr Ile Ser Asn Lys Gly Thr Gly Pro Gly Glu Tyr Ser
 100 105 110
 Val Ile Gly Asp Phe Thr Ile Lys Gly Asp Ser Val Phe Ile Gln Asp
 115 120 125
 Tyr Tyr Gln Asn Lys Tyr Val Ile Tyr Asp Met Val Ala Asn Glu Ile
 130 135 140
 Lys Asp Asp Ile Pro Tyr Lys Thr His His Ser Gly Val Val Ala Leu
 145 150 155 160
 Asp Asn Tyr Leu Tyr Phe Ile Ser Asn Tyr Phe Thr Ser Pro Ile Gly
 165 170 175
 Asp Tyr Asn Cys Trp Arg Tyr Asp Leu Ser Thr Arg Lys Thr Glu Gly
 180 185 190
 Tyr Leu Pro Phe Thr Val Asp His Ile Ala Asn Gln Pro Ala Trp Thr
 195 200 205
 Ile Asn His Pro Cys Gly Gln Ile Asp Lys Leu Lys Ser Phe Ala Tyr
 210 215 220
 Tyr Arg Ser Asn Asp Thr Ile Tyr Gln Ile Asp Lys Leu Thr Val Ser
 225 230 235 240
 Pro Gln Cys Val Ile His Phe Pro Asn Ser Gly Asp Arg Thr Ser Ser
 245 250 255
 Thr Glu Gly Gly His Ile Ser Gly Ile Val His Leu Gln Gln Ser Val
 260 265 270
 Gly Tyr Ile Leu Gly Thr Tyr Thr Glu Gly Lys Gly Leu Arg Tyr Phe
 275 280 285
 Leu Ile Asp Lys Arg Asn Tyr Ser Ser Gln Met Gly Lys Leu Leu Arg
 290 295 300
 Phe Asn Asn Leu Asp Arg Lys Ser Ile Asn Asn Glu Phe Phe Ile Glu
 305 310 315 320
 Asp Asn Tyr Leu Ile Phe Trp Asp Thr Met Gln Ser Leu Lys Leu Trp
 325 330 335
 Arg Arg Tyr Phe Asp Lys Ala Glu Phe Thr Asn Pro Ala Asp Lys Gln
 340 345 350

4204 7927 375 PRT B.fragilis 7927

Gln Arg Lys Val Tyr Ala Leu Leu Pro Asn Ser Phe Cys Ile Ser Asp
 385 390 395 400
 Val Tyr Asp Leu Val Met Ala Lys Ala Asp Phe Thr Lys Asp Gln Leu
 405 410 415
 Lys Lys Phe Val Arg Val Arg Asp Tyr Phe Val Arg Ala Ser Lys Gly
 420 425 430
 His Tyr Val Lys Lys Tyr Glu Asp Leu Ser Asp
 435 440

<210> 7929

<211> 1251

<212> PRT

<213> B.fragilis

<400> 7929

Ser Thr Gln His Trp Asn Ser Phe Ile Thr Ser Leu Tyr Glu Asp Phe
 1 5 10 15
 Asn Gly Lys His Leu Val Gly Thr Asp Ala Gly Val Tyr Ile Tyr Tyr
 20 25 30
 Pro Glu Lys Glu Ala Phe Glu Glu Phe Asp Cys Gln Ser Leu Glu Lys
 35 40 45
 Thr Arg Ile Glu Arg Ser Val Ser Met Ile Ala Gly Asp Lys Gln Gly
 50 55 60
 Arg Val Trp Ile Ala Val Glu Ala Gln Gly Met Phe Cys Tyr Asp Ala
 65 70 75 80
 Arg Gln Lys Leu Leu Arg Asn Tyr Pro Leu Ser Glu Ile Ser Ser Asn
 85 90 95
 Ile Lys Cys Phe Thr Phe Asp Ser Gly Gly Thr Leu Trp Leu Gly Phe
 100 105 110
 Tyr Gly Asp Gly Leu Tyr Tyr Ser Lys Asp Asn Leu Ala Thr Val His
 115 120 125
 Pro Tyr Gly Ser Pro Glu Asp Gly Lys Arg Glu Phe Glu Gly Gly Val
 130 135 140
 Ile Thr Lys Ile Val Gln Gly Asn Tyr Asn Cys Leu Tyr Ile Gly Ser
 145 150 155 160
 Val Lys Glu Gly Val Ser Glu Leu Asn Leu Thr Ser Gly Gln Val Arg
 165 170 175
 Asn Leu Leu Ala Ile Asp Glu Ser Gly Glu Ser Ile Phe Cys Arg Asp
 180 185 190
 Leu Leu Pro Tyr Ser Asp Asn Glu Leu Trp Ile Gly Thr Glu Ser Gly
 195 200 205
 Ile Tyr Ile Tyr Asn Leu Arg Thr Ala Gln Phe Ile His Leu Arg Ala
 210 215 220
 Ser Leu Tyr Asp Ser Tyr Ser Leu Ser Asp Asn Ala Ile Tyr Ala Leu
 225 230 235 240
 Tyr Lys Asp Arg Glu Glu Gly Leu Trp Ile Gly Ser Tyr Phe Gly Gly
 245 250 255
 Val Asp Tyr Tyr Pro Arg Gln Tyr Thr Tyr Phe Ala Lys Tyr Tyr Pro
 260 265 270
 Lys Asn Ile Ala Asn Ser Leu His Gly Lys Arg Val Arg Glu Phe Cys
 275 280 285
 Arg Ala Asp Asp Gly Thr Leu Trp Ile Gly Thr Glu Asp Gly Gly Leu
 290 295 300
 Asn His Phe Asn Pro Lys Thr Lys Glu Phe His Phe Phe Glu Pro Ser
 305 310 315 320
 Ala Gly Phe Thr Asn Ile His Gly Leu Cys Met Asp Gly Ser His Leu
 325 330 335
 Trp Val Gly Thr Phe Ser Lys Gly Leu Arg Val Ile Asp Thr Arg Thr
 340 345 350

Gly	Val	Val	Leu	Arg	Thr	Tyr	Thr	Glu	Gly	His	Thr	Pro	His	Ser	Leu
		355					360					365			
Asn	Asp	Asn	Ser	Ile	Phe	Ser	Ile	Cys	Arg	Thr	Ser	Ala	Gly	Glu	Ile
	370					375					380				
Tyr	Leu	Gly	Thr	Leu	Phe	Gly	Leu	Leu	Arg	Tyr	Asn	Arg	Thr	Gln	Asp
385					390					395					400
Ser	Phe	Asp	Cys	Ile	Pro	Glu	Leu	Asn	Gly	Lys	Phe	Val	Tyr	Asp	Ile
				405					410					415	
Lys	Glu	Asp	Ser	Tyr	Gly	Asn	Leu	Trp	Leu	Ala	Thr	Tyr	Ala	Asn	Gly
			420					425					430		
Ala	Tyr	Cys	Tyr	Asp	Val	Ser	Ala	Arg	Arg	Trp	Lys	Asn	Tyr	Val	Phe
		435					440					445			
Asp	Ala	Glu	Asp	Glu	Arg	Ser	Leu	Pro	Tyr	Asp	Lys	Val	Leu	Ser	Val
	450					455					460				
Phe	Glu	Asp	Ser	Tyr	Arg	Gln	Ile	Trp	Leu	Thr	Thr	Gln	Gly	Gly	Gly
465					470					475					480
Phe	Cys	Leu	Phe	His	Pro	Asp	Thr	Glu	Thr	Phe	Thr	Arg	Tyr	Gly	Leu
				485					490					495	
Lys	Asp	Gly	Leu	Pro	Asn	Asp	Val	Val	Tyr	Gln	Ile	Val	Glu	Asp	Asp
		500						505					510		
Asp	Arg	Phe	Leu	Trp	Leu	Thr	Thr	Asn	Asn	Gly	Leu	Val	Arg	Phe	Asp
	515					520						525			
Pro	Lys	Thr	Met	Glu	Met	Lys	Val	Phe	Ser	Thr	Ala	Asn	Gly	Leu	Pro
	530					535					540				
Thr	Asn	Gln	Phe	Asn	Tyr	Arg	Ser	Gly	Phe	Lys	Asp	Glu	Ala	Gly	Asn
545					550					555					560
Ile	Tyr	Leu	Gly	Ser	Ile	Asn	Gly	Phe	Val	Ala	Phe	Asp	Pro	Arg	Thr
				565					570					575	
Phe	Ala	Glu	Asn	Arg	Gln	Val	Pro	Ala	Val	Ala	Ile	Thr	Asp	Phe	Leu
			580					585					590		
Leu	Phe	Asn	Lys	Glu	Val	Ser	Val	Gly	Glu	Thr	Asp	Ser	Pro	Leu	Lys
		595					600					605			
Ser	Ser	Ile	Thr	Phe	Ser	Asp	Lys	Val	Val	Leu	Thr	Ala	Asp	Gln	Asn
	610					615						620			
Ser	Phe	Ser	Phe	Arg	Ile	Ala	Ala	Leu	Ser	Tyr	Gln	Ala	Pro	Arg	Met
625					630					635					640
Asn	Lys	Leu	Met	Tyr	Lys	Leu	Glu	Gly	Phe	Asp	Glu	Gly	Trp	Leu	Thr
			645						650					655	
Ile	Gly	Glu	Ser	Pro	Leu	Val	Thr	Tyr	Ser	Asn	Leu	Gly	Tyr	Gly	Asp
			660					665					670		
Tyr	Val	Phe	Lys	Val	Lys	Ala	Ser	Asn	Ser	Asp	Gly	Val	Trp	Asn	Glu
		675					680					685			
Gln	Glu	Thr	Ser	Leu	His	Leu	Ser	Ile	Leu	Pro	Pro	Phe	Tyr	Leu	Ser
	690					695					700				
Gly	Trp	Ala	Tyr	Cys	Phe	Tyr	Val	Leu	Phe	Phe	Met	Gly	Cys	Leu	Val
705					710					715					720
Cys	Val	Ile	Phe	Tyr	Phe	Lys	Arg	Arg	Asn	Tyr	Arg	Lys	Gln	His	Arg
				725					730					735	
Gln	Met	Glu	Met	Leu	Glu	Gln	Glu	Lys	Glu	Arg	Glu	Val	Tyr	His	Ala
			740					745					750		
Lys	Ile	Asn	Phe	Phe	Thr	Asn	Val	Ala	His	Glu	Ile	Arg	Thr	Pro	Leu
	755					760							765		
Thr	Leu	Ile	Lys	Gly	Pro	Leu	Glu	Asn	Ile	Ile	Leu	Lys	Lys	Glu	Val
	770					775					780				
Asp	Ser	Glu	Thr	Lys	Glu	Asp	Leu	Tyr	Ile	Met	Lys	Gln	Asn	Thr	Glu
785					790					795					800
Arg	Leu	Leu	Asn	Leu	Thr	Asn	Gln	Leu	Leu	Asp	Phe	Arg	Lys	Thr	Glu
				805					810					815	
Thr	Arg	Gly	Phe	Arg	Leu	Asn	Phe	Thr	Glu	Cys	Asp	Val	Val	Ala	Val

820	825	830
Leu Arg Glu Thr Tyr Leu Arg Phe Thr Ser Leu Ala Lys Gln Lys Gly		
835	840	845
Leu Asp Phe Ile Leu Glu Leu Pro Gln Glu Cys Phe Met Ala Asp Val		
850	855	860
Asn Gln Glu Ala Leu Thr Lys Ile Ile Ser Asn Leu Leu Asn Asn Gly		
865	870	875
Val Lys Tyr Ala Ser Thr Tyr Leu Arg Ile Ser Leu Glu Thr Asp Glu		
885	890	895
Lys Val Phe His Ile Arg Thr Phe Asn Asp Gly Glu Met Ile Pro Asp		
900	905	910
Thr Met Lys Glu Glu Ile Phe Lys Pro Phe Val Arg Leu Asp Lys Glu		
915	920	925
Asp Glu Val Thr Thr Gly Thr Gly Ile Gly Leu Ala Leu Ser Arg Ser		
930	935	940
Leu Ala Glu Leu His Gln Gly Ser Leu Met Met Glu Lys Gly Glu Glu		
945	950	955
Val Asn Cys Phe Cys Leu Thr Leu Pro Val Asn Gln Asp Ser Thr Ile		
965	970	975
Thr Leu Ser Ala Glu Asn Val Ser Gln Val Glu Glu Asn Ser Cys Gly		
980	985	990
Trp Glu Gln Glu Glu Thr Asp Thr Lys Glu Lys Lys Pro Met Ile Leu		
995	1000	1005
Val Val Glu Asp Asn Pro Asp Met Leu Ala Phe Ile Arg Lys Gln Leu		
1010	1015	1020
Thr Thr Glu Tyr Ser Val Leu Thr Ala Met Asn Gly Ile Glu Ala Leu		
1025	1030	1035
Ala Val Leu Asp Asn His Tyr Val Asn Leu Val Val Ser Asp Val Met		
1045	1050	1055
Met Pro Gln Met Asp Gly Phe Glu Leu Cys Lys Thr Ile Lys Ser Asp		
1060	1065	1070
Leu Ser Tyr Ser His Ile Pro Val Val Leu Leu Thr Ala Lys Thr Asn		
1075	1080	1085
Ile Gln Ser Lys Ile Glu Gly Leu Glu Leu Gly Ala Asp Ala Tyr Ile		
1090	1095	1100
Glu Lys Pro Phe Ser Val Glu Tyr Leu Leu Ala Asn Ile Ser Ser Leu		
1105	1110	1115
Ile His Asn Arg Glu Lys Leu Arg Gln Thr Phe Ala Lys Ser Pro Phe		
1125	1130	1135
Val Ala Ala Asn Thr Met Ala Leu Thr Lys Ala Asp Glu Glu Phe Ile		
1140	1145	1150
Trp Lys Leu Asn Asp Ile Ile Gln Ala Asn Leu His Asn Pro Glu Phe		
1155	1160	1165
Ser Met Glu Asp Met Ala Asp Ala Leu Lys Met Ser Arg Ser Ser Phe		
1170	1175	1180
Tyr Arg Lys Ile Lys Gly Val Leu Asp Leu Ser Pro Asn Glu Tyr Leu		
1185	1190	1195
Arg Leu Glu Arg Leu Lys Gln Ala Ala Gln Leu Leu Lys Glu Gly Lys		
1205	1210	1215
Ser Arg Val Asn Glu Ile Cys Tyr Thr Val Gly Phe Asn Ser Pro Ser		
1220	1225	1230
Tyr Phe Ser Lys Cys Phe Leu Lys Gln Phe Gly Val Leu Pro Lys Asp		
1235	1240	1245
Phe Ile Gly		
1250		

<210> 7930

<211> 85

<212> PRT

<213> B.fragilis

<400> 7930

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His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
1          5          10          15
Cys Lys Arg Leu Val Ile Cys Ala Gln Lys Pro Asp Asn Leu Gln Lys
          20          25          30
Thr Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly
          35          40          45
Ser Asp Gly Val Asn Ser Leu Ser Lys Leu Glu Leu Ser Tyr Ser Ala
          50          55          60
Gly Val Cys Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
65          70          75          80
Leu Glu Ile Lys Lys
          85

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<210> 7931

<211> 100

<212> PRT

<213> B.fragilis

<400> 7931

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Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
1          5          10          15
Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
          20          25          30
Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
          35          40          45
Leu Tyr Arg Asn Pro Leu Ile Ile Lys Pro Cys Gly Ile Ile Ile Pro
          50          55          60
Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
65          70          75          80
Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
          85          90          95
Lys Leu Ser Ser
          100

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<210> 7932

<211> 567

<212> PRT

<213> B.fragilis

<400> 7932

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Phe Ile Pro Lys Met Ile Lys Lys Leu Tyr Leu Pro Leu Leu Met Ala
1          5          10          15
Leu Val Val Ala Leu Ser Ser Cys Ser Asn Lys Met Gly Ala Leu Ser
          20          25          30
Ser Asp Tyr Phe Thr Thr Thr Pro Gln Val Leu Glu Ala Val Gly Gly
          35          40          45
Lys Val Pro Val Thr Ile Asn Gly Lys Phe Pro Glu Lys Tyr Phe Lys
          50          55          60
Lys Asn Ala Val Val Glu Val Thr Pro Val Leu Lys Trp Glu Gly Gly
65          70          75          80
Gln Val Lys Gly Gln Pro Ala Val Phe Gln Gly Glu Lys Val Glu Gly
          85          90          95
Asn Asp Gln Thr Ile Ser Tyr Lys Met Gly Gly Asn Tyr Thr Met Lys
          100          105          110
Thr Thr Phe Asp Tyr Val Pro Glu Met Ala Lys Ser Glu Leu Tyr Leu
          115          120          125

```

Glu Phe Asn Ala Lys Val Gly Lys Lys Thr Ile Ala Ile Pro Ala Val
 130 135 140
 Lys Ile Ala Asp Gly Val Ile Ser Thr Ser Glu Leu Ile Asn Asn Thr
 145 150 155 160
 Leu Ser Ser Ala Asn Pro Ala Leu Gly Asp Asp Ala Phe Gln Arg Ile
 165 170 175
 Ile Lys Glu Ala His Asn Ala Asn Ile Met Phe Leu Ile Gln Gln Ala
 180 185 190
 Asn Ile Arg Ser Ser Glu Leu Lys Thr Ala Lys Glu Phe Asn Lys Glu
 195 200 205
 Val Ala Asn Val Asn Asp Ala Glu Asn Lys Lys Ile Ser Asn Ile Glu
 210 215 220
 Ile Ser Ala Tyr Ala Ser Pro Asp Gly Gly Val Lys Leu Asn Thr Gly
 225 230 235 240
 Leu Ala Glu Asn Arg Glu Gly Asn Thr Thr Lys Leu Ile Asn Lys Asp
 245 250 255
 Leu Lys Lys Ala Lys Ile Glu Val Pro Val Asp Ala Lys Tyr Thr Ala
 260 265 270
 Gln Asp Trp Glu Gly Phe Gln Glu Leu Val Ser Lys Ser Asn Ile Gln
 275 280 285
 Asp Lys Glu Leu Ile Leu Arg Val Leu Ser Met Tyr Gln Asp Pro Glu
 290 295 300
 Gln Arg Glu Thr Glu Ile Lys Asn Ile Ser Ser Val Tyr Lys Thr Leu
 305 310 315 320
 Ala Asp Glu Ile Leu Pro Gln Leu Arg Arg Ser Arg Leu Thr Leu Asn
 325 330 335
 Tyr Glu Ile Ile Gly Lys Ser Asp Glu Glu Ile Ala Asn Leu Ala Ala
 340 345 350
 Thr Asp Pro Lys Gln Leu Asn Val Glu Glu Ile Leu Tyr Ala Ala Thr
 355 360 365
 Leu Thr Asn Asp Pro Ala Lys Lys Ala Asp Ile Tyr Thr Lys Ala Ser
 370 375 380
 Gln Gln Phe Pro Asn Asp Tyr Arg Ala Phe Asn Asn Leu Gly Lys Leu
 385 390 395 400
 Ala Tyr Gln Ala Gly Asp Leu Asp Lys Ala Gln Ser Tyr Val Lys Lys
 405 410 415
 Ala Glu Ser Ile Lys Ser Ala Pro Glu Val Asn Met Asn Leu Gly Leu
 420 425 430
 Ile Ala Leu Ala Lys Gly Asp Lys Ala Ala Ala Glu Ser Tyr Leu Gly
 435 440 445
 Lys Ala Ala Gly Ala Lys Glu Leu Asn Glu Thr Leu Gly Asn Leu Tyr
 450 455 460
 Val Ala Gln Gly Gln Tyr Glu Arg Ala Val Asn Ala Phe Gly Asp Thr
 465 470 475 480
 Lys Thr Asn Ser Ala Ala Leu Ala Gln Ile Leu Ala Lys Asp Tyr Asn
 485 490 495
 Lys Ala Lys Asn Thr Leu Ala Gly Ile Ala Thr Pro Asp Ala Tyr Thr
 500 505 510
 Asp Tyr Leu Met Ala Val Leu Gly Ala Arg Thr Asn Asn Thr Ser Met
 515 520 525
 Leu Thr Ser Ser Leu Lys Ser Ala Val Ala Lys Asn Pro Ala Leu Ala
 530 535 540
 Lys Lys Ala Ala Thr Asp Leu Glu Phe Ala Lys Tyr Tyr Thr Asn Ala
 545 550 555 560
 Asp Phe Met Ser Ile Val Lys
 565

<210> 7933

<211> 246

<212> PRT

<213> B.fragilis

<400> 7933

Gln	Phe	Asn	Lys	Thr	Asn	Met	Asn	Lys	Met	Gly	Leu	Thr	Leu	Ile	Tyr
1				5					10					15	
Leu	Trp	Leu	Val	Ser	Leu	Cys	Ser	Cys	Gln	Gln	Glu	Leu	Ile	Glu	Tyr
			20					25					30		
Glu	Lys	Gly	Asp	Val	Lys	Val	His	Ile	Glu	Gln	Gly	Glu	Gln	Trp	Leu
		35					40					45			
His	Asp	Phe	Pro	Leu	Phe	Leu	Gly	Ile	Asn	Lys	Lys	Asn	Pro	Pro	Gln
	50					55					60				
Ile	Ala	Ile	Trp	Leu	Glu	Asp	Thr	Gln	Gly	Asn	Tyr	Leu	Ser	Thr	Val
65					70					75					80
Tyr	Val	Thr	His	Lys	Ile	Ala	Thr	Gln	Ser	Trp	Gln	Ala	Ser	Gly	Gly
				85					90					95	
Asn	Arg	Arg	Lys	Glu	Ala	Leu	Pro	His	Trp	Cys	Tyr	Ser	Arg	Gly	Ile
			100					105					110		
Lys	Tyr	Asp	Asp	Glu	Leu	Tyr	Leu	Pro	Thr	Lys	Lys	Glu	Pro	Leu	Thr
		115					120					125			
Asp	Gly	Ile	Ser	Gly	Ala	Thr	Pro	His	Gly	Ser	Phe	Asp	Ile	Lys	Leu
	130					135					140				
Ser	Pro	Thr	Thr	Ala	Leu	Lys	Lys	Phe	Val	Val	Lys	Ile	Glu	Ile	Asn
145					150					155					160
His	Ser	Thr	Asp	Phe	Asn	Glu	Ala	Phe	Pro	Lys	Leu	Ala	Lys	Glu	Gly
				165					170					175	
Glu	Thr	Asn	Tyr	Ser	Gly	Gly	Lys	Glu	Gly	Ser	Gly	Gln	Pro	Ala	Ile
			180					185					190		
Val	Tyr	Thr	Ala	Asn	Val	Asp	Leu	Leu	Ser	Gly	Glu	Lys	Ser	Phe	Glu
			195				200					205			
Ala	Asn	Leu	Ile	Gly	His	Ser	Ser	Pro	Asp	Gly	Ser	Ser	Gly	Glu	Ile
	210					215					220				
Asn	Glu	Asp	Thr	Ser	Gly	Leu	Thr	Thr	Ala	Leu	His	Ile	Val	Lys	Arg
225					230					235					240
Ile	Thr	Val	Thr	Ile	Gln										
				245											

<210> 7934

<211> 410

<212> PRT

<213> B.fragilis

<400> 7934

Thr	Tyr	Asn	Asn	Leu	Asn	Met	Met	Thr	His	Asn	Ile	Ile	Arg	His	Leu
1				5					10					15	
Lys	Ser	Leu	Arg	Gln	Thr	Leu	Ser	Gln	Asp	Lys	Lys	Pro	Ile	Gly	Phe
			20					25					30		
Phe	Ile	Ser	Ala	Gly	Cys	Pro	Leu	Ser	Ile	Glu	Ile	Thr	Pro	Pro	Glu
		35					40					45			
Asn	Trp	Pro	Leu	Ile	Pro	Asp	Met	Lys	Lys	Leu	Ser	Glu	Tyr	Val	Thr
	50					55					60				
Ser	Ile	Leu	Lys	Ser	Ser	Asp	Thr	Thr	Lys	Leu	Ser	Thr	Tyr	Asp	Arg
65					70					75					80
Leu	Ile	Ser	Glu	Leu	Glu	Lys	Thr	Asn	Lys	Ser	Lys	Glu	Asn	Leu	Glu
				85					90					95	
Asp	Ile	Leu	Ser	Phe	Ile	Arg	Ser	Leu	Lys	Asp	Val	Ala	Gln	Gly	Gly
			100					105					110		
Gly	Thr	Val	Arg	Gly	Leu	Thr	Glu	Thr	Glu	Leu	Glu	Asp	Leu	Glu	Thr
		115					120					125			

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Asn Ile Cys Lys Leu Ile Val Gly Lys Ile Arg Val Asn Leu Pro Asn
130 135 140
Lys Asn Thr Pro Tyr His Lys Leu Ala Lys Trp Ile Ser Ser Ile Asp
145 150 155 160
Arg Glu Lys Pro Ile Glu Leu Phe Thr Thr Asn Tyr Asp Leu Leu Met
165 170 175
Glu Gln Ala Leu Glu Asp Val Gly Val Pro Tyr Phe Asp Gly Phe Val
180 185 190
Gly Ser Arg Gln Ser Phe Phe Asp Leu Arg Thr Val Glu Glu Asp Leu
195 200 205
Ala Pro Arg His Trp Thr Arg Leu Trp Lys Ile His Gly Ser Ile Asn
210 215 220
Trp Phe Gln Lys Glu Asn Lys Asp Val Phe Arg Ser Asp Ala Tyr Lys
225 230 235 240
Asn Asp Thr Asp Glu Ser Ser Tyr Leu Ile Tyr Pro Ser His Leu Lys
245 250 255
Tyr Asp Gln Ser Arg Lys Met Pro Phe Leu Ala Leu Ser Asp Gln Leu
260 265 270
Gly Arg Phe Leu Lys Gln Pro Ser Ala Ala Leu Ile Leu Cys Gly Tyr
275 280 285
Ser Phe Asn Asp Glu His Ile Asn Asp Thr Ile Val Asn Ala Ile Lys
290 295 300
Ser Asn Pro Thr Ala Ile Val Ile Ala Leu Met Phe Gly Asn Met Glu
305 310 315 320
Asp Gly Ser Ile Glu Arg Tyr Pro Lys Gly Val Glu Leu Ala Leu Lys
325 330 335
Arg His Asn Ile Ser Phe Trp Thr Asn Asp Glu Ala Ile Ile Gly Thr
340 345 350
Asn Arg Gly Gln Trp Ile Val Leu Asp Lys Asp Val Asp Asp Pro Leu
355 360 365
Ile Gln Leu Val Glu Val Asn Ser Ser Thr Asn Asn Lys Thr Ile Lys
370 375 380
Phe Gly Asp Phe Lys Val Phe Ser Thr Phe Leu Thr Ser Leu Ile Gly
385 390 395 400
Tyr Gln Glu Glu Glu Asn Lys Asn Asp Lys
405 410

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<210> 7935

<211> 435

<212> PRT

<213> B.fragilis

<400> 7935

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Ser Arg Asn Lys Ser Met Lys Met Lys Tyr Leu Leu Ala Ala Cys Thr
1 5 10 15
Ala Phe Phe Leu Val Ser Cys Ser Asn Asp Asp Glu Pro Gln Pro Ser
20 25 30
Pro Gln Tyr Gly Asp Ile Val Gly Leu Asn Ile Lys Asp Ala Lys Tyr
35 40 45
Ile Tyr Thr Ser Gly Ser Asn Thr Arg Ser Ser Ser Ala Glu Tyr Arg
50 55 60
Gln Ile Lys Lys Asp Gly Arg Asp Met Glu Leu Ser Trp Ile Asp Ser
65 70 75 80
Lys Gly Asp Thr Ile Lys Ile Ser Gly Asn Pro Lys Ile Trp Asn Ile
85 90 95
Asn Lys Lys Tyr Leu Met Ile Asn Thr Gly Val Pro Ile Asn Tyr Gln
100 105 110
Pro Lys Tyr Asp Glu Asp Gly Asp Arg Leu Pro Asp Ser Thr Pro Leu
115 120 125

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Gly Gly Tyr Ser Tyr Leu Ile Asp Lys Thr Thr Glu Ala Ile Tyr Asp
 130 135 140
 Leu Ala Glu Gly Leu Asn Gly Glu Asn Ala Val Thr Asp Asn Lys Gly
 145 150 155 160
 Asn Ile Tyr Ala Val Asp Asn Ser Thr Gly Ala Val Leu Phe Lys Ile
 165 170 175
 His Thr Gln Asp Ala Ala Asn Leu Lys Leu Glu Leu Tyr Ala Lys Ala
 180 185 190
 Ser Thr Ser His Lys Thr Pro Phe Val Val Asn Asn Lys Gly Ile Cys
 195 200 205
 Phe Tyr Asp Tyr Arg Tyr Ile Arg Pro Ser Tyr Gly Thr Gln Gln Phe
 210 215 220
 Ile Ile Ser Asn Phe Ile Ser Gly Thr Glu Tyr Gly Asn Ala Phe Val
 225 230 235 240
 Ser His Asp Asn Glu Asp Met Tyr Ile Thr Ala Ile Asn Ser Ser Leu
 245 250 255
 Glu Glu Gly Lys Ser Asn Leu Ile Val Ser Lys Leu Lys Glu Asn Lys
 260 265 270
 Glu Ile Gln Ser Glu Val Met Ala Glu Leu Ser Phe Asp Gly Ile Trp
 275 280 285
 Gln Ser Gln Met Ser Asp Gly Ile Gln Val Lys Trp Asn Asp Arg Arg
 290 295 300
 Gly Thr Met Leu Ile His Leu Tyr Arg Tyr Asn Glu Ser Thr Tyr Glu
 305 310 315 320
 Tyr Leu Leu Ala Thr Lys Thr Leu Thr Lys Ile Pro Val Asn Leu Gly
 325 330 335
 Gly Phe Phe Thr Lys Asp Tyr Ser Thr Tyr Ile Thr Thr Asn Ala Leu
 340 345 350
 Tyr Ala Gln Lys Ser Val Asn Lys Leu Asp Ile Ile Ala Leu Glu Asp
 355 360 365
 Tyr Ser Thr Lys Thr Leu Asp Leu Ser Gly Lys Gly Ile Asp Phe Arg
 370 375 380
 Ser Ile Tyr Thr Met Glu Gly Ser Asp Leu Leu Tyr Phe Ala Gly Phe
 385 390 395 400
 Gln Tyr Ser Thr Ser Gln Ser Val Ile Gly Thr Ile Asp Ile Asp Gly
 405 410 415
 Asn Ile Glu Ile Ser Glu Ser Thr Pro Asn Pro Ile Thr Asn Ile Ile
 420 425 430
 Gln Ile Asn
 435

<210> 7936

<211> 87

<212> PRT

<213> B.fragilis

<400> 7936

His Ser Val Lys Met Tyr Phe Glu Ile Pro Gln Asn Gln Phe Phe Val
 1 5 10 15
 Pro Trp Lys Gln Glu Glu Ser Lys Lys Arg Arg Asn Thr Leu Phe Gln
 20 25 30
 Glu Val Arg Glu Ser Glu Asn Thr Val Lys Cys Tyr His Lys Asp Lys
 35 40 45
 Ile Pro Arg Ala Phe Thr Leu Arg Lys Lys Pro Gly Asn Leu Ile Asn
 50 55 60
 Ile Arg Asn Asn Thr Phe Lys Lys Ser Pro Pro Asn Ser Val Leu Glu
 65 70 75 80
 Glu Lys Ala Val Leu Phe Pro
 85

<210> 7937
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 7937
 Ile Asn Val Asn Pro Ile Leu Phe Ile Leu Val Leu Leu Asn Cys Tyr
 1 5 10 15
 Phe Ile Ile Val Thr Asn Arg Glu His Gly Lys Gln Lys Asn Ile Arg
 20 25 30
 Leu Val Met Phe Gln Ser Phe Tyr Gly Glu Asn Lys Gly Phe Ala Leu
 35 40 45
 His Asn Gln Phe Ser Leu Leu Met Leu Gly Val Pro Tyr
 50 55 60

<210> 7938
 <211> 633
 <212> PRT
 <213> B.fragilis

<400> 7938
 Leu Gly Thr Lys Lys Lys Lys Ile Lys Met Thr Ser Lys Ala Thr Tyr
 1 5 10 15
 Ile Gly Asp Val Gln Asn Val Asn Gly Thr Thr Val Ser Val Thr Phe
 20 25 30
 Ser Pro Asn Cys Ile Ser Gly Leu Thr Tyr Val Asn Gly Glu Gly Tyr
 35 40 45
 Lys Ile Gly Gln Val Gly Ser Phe Val Lys Ile Pro Leu Gly Tyr Thr
 50 55 60
 Asp Leu Phe Gly Ile Val Ser Gln Ile Gly Ala Asn Ala Val Pro Glu
 65 70 75 80
 Ala Gln Ile Glu Ser Gln Pro His Gly Asn Arg Trp Ile Thr Ile Gln
 85 90 95
 Leu Ile Gly Glu Gly Gln Arg Ser Gly Gly Phe Glu Arg Gly Ile Ser
 100 105 110
 Gln Tyr Pro Thr Ile Gly Asp Glu Val His Leu Val Ser Glu Ser Asp
 115 120 125
 Leu Lys His Ile Tyr Gly Asn Ile Asp Lys Thr Asn Leu Val Asn Ile
 130 135 140
 Gly His Ile Ala Gly Ala Glu Ser Ile Pro Ala Leu Ile Asp Ile Asn
 145 150 155 160
 Lys Leu Ile Thr Arg His Ser Ala Ile Val Gly Ser Thr Gly Ser Gly
 165 170 175
 Lys Ser Thr Thr Val Ala Gly Leu Leu Asp Ala Leu Ser Asn Asn Asn
 180 185 190
 Lys Tyr Pro Ala Ser Arg Ile Leu Ile Phe Asp Ile His Gly Glu Tyr
 195 200 205
 Ser Lys Thr Phe Lys Asp Ser Ala Asn Ile Tyr Lys Ile Asn Pro Glu
 210 215 220
 Glu Thr Ser Glu Pro Asn Ile Lys Ser Leu Asp Ile Pro Tyr Trp Ala
 225 230 235 240
 Met Ser Phe Asp Glu Leu Ile Ser Leu Thr Leu Gly Asp Ile Asp Glu
 245 250 255
 Lys Glu Lys Ala Pro Ile Gly Glu Leu Ile Ile Glu Leu Lys Lys Lys
 260 265 270
 Thr Phe Thr Asp Ser Pro Asp Lys Tyr Pro Asp Ile Asp Ile Asn Arg
 275 280 285
 Ile Thr Val Asp Thr Pro Leu Pro Phe Ser Leu Lys Arg Leu Trp Leu

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      290                      295                      300
Tyr Leu Tyr Arg Leu Val Tyr Ser Thr His Asn Thr Gln Ser Thr Gly
305                      310                      315                      320
Gln Arg Phe Cys Ser Ile Thr Glu Asn Phe Asp Ile Arg Asn Thr Thr
      325                      330                      335
Glu Ala Phe Lys Leu Asp Ser Glu Asp Thr Pro Leu Gln Leu Gly Asn
      340                      345                      350
Ala Glu Asp Ile Ile Pro Pro His Tyr Leu Pro Gln Gln Ala Ser Arg
      355                      360                      365
Ile Tyr Gln Ser Ser Ser Thr Leu Asn Ile Arg Arg Pro Ile Ser Leu
      370                      375                      380
Leu Thr Ser Lys Leu Arg Asp Pro Arg Tyr Asp Phe Val Phe Asn Pro
385                      390                      395                      400
Gly Ser Trp Thr Val Asp Leu Glu Gly Asn Ile Glu Gln Asp Leu Asp
      405                      410                      415
Ser Leu Phe Lys Met Trp Ile Gly Glu Lys Asn Ile Ser Ile Leu Asp
      420                      425                      430
Leu Ser Gly Ile Pro Asn Asn Ile Leu Asn Thr Ile Ile Gly Ile Leu
      435                      440                      445
Leu Arg Ile Ile Tyr Asp Ala Ile Phe Trp Ser Arg Lys Leu Pro Gln
450                      455                      460
Gly Gly Lys Glu Arg Pro Leu Leu Leu Val Met Glu Glu Ala His Asn
465                      470                      475                      480
Tyr Leu Asn Asp Asn Phe Lys Gly Val Ala Ser Ser Ile Val Gln Arg
      485                      490                      495
Ile Val Lys Glu Gly Arg Lys Tyr Gly Ile Gly Ala Met Ile Val Ser
      500                      505                      510
Gln Arg Pro Ser Glu Ile Asn Ser Thr Ile Leu Ser Gln Cys Gly Thr
      515                      520                      525
Ile Ile Ser Leu Arg Leu Ser Asn Ala Thr Asp Arg Gly His Val Thr
      530                      535                      540
Gly Thr Val Thr Asp Ser Leu Glu Gly Leu Met Asn Met Leu Pro Ile
545                      550                      555                      560
Leu Arg Thr Gly Glu Ala Ile Val Val Gly Glu Ser Val Lys Leu Pro
      565                      570                      575
Met Arg Ala Gln Ile Ser Ala Pro Ser Lys Glu Arg Arg Pro Asp Ser
      580                      585                      590
Gln Asp Pro Ile Val Val Ser Glu Asn Glu Asn Asp Lys Ile Gly Trp
      595                      600                      605
Arg Asn Glu Thr Ser Ile Ser Asp Asn Asp Tyr Thr Lys Met Ile Lys
      610                      615                      620
Ala Trp Arg Lys Gln Asp Pro Asn Val
625                      630

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<210> 7939

<211> 285

<212> PRT

<213> B.fragilis

<400> 7939

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Lys Tyr Tyr Lys Ile Asn Lys Ile Ile Leu Thr Asn Thr Leu Leu Ala
1      5      10      15
Met Leu Glu Lys Ile Gln Glu Thr Ala Ala Phe Leu Lys Gly Lys Met
      20      25      30
His Thr Ser Pro Glu Thr Ala Ile Leu Gly Thr Gly Leu Gly Ser
      35      40      45
Leu Ala Asn Glu Ile Thr Glu Lys Tyr Glu Ile Lys Tyr Glu Asp Ile
      50      55      60
Pro Asn Phe Pro Val Ser Thr Val Glu Gly His Ser Gly Lys Leu Ile

```

65					70					75				80
Phe	Gly	Lys	Leu	Gly	Asn	Lys	Glu	Ile	Met	Ala	Met	Gln	Gly	Arg Phe
				85					90				95	
His	Tyr	Tyr	Glu	Gly	Tyr	Ser	Met	Lys	Glu	Val	Thr	Phe	Pro	Val Arg
			100					105					110	
Val	Met	Arg	Glu	Leu	Gly	Ile	Lys	Thr	Leu	Phe	Val	Ser	Asn	Ala Ser
			115				120					125		
Gly	Gly	Thr	Asn	Pro	Glu	Phe	Glu	Ile	Gly	Asp	Leu	Met	Ile	Ile Thr
			130				135				140			
Asp	His	Ile	Asn	Tyr	Phe	Pro	Glu	His	Pro	Leu	Arg	Gly	Lys	Asn Ile
145					150					155				160
Pro	Tyr	Gly	Pro	Arg	Phe	Pro	Asp	Met	Ser	Glu	Ala	Tyr	Asp	Lys Glu
				165				170						175
Leu	Ile	Arg	Lys	Ala	Asp	Val	Ile	Ala	Ala	Glu	Lys	Gly	Ile	Lys Val
			180					185					190	
Gln	His	Gly	Ile	Tyr	Ile	Gly	Thr	Gln	Gly	Pro	Thr	Phe	Glu	Thr Pro
		195					200					205		
Ala	Glu	Tyr	Lys	Leu	Phe	His	Ile	Leu	Gly	Ala	Asp	Ala	Val	Gly Met
		210				215					220			
Ser	Thr	Val	Pro	Glu	Val	Ile	Val	Ala	Asn	His	Cys	Gly	Ile	Lys Val
225					230					235				240
Phe	Gly	Ile	Ser	Val	Val	Thr	Asp	Leu	Gly	Val	Glu	Gly	Lys	Ile Val
				245				250					255	
Glu	Val	Ser	His	Glu	Glu	Val	Gln	Lys	Ala	Ala	Asp	Ala	Ala	Gln Pro
			260					265					270	
Lys	Met	Thr	Thr	Ile	Met	Arg	Glu	Leu	Ile	Asn	Arg	Ala		
		275					280					285		

<210> 7940

<211> 640

<212> PRT

<213> B.fragilis

<400> 7940

Val	Thr	Ile	Asn	Val	Phe	Ser	Leu	Trp	Ile	Arg	His	Trp	Ala	Val	Val
1			5						10				15		
Gln	Phe	Lys	Lys	Asp	Asp	Val	Ala	Tyr	Glu	Arg	Asp	Tyr	Phe	Met	Ser
			20					25				30			
Tyr	Pro	Ala	Asn	Val	Met	Ala	Ile	Arg	Phe	Lys	Ala	Asp	Arg	Pro	Gly
			35				40					45			
Lys	Gln	Asn	Leu	Thr	Phe	Ser	Tyr	Ser	Pro	Asn	Pro	Val	Ser	Thr	Gly
			50			55					60				
Ser	Met	Ser	Ala	Asp	Gly	Ala	Asn	Gly	Leu	Ala	Tyr	Thr	Ala	His	Leu
65				70					75					80	
Asp	Asn	Asn	Gly	Met	Gln	Tyr	Val	Val	Arg	Ile	His	Ala	Ile	Ala	Lys
			85					90					95		
Gly	Gly	Thr	Leu	Ser	Asn	Ala	Asn	Gly	Lys	Ile	Thr	Val	Lys	Asp	Ala
			100					105					110		
Asp	Glu	Ala	Val	Phe	Leu	Val	Thr	Ala	Asp	Thr	Asp	Tyr	Lys	Ile	Asn
			115				120					125			
Phe	Asp	Pro	Asp	Phe	Lys	Asp	Pro	Lys	Ala	Tyr	Val	Gly	Val	Asn	Pro
		130				135					140				
Ala	Glu	Thr	Thr	Arg	Gln	Trp	Met	Asp	Asn	Ala	Val	Ala	Met	Gly	Tyr
145				150						155					160
Asp	Val	Leu	Phe	Lys	Gln	His	Tyr	Asp	Asp	Tyr	Ala	Ala	Leu	Phe	Asn
				165				170						175	
Arg	Val	Lys	Leu	Gln	Leu	Asn	Pro	Asp	Ala	Gln	Ser	Ala	Asn	Leu	Pro
			180					185					190		
Thr	Gly	Lys	Arg	Leu	Gln	Asn	Tyr	Arg	Lys	Gly	Gln	Pro	Asp	Phe	Tyr

195	200	205
Leu Glu Glu Leu Tyr Tyr Gln Phe Gly Arg Tyr Leu Leu Ile Ala Ser		
210	215	220
Ser Arg Pro Gly Asn Met Pro Ala Asn Leu Gln Gly Ile Trp His Asn		
225	230	235
Asn Val Asp Gly Pro Trp Arg Val Asp Tyr His Asn Asn Ile Asn Ile		
245	250	255
Gln Met Asn Tyr Trp Pro Ala Cys Ser Thr Asn Leu Tyr Glu Cys Thr		
260	265	270
Leu Pro Leu Ile Asp Phe Ile Arg Thr Leu Val Lys Pro Gly Gln Lys		
275	280	285
Thr Ala Gln Ala Tyr Phe Gly Thr Arg Gly Trp Thr Ala Ser Ile Ser		
290	295	300
Ala Asn Ile Phe Gly Phe Thr Thr Pro Leu Glu Ser Glu Glu Met Ala		
305	310	315
Trp Asn Phe Asn Pro Met Ala Gly Pro Trp Leu Ala Thr His Val Trp		
325	330	335
Glu Tyr Tyr Asp Tyr Thr Arg Asp Lys Lys Phe Leu Lys Glu Thr Gly		
340	345	350
Tyr Asp Leu Ile Lys Ser Ser Ala Gln Phe Ala Thr Asp Phe Leu Trp		
355	360	365
Arg Lys Pro Asp Gly Thr Tyr Thr Ala Ala Pro Ser Thr Ser Pro Glu		
370	375	380
His Gly Pro Ile Asp Glu Gly Thr Thr Phe Val His Ala Val Ile Arg		
385	390	395
Glu Ile Leu Gln Asp Ala Ile Glu Ala Ser Lys Val Leu Gly Val Asp		
405	410	415
Ser Lys Glu Arg Lys Gln Trp Gln Glu Val Leu Thr His Leu Ala Pro		
420	425	430
Tyr Lys Val Gly Arg Tyr Gly Gln Leu Met Glu Trp Ser Lys Asp Ile		
435	440	445
Asp Asp Pro Lys Asp Glu His Arg His Val Asn His Leu Phe Gly Leu		
450	455	460
His Pro Gly His Thr Leu Ser Pro Ile Thr Thr Pro Asp Leu Ala Lys		
465	470	475
Ala Ala Arg Val Val Leu Glu His Arg Gly Asp Gly Ala Thr Gly Trp		
485	490	495
Ser Met Gly Trp Lys Leu Asn Gln Trp Ala Arg Leu Gln Asp Gly Asn		
500	505	510
His Ala Tyr Lys Leu Phe Gly Asn Leu Leu Lys Asn Gly Thr Leu Asp		
515	520	525
Asn Leu Trp Asp Thr His Pro Pro Phe Gln Ile Asp Gly Asn Phe Gly		
530	535	540
Gly Thr Ala Gly Ile Thr Glu Met Leu Leu Gln Ser His Met Gly Phe		
545	550	555
Ile Gln Leu Leu Pro Ala Leu Pro Asp Ala Trp Lys Asp Gly Ser Ile		
565	570	575
Ser Gly Ile Cys Ala Lys Gly Asn Phe Glu Val Asp Leu Ser Trp Lys		
580	585	590
Asn Gly Gln Leu Ala Glu Ala Thr Ile Phe Ser Lys Ala Gly Glu Pro		
595	600	605
Cys Thr Val Arg Tyr Gly Asp Lys Thr Leu Ser Phe Lys Thr Ser Lys		
610	615	620
Gly Lys Val Tyr Lys Leu Ala Leu Asp Ala Asp Arg Leu Val Ile Lys		
625	630	635
		640

<210> 7941

<211> 688

<212> PRT

<213> B.fragilis

<400> 7941

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Ile Thr Ile Asn Thr Arg Asn Ile Ser Met Glu Lys Asn Phe Lys Arg
1      5      10      15
Thr Thr Val Thr Ser Ala Leu Pro Tyr Ala Asn Gly Pro Val His Ile
      20      25      30
Gly His Leu Ala Gly Val Tyr Val Pro Ala Asp Ile Tyr Val Arg Tyr
      35      40      45
Leu Arg Leu Lys Lys Glu Asp Val Leu Phe Ile Gly Gly Ser Asp Glu
      50      55      60
His Gly Val Pro Ile Thr Ile Arg Ala Lys Lys Glu Gly Ile Thr Pro
65      70      75      80
Gln Asp Val Val Asp Arg Tyr His Phe Leu Ile Lys Lys Ser Phe Glu
      85      90      95
Glu Phe Gly Ile Ser Phe Asp Val Tyr Ser Arg Thr Ser Ser Lys Thr
      100     105     110
His His Glu Leu Ala Ser Asp Phe Phe Lys Lys Leu Tyr Glu Lys Gly
      115     120     125
Glu Phe Ile Glu Lys Thr Ser Glu Gln Tyr Tyr Asp Glu Glu Ala His
      130     135     140
Gln Phe Leu Ala Asp Arg Tyr Ile Thr Gly Glu Cys Pro His Cys His
145     150     155     160
Ser Glu Gly Ala Tyr Gly Asp Gln Cys Glu Lys Cys Gly Thr Ser Leu
      165     170     175
Ser Pro Thr Asp Leu Ile Asn Pro Lys Ser Ala Ile Ser Gly Ser Lys
      180     185     190
Pro Val Met Lys Glu Thr Lys His Trp Tyr Leu Pro Leu Asp Lys His
      195     200     205
Glu Thr Trp Leu Arg Gln Trp Ile Leu Glu Glu His Lys Glu Trp Arg
      210     215     220
Pro Asn Val Tyr Gly Gln Cys Lys Ser Trp Leu Asp Met Gly Leu Gln
225     230     235     240
Pro Arg Ala Val Ser Arg Asp Leu Asp Trp Gly Ile Pro Val Pro Val
      245     250     255
Glu Gly Ala Glu Gly Lys Val Leu Tyr Val Trp Phe Asp Ala Pro Ile
      260     265     270
Gly Tyr Ile Ser Asn Thr Lys Glu Leu Leu Pro Asp Ser Trp Glu Thr
      275     280     285
Trp Trp Lys Asp Pro Glu Thr Arg Leu Val His Phe Ile Gly Lys Asp
290     295     300
Asn Ile Val Phe His Cys Ile Val Phe Pro Ala Met Leu Lys Ala Glu
305     310     315     320
Gly Ser Tyr Ile Leu Pro Asp Asn Val Pro Ser Asn Glu Phe Leu Asn
      325     330     335
Leu Glu Gly Asp Lys Ile Ser Thr Ser Arg Asn Trp Ala Val Trp Leu
      340     345     350
His Glu Tyr Leu Glu Asp Phe Pro Gly Lys Gln Asp Val Leu Arg Tyr
      355     360     365
Val Leu Thr Ala Asn Ala Pro Glu Thr Lys Asp Asn Asp Phe Thr Trp
      370     375     380
Lys Asp Phe Gln Ala Arg Asn Asn Asn Glu Leu Val Ala Val Tyr Gly
385     390     395     400
Asn Phe Val Asn Arg Ala Met Val Leu Thr Gln Lys Tyr Phe Glu Gly
      405     410     415
Lys Val Pro Ala Gly Glu Leu Thr Asp Tyr Asp Lys Glu Thr Leu
      420     425     430
Lys Glu Phe Ser Asp Val Lys Ala Glu Val Glu Lys Leu Leu Asn Val
      435     440     445

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Phe Lys Phe Arg Asp Ala Gln Lys Glu Ala Met Asn Leu Ala Arg Ile
  450          455          460
Gly Asn Lys Tyr Leu Ala Asp Thr Glu Pro Trp Lys Leu Ala Lys Thr
  465          470          475          480
Asp Met Glu Arg Val Gly Thr Ile Leu Asn Ile Ser Leu Gln Leu Val
          485          490          495
Ala Asn Leu Ala Ile Ala Phe Glu Pro Phe Leu Pro Phe Ser Ser Glu
          500          505          510
Arg Leu Arg Gln Met Leu Asn Met Asp Ser Phe Asp Trp Ala Glu Leu
          515          520          525
Gly Arg Asn Asp Leu Leu Pro Ala Gly His Gln Leu Asn Lys Pro Glu
          530          535          540
Leu Leu Phe Glu Lys Ile Glu Asp Ala Thr Ile Glu Ala Gln Val Gln
  545          550          555          560
Lys Leu Leu Asp Thr Lys Lys Ala Asn Glu Glu Ala Asn Tyr Lys Ala
          565          570          575
Lys Pro Ile Arg Ala Asn Ile Glu Phe Asp Asp Phe Met Lys Leu Asp
          580          585          590
Ile Arg Val Gly Thr Val Leu Glu Cys Gln Lys Val Pro Lys Ala Asp
          595          600          605
Lys Leu Leu Gln Phe Lys Ile Asp Asp Gly Leu Glu Thr Arg Thr Ile
          610          615          620
Val Ser Gly Ile Ala Gln His Tyr Lys Pro Glu Glu Leu Val Gly Lys
  625          630          635          640
Gln Val Cys Phe Ile Ala Asn Leu Ala Pro Arg Lys Leu Lys Gly Ile
          645          650          655
Val Ser Glu Gly Met Ile Leu Ser Ala Glu Asn Asn Asp Gly Ser Leu
          660          665          670
Ala Val Val Met Pro Gly Arg Glu Val Lys Pro Gly Ser Glu Val Lys
          675          680          685

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<210> 7942
 <211> 67
 <212> PRT
 <213> B.fragilis

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<400> 7942
Ser Ile Ser Leu Leu Lys Ala Glu Leu Val Phe Val Met Val Arg Lys
  1          5          10          15
Gly His Val Lys Val Gly His Ala Gln Lys Ser Gly Tyr Asn Gln Ile
          20          25          30
Glu Asp Glu Thr Ala Ile Phe Ile Tyr Ile Asn Ser Phe Leu Leu His
          35          40          45
Gly Leu Ser Ala Lys Tyr Ile Ala Arg Ser Tyr Ser Tyr Tyr Tyr Tyr
          50          55          60
Ala Ser Gly
  65

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<210> 7943
 <211> 64
 <212> PRT
 <213> B.fragilis

```

<400> 7943
Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
  1          5          10          15
Phe Gly Asn Leu Arg Ile Lys Gly His Leu His Leu Pro Glu Ala Tyr
          20          25          30
Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala

```

35	40	45
Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Phe Ile Ser Phe Ser		
50	55	60

<210> 7944
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7944
Pro Phe Ala Asn Arg Glu Arg Leu Ile Phe Leu Pro Pro Ser Ser Glu
1 5 10 15
Ala Ala Arg Phe Ile His Tyr Leu Leu Leu Phe Asn Lys Ile Val Val
20 25 30
Gln Arg Ala Val Ile Lys Lys Ile Ile Ile Ile Asn Ser Cys Ile Leu
35 40 45
Leu Lys Val Ile Ala Ser Leu Pro Arg Asp Ile Val Ile Leu
50 55 60

<210> 7945
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 7945
Ile Ala Gln Asn Tyr Lys Lys Lys Lys Asn Met Lys Ala Lys Phe Ser
1 5 10 15
Met Ile Gly Val Leu Leu Ile Ser Leu Phe Thr Val Val Asn Ile Val
20 25 30
Lys Ser Asn Gln Lys Asn Lys Arg Ile Glu Asp Ile Met Leu Val Asn
35 40 45
Val Glu Ser Leu Ala Phe Pro Glu Ser Gly Ile Gly Ser Asp Met Arg
50 55 60
Ile Ala Thr Lys His Val Cys Tyr Leu Asn Asn Glu Val Phe Asp Glu
65 70 75 80
Ser Thr Gly Arg Leu Glu His Ile Pro Val Glu Gly Arg Ile Gly Ile
85 90 95
Cys Asp Gly Thr Glu Gly Ala Cys Lys Ser Trp Pro Cys Thr Glu Val
100 105 110
Trp Leu

<210> 7946
 <211> 682
 <212> PRT
 <213> B.fragilis

<400> 7946
Leu Leu Lys Asn Thr Lys Ile Met Lys Ile Lys Met Lys Tyr Ile Val
1 5 10 15
Ala Gln Ala Cys Leu Val Ala Gly Ala Ser Ile Ala Leu Thr Ser Cys
20 25 30
Asn Asp Phe Leu Asp Arg Glu Pro Leu Asp Gln Val Thr Pro Gln Glu
35 40 45
Tyr Phe Gln Thr Ala Asp His Leu Ala Ala Tyr Thr Ile Ser Lys Tyr
50 55 60
Asn Ser Met Phe Ser Thr His Ser Gly Trp Asn Ala Gly Thr Val Asn
65 70 75 80
Asn Asp Gly Gly Thr Asp Asn Met Val Val Gly Gly Tyr Asn Ser Thr

Trp Arg Ala Met Asp Gln Leu Leu Thr Thr Lys Tyr Ile Pro Glu Gly
 565 570 575
 Phe Asn Phe Trp Asp Glu Ala Tyr Asp Asp Tyr Val Ala Met Lys Asn
 580 585 590
 Asp Lys Gly Glu Pro Lys Tyr Lys Ile Val Ser Asp Gly Ser Ser Thr
 595 600 605
 Ala Asn Met Ser Ala Lys Glu Leu Gly Lys Tyr Val Arg Pro Tyr Ser
 610 615 620
 Ile Val Lys Ala Asn Asn Ala Val Phe Asp Gly Tyr Thr Phe Ala Lys
 625 630 635 640
 Ala Tyr Tyr Leu Tyr Pro Val Pro Ile Arg Gln Met Glu Leu Leu Ser
 645 650 655
 Pro Asp Arg Ser Val Asn Asn Ser Val Leu Tyr Gln Asn Pro Tyr Trp
 660 665 670
 Pro Ser Lys Thr Ser Glu Pro Ala Ile Glu
 675 680

<210> 7947

<211> 321

<212> PRT

<213> B.fragilis

<400> 7947

His Thr Cys Leu Leu Lys Ile Leu Ser Phe Trp Gly Leu Cys Gly Tyr
 1 5 10 15
 Phe Phe Val Tyr Leu Ala Ser Gly Phe Val Ala Cys Val Lys Cys Leu
 20 25 30
 Leu Leu Met Arg Ala Ile Phe Ile Phe Val Cys Ile Leu Leu Phe Val
 35 40 45
 Ser Cys Gln Asn Ser Asp Lys Ser Arg Ile Ala His Met Ile Asp Glu
 50 55 60
 Trp Asp Gly Lys Glu Ile Ile Tyr Pro Asp Asp Leu Val Phe Thr Thr
 65 70 75 80
 Met Gly Glu Asp Thr Val Lys Trp Phe Leu Lys Asp Ser Arg Tyr Thr
 85 90 95
 Ile Val Thr Tyr Ala Asp Ser Ile Gly Cys Met Gly Cys Lys Leu Lys
 100 105 110
 Leu Pro Ala Trp Lys Asp Phe Ile Ser Tyr Leu Asp Ser Val Ser Asp
 115 120 125
 His Thr Val Lys Val Ile Phe Ile Leu His Pro Arg Asp Lys Lys Glu
 130 135 140
 Met Val His Leu Leu Glu Tyr Asn Asp Phe Ser Tyr Pro Val Cys Leu
 145 150 155 160
 Asp Ile Lys Gly Ser Phe Asp Lys Ile Asn Lys Ile Pro Ser Asn Leu
 165 170 175
 Ala Phe Gln Thr Phe Leu Leu Asp Asn Arg Asn Lys Val Ile Ala Ile
 180 185 190
 Gly Asn Pro Ile His Asn Pro Asn Val Arg Thr Leu Tyr Leu Asn Leu
 195 200 205
 Ile Leu Ser Asp Ser Ile Cys Glu Ser Arg Asp Leu Ile Gln Thr Lys
 210 215 220
 Ile Ser Leu Pro Glu Thr Ile Asp Met Gly Val Phe Asp Trp Ser Glu
 225 230 235 240
 Glu Lys Glu Ala Met Leu Ile Ile Lys Asn Leu Gly Val Val Ser Leu
 245 250 255
 Thr Val Glu Asn Ile Val Thr Ser Cys Gly Cys Thr Ser Val Glu Tyr
 260 265 270
 Ser Arg Arg Pro Val Ser Leu Lys Asp Ser Leu Val Ile Lys Ile Lys
 275 280 285

Tyr Lys Ala Glu Ser Pro Gly Tyr Phe Asn Lys Asp Ile Ala Ile Tyr
 290 295 300
 Cys Asn Val Pro Ser Ser Pro Val Tyr Val Lys Leu Ser Gly Lys Ala
 305 310 315 320
 Gln

<210> 7948
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 7948
 Ile Ile Arg Lys Arg Thr Cys Ile Gly Ile Gly Met Asp Glu Ile Ser
 1 5 10 15
 Ile Ile Gln Ser Asn His Ile Pro Leu Ser Phe Leu Thr Gly Lys Asp
 20 25 30
 Ala Tyr Ser Leu Tyr Asn Lys Gly Trp Gly Tyr Ser Phe Val Tyr Ser
 35 40 45
 Leu Gln Glu Val Arg Asp Ile Tyr Leu Ala Ile Gln Lys Tyr Lys Tyr
 50 55 60
 Ile Asn Leu Gly Gln Phe Thr Asp Glu Tyr Val Ile Pro His Ile Pro
 65 70 75 80
 Asn Val Gly Val Ala Trp Asn Lys Arg Arg Val Leu Glu Ile Leu Asn
 85 90 95
 Ala Leu Val Asn Phe Gly Leu Leu Thr Pro Gln Tyr Glu Leu Thr Asn
 100 105 110
 Thr Val His Leu Phe Glu Asp Tyr Gln Ile Gly Lys Pro Ile Asp Asp
 115 120 125
 Asn Asp Asn Lys Ile Phe Arg Arg Ile Phe Phe Ser Tyr His Arg Phe
 130 135 140
 Arg Asp Phe Ser Ser Leu Tyr Leu Pro Ile Asp Asn Asn Tyr Ser Asn
 145 150 155 160
 Ile Glu Glu Val Leu Leu Asn Asn Ser Met Pro Leu Phe Ser Phe Gly
 165 170 175
 Ser Glu Arg Lys Tyr Thr Asp Ser Phe Phe Lys Thr Phe Lys Asp Asn
 180 185 190
 Pro Asp Ile Tyr Tyr Ile Pro Glu Tyr Asn Lys Asp Asn Glu Lys Asn
 195 200 205
 Ser Gly Cys Lys Met Phe Trp Asp Val Phe Ile Ser Trp Gly Val Gln
 210 215 220
 Leu Lys Val Met Glu Lys Phe Asn Ser Ser Ile Phe Asn Tyr Lys Leu
 225 230 235 240
 Ser Asn Gly Lys Thr Phe Ser Cys Ser Tyr Phe Leu Ser Ser Asp Asn
 245 250 255
 Leu Leu Met Pro Ser Leu Ile Asp Phe Ile Lys Asn Asn Tyr Pro Glu
 260 265 270
 Arg Lys Asn Ile Asp Leu Ser Leu Leu Ile Phe Thr Leu Cys Thr Ile
 275 280 285
 Phe Arg Lys Ser Leu Ser Ser Thr Lys Asp Tyr Ile Ile Glu Glu Tyr
 290 295 300
 Lys Arg Asn Lys Glu Tyr Ile Ser Leu Val Arg Thr Ser Glu Val Phe
 305 310 315 320
 Ile Lys Ser Gly Lys Phe Ala Glu Asn Ser Thr Val Ile Tyr Pro Lys
 325 330 335
 Tyr Lys Asp Ser Phe Ile Ser His Leu Ile Ile Arg Leu
 340 345

<210> 7949

<211> 357
 <212> PRT
 <213> B.fragilis

<400> 7949

```

Arg Met Arg Lys Ile Gly Leu Leu Phe Ile Thr Ile Phe Cys Leu Leu
1          5          10          15
Ala Cys Lys Asn Asn Ser Ser Arg Ile Ser Leu Glu Gly Glu Ile Lys
          20          25          30
Gly Leu Thr Asn Asp Thr Leu Tyr Leu Tyr Gly Thr Asp Ala Leu Tyr
          35          40          45
Asp Arg Ile Asp Thr Ile Tyr Ala Glu Lys Gly Lys Phe Ser Tyr Asn
          50          55          60
Leu Asn Ile Asp Ser Thr Val Ile Asp Thr Leu Thr Thr Ala Val Leu
          65          70          75          80
Leu Ile Asn Gly His Val Glu Tyr Pro Val Phe Leu Asp Lys Gly Asn
          85          90          95
Gln Ile Thr Ile Lys Gly Asn Ile Asp Asp Leu Ser Tyr Leu Asp Ile
          100          105          110
Asn Gly Asn Glu Pro Asn Thr Ser Leu Ser Leu Phe Met Lys Glu Gln
          115          120          125
Arg Gly Leu Gly Ser Ala Ser Asp Lys Met Met Gln Glu Lys Ala Glu
          130          135          140
Thr Phe Ile Arg Gln His Asn Ser Ser Leu Ala Ser Val Tyr Leu Leu
          145          150          155          160
Asp Lys Tyr Phe Val Gln Thr Pro Gln Pro Asp Tyr Ile Lys Ile Lys
          165          170          175
Glu Ile Thr Glu Ala Met Thr Gly Ala Leu Leu Asp Arg Pro Tyr Ile
          180          185          190
Glu Asn Ile Ser Asp Tyr Ile Asp Gln Leu Glu Lys Val Thr Val Gly
          195          200          205
Lys Ser Ala Pro Tyr Phe Ser Leu Pro Asn Glu Lys Gly Glu Lys Leu
          210          215          220
Ser Arg Ser Ala Glu Arg Phe Arg Asn Arg Tyr Leu Leu Leu Asn Phe
          225          230          235          240
Trp Ala Ser Trp Cys Asp Pro Gln Pro Glu Thr Asn Ala Glu Leu Lys
          245          250          255
Arg Leu Asn Lys Glu Tyr Lys Lys Asn Lys Asn Phe Val Met Leu Gly
          260          265          270
Ile Ser Leu Asp Ile Asp Arg Glu Ala Trp Glu Thr Ala Ile Lys Lys
          275          280          285
Asp Thr Leu Ser Trp Asp Gln Val Cys Asp Phe Thr Gly Leu Ser Ser
          290          295          300
Glu Thr Ala Lys Gln Tyr Ala Ile Leu Thr Leu Pro Thr Asn Ile Leu
          305          310          315          320
Leu Ser Pro Thr Gly Lys Ile Leu Ala Arg Asp Ile Gln Gly Glu Ala
          325          330          335
Leu Thr Asp Lys Leu Lys Glu Leu Leu Lys Thr Glu Glu Lys Lys Pro
          340          345          350
Gly Lys Ser Ile Arg
          355

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<210> 7950
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 7950

Ile Val Gly Lys Ser Ser Cys Ser Ser Val Ala Ser Arg Leu Asn Ile

1		5		10		15								
Arg	Ser	Lys	Thr	Ile	Ser	Cys	Thr	Ser	Gly	Arg	Gln	Phe	Gly	Leu
		20				25					30			
Ser	Thr	Leu	Ile	Thr	Thr	Ile	Gly	Phe	Asn	Pro	Ile	Ser	Lys	Ala
		35				40					45			
Phe	Cys	Ser	Thr	Lys	Arg	Val	Cys	Gly	Ile	Gly	Pro	Ser	Lys	Ala
	50					55					60			
Thr	Asn	Arg	Met	His	Pro	Ser	Ala	Met	Leu	Ser	Thr	Arg	Ser	Thr
65					70					75				80
Pro	Pro	Lys	Ser	Leu	Cys	Pro	Gly	Val	Ser	Ile	Ile	Leu	Ile	Leu
				85					90					95
Pro	Leu													

<210> 7951
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 7951															
Lys	Asp	Met	Lys	Gln	Glu	Tyr	Leu	Ile	Glu	Leu	Val	Asn	Cys	Ser	Thr
1			5						10					15	
Glu	Asp	Ser	Ile	Met	Leu	Gln	Val	Asn	Glu	Thr	Asp	Thr	Ser	Val	Lys
			20					25					30		
Ala	Met	Lys	Ser	Trp	Ile	Met	Gln	Gln	Glu	Thr	Ile	Gln	Pro	Cys	Lys
		35					40					45			
Lys	His	His	Leu	His	Ile	Ile	Gly	Asn	Lys	Thr	Cys	Asp	Leu	Glu	Leu
	50					55					60				
Glu	Asp	Val	Tyr	Thr	Leu	Cys	Lys	Ile	Ile	Gln	Ala	Val	Val	Ala	Glu
65					70					75					80
Pro	Leu	Ser	Trp	Asp	Ile	Ile	Glu	Arg	Val	Leu	Ser	Glu	Lys	Asp	Ser
				85					90					95	
Asn	Leu	Val	Ala	Ser	Leu	Leu	Leu	Tyr							
			100					105							

<210> 7952
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 7952															
Arg	Leu	Met	Asn	Glu	Lys	Glu	Ala	Ile	Ile	Lys	Leu	Lys	Thr	Cys	Asn
1			5						10					15	
Asp	Lys	Ala	Ala	Phe	Ala	Phe	Leu	Tyr	Arg	Ser	Tyr	Trp	Ala	Lys	Val
		20						25					30		
Tyr	Asn	Phe	Thr	Arg	Leu	Tyr	Ile	Thr	Ser	Ala	Val	Asp	Val	Glu	Glu
		35					40					45			
Ile	Val	Gln	Glu	Val	Phe	Ile	Lys	Ile	Trp	Glu	Asn	Arg	Glu	Ala	Leu
	50					55					60				
Asp	Glu	Glu	Gln	Asn	Phe	Ala	Gly	Tyr	Leu	Phe	Ile	Thr	Met	Arg	Asn
65				70					75						80
Leu	Val	Phe	Asn	Arg	Ser	Arg	Lys	Asn	Leu	Asn	Glu	Pro	Phe	Tyr	Gln
			85					90						95	
Leu	Ser	Val	Ile	Glu	Ala	Val	Glu	Glu	Ser	Tyr	Asp	Ile	Glu	Glu	Glu
		100					105					110			
Leu	Asp	Ala	Ala	Asn	Leu	Arg	Thr	His	Ile	Ser	Ala	Leu	Ile	Ser	Met
	115						120					125			
Leu	Pro	Pro	Arg	Gln	Gln	Glu	Val	Phe	Arg	Leu	Ser	Arg	Asp	Glu	Glu
	130					135					140				

Leu Ser Tyr Arg Glu Ile Ala Glu Arg Leu Gln Ile Ser Glu Arg Thr
 145 150 155 160
 Val Glu His His Ile Ser Asp Ala Leu Lys Phe Leu Arg Lys Asn Ile
 165 170 175
 Lys Leu Tyr Leu Leu Phe Leu Ser Leu
 180 185

<210> 7953
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 7953
 Glu Ile Met Lys Leu Asn Tyr Leu Leu Ile Leu Ile Ile Cys Val Leu
 1 5 10 15
 Leu Leu Cys Phe Asn Leu Tyr Ile Phe Lys Gln Asn Ser Ala Ser Asp
 20 25 30
 Arg Met Gln Asp Thr Ile Ile Arg Leu Ala Tyr Glu Asp Ser Ile Lys
 35 40 45
 Glu Ser Ser His Arg Ile Glu Arg Glu Ile Arg Asn Tyr Glu Leu Arg
 50 55 60
 Thr Asn Gly Lys Val Met Asn Pro Leu Phe Glu Val Phe Asp Thr Asn
 65 70 75 80
 Gly Asp Lys Arg Thr Leu Ser Lys Ile Ile Asp Gly Asn Lys Phe Val
 85 90 95
 Leu Arg Tyr Ser Glu Leu Asn Cys Asn Thr Cys Val Asn Lys Gln Ile
 100 105 110
 Glu Leu Leu Asn Leu Tyr Val Asp Ser Ile Gly Val Asp His Ile Ile
 115 120 125
 Leu Leu Thr Asn Tyr Asp Ser Asn Phe Tyr Met Lys Gln Phe Lys Arg
 130 135 140
 Ile Ser Lys Ile Lys Tyr Pro Ile Phe Asn Ile Gly Ala Asn Leu Asn
 145 150 155 160
 Glu Cys Ile Pro Asp Ile Glu Arg Pro Tyr Phe Phe Ile Ile Asp Ser
 165 170 175
 Asn Phe Arg Ile Asn Ser Val Tyr Val Pro Gln Ile Asp Glu Ser Asn
 180 185 190
 Val Thr Lys Thr Tyr Phe His Arg Ile Leu Gln Tyr Tyr Phe Asp Ile
 195 200 205
 Pro

<210> 7954
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 7954
 Ser Lys Met Lys Lys Val Ser Ile Leu Ala Ala Val Ala Met Ala Thr
 1 5 10 15
 Gly Leu Ala Ser Cys Thr Ala Gln Ala Pro Lys Ala Thr Leu Lys Thr
 20 25 30
 Asp Val Asp Ser Leu Ser Tyr Ala Ile Gly Ile Ser Gln Thr Gln Gly
 35 40 45
 Leu Lys Asp Tyr Leu Ser Gln Arg Met Glu Met Asp Thr Thr Tyr Met
 50 55 60
 Ala Asp Phe Leu Lys Gly Val Asn Asp Ala Ala Asn Lys Thr Ser Lys
 65 70 75 80
 Lys Asp Gln Ala Tyr Leu Leu Gly Leu Gln Ile Gly Ser Gln Met Ala


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      195              200              205
Ser Phe Tyr Ala Glu Asp Gly Lys Thr Ile Thr Gln Lys Glu Asn Leu
  210              215              220
Ser Thr Asp Val Ile Glu Tyr Tyr Asp Asn Gly Thr Leu Thr Lys Ser
 225              230              235              240
Ile Lys Ile Leu Lys Glu Asp Gly Asp Glu Tyr Tyr Glu Val Ser Leu
      245              250              255
Tyr Lys Asn Asn Ser Ile Tyr Ser Lys Lys Val Val Asp Arg Asn Gly
      260              265              270
Asn Asp Ala Glu Leu Ile Lys Lys Glu Lys Gln Leu Ala Leu Gln Tyr
      275              280              285
Asp Ser Leu Tyr Asn Arg Leu Lys Glu Met Leu His Ser Asn Val Ser
      290              295              300
Met Asn Ile Thr Lys Met Val Phe Ala Asn Pro Asp Arg Val Tyr Cys
 305              310              315              320
Arg Lys Gly Gln Tyr Glu Ser Ser Gly Lys Phe Ser Ala Leu Glu Ala
      325              330              335
Ile Ile Arg Thr His Glu Lys Glu Leu Asp Asp Val Val Arg Gln Arg
      340              345              350
Asn Glu Tyr Thr Glu Arg Gly Phe Lys Arg Asn Asp Gly Lys Tyr Tyr
      355              360              365
Lys Ser Val Glu Gln Ile Lys Glu Tyr Ile Asp Lys Ile Ser Gln Asn
 370              375              380
Phe Met Gln Lys Tyr Asp Thr Leu Ser Val Met Lys Lys Ile Ala Glu
 385              390              395              400
Gln Ile Asn Asp Asp Leu Tyr Tyr Ile Glu Cys Ser Tyr Thr Tyr Tyr
      405              410              415
Thr Gly Gln Gln Gly Tyr Lys Asp Asn Val Pro Gly Lys His Lys Asn
      420              425              430
Ala Tyr Lys Ala Tyr Ile Ser Thr Thr Glu Tyr Leu Thr Ser Asn Met
      435              440              445
Glu Gly Lys Asn Leu Ser Glu Thr Leu Thr Met Leu Gln Gln Tyr Ala
      450              455              460
Thr Ile Ser Ser Lys Met Arg Lys Trp Tyr Asn Met Lys Ile Thr Pro
 465              470              475              480
Ile Glu Lys Leu Phe Lys Lys Thr Glu Ile Pro Glu Thr Gln Leu Asn
      485              490              495
Ile Phe Met Asn Asn Asp Val Glu
      500

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<210> 7956

<211> 466

<212> PRT

<213> B.fragilis

<400> 7956

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Phe Leu Met Lys His Phe Thr Gly Ile Leu Phe Leu Leu Leu Leu Cys
 1              5              10              15
Phe Ser Cys Thr Pro Val His Asp Ala Pro Leu Glu Gln Ala Leu Thr
      20              25              30
Leu Ala Gly Asp Asn Arg Lys Glu Leu Gln Gln Val Leu Gly His Tyr
      35              40              45
Glu Gly Asp Ser Leu Lys His Lys Ala Ala Cys Phe Leu Ile Glu Asn
      50              55              60
Met Ile Gly Lys Gly Thr Ile Arg Tyr Leu Leu Arg Glu Ser Asp Ser
      65              70              75              80
Cys Tyr Ile Arg Gln Glu Pro Glu Pro Asp Leu Thr Cys Ile Thr Ala
      85              90              95
Asp Tyr Leu Ile Glu Asn Ile Asp Leu Ala Phe Glu Val Trp Gln Lys

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      100              105              110
Tyr Pro Trp Cys Lys Gln Leu Ser Phe Arg Glu Phe Cys Arg Asn Ile
      115              120              125
Leu Pro Tyr Arg Leu Lys Gln Glu Pro Leu Asp Arg Trp Arg Ser Tyr
      130              135              140
Tyr Tyr Thr Arg Tyr Lys Met Thr Val Asp Ser Leu Ala Arg Ala Gly
145              150              155              160
Ala Thr Met Arg Glu Ile Val Phe Phe Phe Asn Ser Arg His Gly Lys
      165              170              175
Lys Tyr Leu His Asp Ala Ala Lys Ile Pro Gly Asp Phe Ser Ile Glu
      180              185              190
Leu Ile Glu Lys Leu Gly Gly Gly Thr Cys Asp His Leu Ala Leu Asn
      195              200              205
Ala Val Gln Leu Met Arg Ala Val Gly Ile Pro Leu Asn Leu Asp Ile
      210              215              220
Leu Pro Tyr His Gly Lys Val Asn Gly Gly His Ala Tyr Asn Ser Phe
225              230              235              240
Thr Asp Glu Asn Gly Lys Phe Phe Tyr Phe Ser Pro Tyr Glu Arg Glu
      245              250              255
Pro Glu Arg Asn Gln Trp Ile Ala Pro Leu Ile Gln Arg Val Cys Tyr
      260              265              270
Glu Arg Gln Pro Glu Pro Lys Ile Gly Arg Asn Arg Trp Asn Ala Gln
      275              280              285
Leu Val Asn Arg Leu Leu Lys Glu Val Thr Ala Glu Tyr Tyr Leu Ser
      290              295              300
Asp Ser Val Arg Leu Pro Val His Thr Ser Asp Thr Val Ala Tyr Ile
305              310              315              320
Ala Thr Phe Asn Arg Gly Ala Phe Lys Val Val Ser Gln Gly Arg Val
      325              330              335
Glu Ser Asn Ser Val Leu His Arg Val Leu Pro Tyr Gly Leu Leu Tyr
      340              345              350
Phe Gln Met Ala Asp Lys Lys Gly Lys Leu Val Pro Thr Gly Ser Pro
      355              360              365
Phe Val Met Thr Pro Asp Ser Ile His Phe Ile Thr Pro Ile Arg Gln
      370              375              380
Thr Thr Val Leu Asn Gly Ile Leu Thr Tyr Asp Val Lys Arg Val Leu
385              390              395              400
Glu Leu Gly Asp Glu Ala Tyr Thr Leu Tyr Tyr Trp Lys Asp Gly Trp
      405              410              415
Gln Pro Val Lys Glu Val Thr Ser Lys Asp Ser Arg Thr Leu Asp Phe
      420              425              430
Gly Glu Val Pro Val Arg Ser Leu Phe Leu Val Cys Gly Asn Thr Tyr
      435              440              445
Met Gly Arg Met Gln Arg Pro Phe Leu Leu Glu Asp Gly Lys Pro Val
      450              455              460
Tyr Tyr
465

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<210> 7957

<211> 119

<212> PRT

<213> B.fragilis

<400> 7957

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Thr Tyr Lys Asn Met Asn Asn Lys Asn Ile Phe Thr Gln Asn Cys Val
1              5              10              15
Lys Tyr Ser Leu Lys Asn Ala Thr Gln Glu Phe Ser Leu Ile Arg Leu
      20              25              30
Arg Met Thr Ile Gly Gly Val Arg Phe Ser Tyr Cys Leu Pro Val Glu

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      35              40              45
Tyr Lys Ile Lys Ser Ser Phe Trp Asp Lys Glu Ala Gly Lys Ala Ile
  50              55              60
Glu Asp Ala Lys Arg Asn Thr Glu Leu Lys Gly Asn Pro Met Leu Gln
  65              70              75              80
Val Ala Leu Arg Asn Ile Asn Lys Glu Ile Glu Lys Thr Thr Asn Thr
      85              90              95
Leu Ile Lys Gln Lys Pro Gly Tyr Asn Pro Asp Ser Gln Pro Asp Lys
      100              105              110
Arg Arg Val Asp Lys Gly Thr
      115

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<210> 7958

<211> 370

<212> PRT

<213> B.fragilis

<400> 7958

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Asn Ile Asn Leu Lys Thr Asn Ile Met Arg Lys Ala Leu Leu Thr Val
  1              5              10              15
Ile Ser Phe Thr Leu Cys Leu Tyr Ile Thr Ser Cys Ser Gln Ser Ser
      20              25              30
Lys Pro Glu Lys Ala Arg Thr Ile Glu Thr Ile Ala Thr Asp Ala Gln
      35              40              45
Gln Thr Leu Ser Phe Asn His Glu Pro Leu Ser Ile Asp Pro Ile Gly
      50              55              60
Ile Gly Asp Ile Ile Val Thr Asp Thr Phe Leu Ile Leu Ala Leu Asn
      65              70              75              80
Lys Glu Glu Asn Met Leu His Val Tyr Asn Leu Pro His Leu Gln Phe
      85              90              95
Leu Gly Ser Phe Gln Lys Ile Gly Asn Gly Pro Asp Glu Val Ile Leu
      100              105              110
Pro Ser Ala Phe Thr Gln Trp Phe Asn Lys Asp Gly Gln Ile Gln Leu
      115              120              125
Val Met Arg Ser Tyr Gln Lys Phe Thr Gly Leu Leu Asn Ile Ser Lys
      130              135              140
Ser Leu Ile Glu Asn Lys Ala Ile Tyr Asp Asn Lys Tyr Thr Tyr Asn
      145              150              155              160
Ala Pro Lys Gly Lys Asn Ser Phe Gln Gln Ser Ser Val Ser Tyr Leu
      165              170              175
Leu Gly Asp Ser Ile Phe Leu Ile Asn Arg Ser Ile Ile Met Arg Pro
      180              185              190
Gln Asp Asn Gln Asn Asp Phe Phe Glu Val Tyr Asp Tyr Lys Asn Asp
      195              200              205
Ser Ile Leu Arg Ser Phe Tyr Ala Ser Asn Phe Pro Lys Glu Leu Leu
      210              215              220
Glu His His Gly Arg Asp Gln Ala Phe Gln Lys Asp Ile Ala Ile Ser
      225              230              235              240
Asn Asp Cys Lys Lys Met Val Ile Ala Tyr Arg Phe Leu Asn Met Ile
      245              250              255
Ser Ile Val Asn Ile Glu Lys Glu Glu Ile Asn Asn Leu Phe Thr Asp
      260              265              270
Gly Asn Lys Leu Asn Trp Glu Gln Val Ile Glu Gly Thr Pro Lys Pro
      275              280              285
Tyr Tyr Thr Lys Val His Cys Asn Asn Ala Tyr Ile Trp Ala Met Ala
      290              295              300
Ile Glu Gly Glu Asp Pro Ser Thr Phe Arg Ser Arg Leu Asp Ile Phe
      305              310              315              320
Asp Trp Lys Gly Asn Tyr Leu Cys Lys Ala His Leu Asp Lys Trp Val

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325 330 335
 Ser Ser Phe Ser Ile Asp Glu Arg Asn Gln Thr Met Tyr Ala Val Thr
 340 345 350
 Ala Asp Asp Met Leu Val Arg Tyr Asn Ile Lys Glu Leu Leu Asp Gln
 355 360 365
 Leu Pro
 370

<210> 7959
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 7959
 Ile Val Tyr Asp Asn Tyr Pro Lys Tyr Asp Ser Phe Val Arg Met Lys
 1 5 10 15
 Trp Asn Val Leu Leu Tyr Gly Leu Leu Phe Ser Gly Leu Gly Ile Phe
 20 25 30
 Ser Tyr Leu Leu Leu Val Asn Tyr Thr Glu Leu Thr Pro Lys Val Ala
 35 40 45
 Asp Val Leu Tyr Ser Lys Gly Ala Phe Val Phe Phe Ile Thr Ala Phe
 50 55 60
 Asn Val Leu Gly Tyr Ser Thr Leu Arg Ile Ser Ser Trp Ile Asn Thr
 65 70 75 80
 Gln Tyr Ala Leu Asn Ile Arg His Arg Trp Lys Ile Ile Val Ile Tyr
 85 90 95
 Val Ala Val Ile Leu Leu Phe Leu Leu Leu Asn Tyr Ser Leu Leu Ile
 100 105 110
 Ala Ala Lys Leu Leu Ala Gly Ile Asp Asn Leu Phe Thr Phe Ser Asn
 115 120 125
 Gly Gly Trp Arg Ile Leu Ile Val Val Trp Leu Val Glu Leu Val Ile
 130 135 140
 Val Gly Leu Leu Leu Ala Asn Arg Ser Ile Gln Asn Asn Leu Lys Leu
 145 150 155 160
 Gln Gln Glu Ala Ala Lys Leu Gln Thr Glu Asn Asp Thr Ala Arg Tyr
 165 170 175
 Ala Ala Leu Gln Ser Gln Leu Asn Pro His Phe Leu Phe Asn Ser Leu
 180 185 190
 Asn Thr Leu Ile Ala Glu Ile Glu Tyr Asn Pro Gly Asn Ala Val His
 195 200 205
 Phe Thr Lys His Leu Ser Ser Val Tyr Arg Tyr Val Leu Gln Cys Gln
 210 215 220
 Asp Lys Thr Leu Val Thr Leu Thr Glu Glu Leu Glu Phe Leu Gln Ser
 225 230 235 240
 Tyr Leu Phe Leu His Lys Val Arg Leu Gly Asp Cys Ile Ser Cys Asn
 245 250 255
 Cys Cys Ile Ala Ser Gly Tyr Thr Ser Cys Met Leu Pro Pro Leu Thr
 260 265 270
 Leu Gln Leu Leu Ala Glu Asn Val Ile Asn His Asn Ser Ile Thr Leu
 275 280 285
 Ser Lys Pro Met Lys Ile Asp Ile Arg Leu Glu Glu Gly Tyr Leu Ala
 290 295 300
 Val Ser Asn Pro Ile Gln Pro Lys Lys Ser His Glu Ser Pro Gly Val
 305 310 315 320
 Gly Leu Lys Asn Leu Ser Asn Arg Cys Gln Leu Met Leu Gly Lys Glu
 325 330 335
 Ile Ile Val His Asn Asp Glu Lys Val Phe Ile Val Lys Val Pro Leu
 340 345 350
 Leu Tyr Glu

355

<210> 7960

<211> 380

<212> PRT

<213> B.fragilis

<400> 7960

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Arg Leu Asn Glu Cys Arg Phe Lys Arg His Leu Ser Lys Arg Lys Tyr
1      5      10      15
Gln Lys Gly Arg Ile Gln Ile Phe Lys Thr Val Asn Thr Ile Phe Tyr
      20      25      30
Thr Ser Met Asn Thr Ile Lys Ile Asp Gln Gln Leu Lys Arg Ile Gln
      35      40      45
Ile Lys Glu Phe Glu Ile Glu Asn Glu Ile Val Phe Asn Phe Phe Asn
      50      55      60
Arg Ile Ser Ala Ser Glu Arg Asp Asp Lys Leu Val Gln Ala Ile Tyr
65      70      75      80
Ile Gly Ile Leu Ala Leu Met Glu Asp Arg Phe Ser Ser Phe Leu Ser
      85      90      95
Lys Thr Ser Asn Glu Leu Gly Ala Glu Leu Glu Ser Leu Lys Met Ile
      100     105     110
Phe Asp Met Lys Lys Glu Val Phe Tyr Lys Ser Ser Ile Lys Gly Ile
      115     120     125
Leu Ala Glu Asn Asp Ile Ala Glu Phe Leu Ile Asp His Phe Lys Asp
      130     135     140
Lys Lys Ile Ser Asp Glu Val Phe Leu Thr Gly Asn Ile Ala Gly Lys
145     150     155     160
Leu Ser Lys Asn Lys Thr Gly Asp Ile Val Cys Cys Ile Glu Gly Lys
      165     170     175
Glu Glu Gln Lys Ile Val Ile Glu Cys Lys Phe Asp Lys Ser Ile Arg
      180     185     190
Leu Gly Asp Ile Glu Ser Lys Asp Ile Phe Thr Arg Lys Thr Asp Thr
      195     200     205
Ala Trp Ser Gln Leu Leu Glu Ala Gln Val Asn Arg Glu Ala Gln Val
      210     215     220
Gly Ile Ile Val Leu Asp Ile Ser Leu Val Asp Asn Ser Val Phe Lys
225     230     235     240
Lys Tyr Glu Asn Ile Gly Tyr Ile Pro Asn Val Gly Phe Ile Ala Ile
      245     250     255
Ile Asp Ser Gln Lys Gly Asp Tyr Ser Asn Leu Ser Ile Ala Tyr Phe
      260     265     270
Leu Ala Arg Asp Ile Ile Leu Asn Ser His Lys Val Glu Phe Asn Lys
      275     280     285
Asp Ile Leu Thr Ile Ile Val Gly Arg Ile Ile Lys Asp Ile Asn Glu
      290     295     300
Ile Lys Thr Ile Lys Ser Cys Val Ile Asn Asn Ile Glu Asn Asn Lys
305     310     315     320
Ile Ile Leu Arg Gln Leu Glu Lys Ser Met Leu Leu Met Glu Phe Asn
      325     330     335
Gln Glu Tyr Leu Ile Lys Phe Leu Lys Asp Gly Thr Leu Thr Lys Glu
      340     345     350
Asp Leu Leu Glu Phe Tyr Gln Gly Glu Thr Ile Lys Glu Arg Tyr Lys
      355     360     365
Ile Ile Glu Lys Glu Ile Asp Asn Glu Phe Ser Ser
      370     375     380

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<210> 7961

<211> 384

<212> PRT

<213> B.fragilis

<400> 7961

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Thr Glu Cys Glu Ile Ala Asn Cys Met Glu Glu Asn Ser Ile Lys Ile
1      5      10      15
His Lys Trp Leu Tyr Pro Ala Ser Trp Leu Tyr Gly Ala Gly Val Ala
      20      25      30
Leu Arg Asn Lys Leu Phe Asp Trp Gly Lys Leu Gln Ser Lys Ser Phe
      35      40      45
Asn Val Pro Ile Ile Cys Ile Gly Asn Ile Ala Val Gly Gly Thr Gly
      50      55      60
Lys Thr Pro His Thr Glu Tyr Leu Ile Lys Leu Leu His Asp Glu Phe
      65      70      75      80
Gln Val Ala Val Leu Ser Arg Gly Tyr Lys Arg His Thr Lys Gly Phe
      85      90      95
Val Leu Ser Thr Ala Glu Ser Asp Ala Arg Ser Ile Gly Asp Glu Pro
      100     105     110
Tyr Gln Ile Gln Ser Lys Phe Ser Asp Ile Arg Val Ala Val Asp Glu
      115     120     125
Asp Arg Cys His Gly Ile Glu Arg Leu Leu Thr Leu Lys Glu Pro Pro
      130     135     140
Val Glu Val Ile Leu Leu Asp Asp Ala Phe Gln His Arg Tyr Val Lys
      145     150     155     160
Ala Gly Leu Asn Ile Leu Leu Thr Asp Tyr His Arg Leu Phe Cys Asp
      165     170     175
Asp Thr Leu Met Pro Ala Gly Arg Leu Arg Glu Ser Ala Gln Gly Lys
      180     185     190
Asn Arg Ala Gln Ile Val Ile Val Thr Lys Cys Pro Pro Asp Ile Lys
      195     200     205
Pro Ile Asp Tyr Asn Ile Ile Thr Lys Arg Leu Asn Leu Phe Pro Tyr
      210     215     220
Gln Gln Leu Tyr Phe Ser Ser Phe Arg Tyr Gly Asn Leu Arg Ala Val
      225     230     235     240
Phe Pro Asp Cys Ala Thr Val Gln Glu Arg Lys Leu Ser Ser Leu Gln
      245     250     255
Thr Glu Glu Gln Ile Leu Leu Ile Thr Gly Ile Ala Ser Pro Asp Thr
      260     265     270
Ile Ile Arg Glu Leu Glu Ile His Thr Arg Asn Ile Asp Leu Leu Ala
      275     280     285
Phe Ser Asp His His Asn Phe Ser Gln Arg Asp Leu Ala Gln Ile Lys
      290     295     300
Glu Arg Phe Gly Lys Leu Arg Lys Gly Gln Arg Leu Ile Val Thr Thr
      305     310     315     320
Glu Lys Asp Ala Thr Arg Leu Ile Cys His Gln Glu Leu Asp Glu Gly
      325     330     335
Leu Lys Pro Phe Ile Tyr Ala Leu Pro Ile Glu Val Glu Ile Leu Gln
      340     345     350
Asn Gln Gln Asp Asn Phe Asn Gln His Ile Ile Gly Tyr Val Arg Glu
      355     360     365
Asn Thr Arg Asn Gly Ser Leu Pro Glu Arg Lys Asp Ala His Lys Ser
      370     375     380

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<210> 7962

<211> 1087

<212> PRT

<213> B.fragilis

<400> 7962

Asp Tyr Trp Leu Gln Gly Pro Tyr Phe Trp Gly Ser Thr Gly Leu Gly
 945 950 955 960
 Gln Trp Gln Ala Ala Gly Phe Lys Glu His Trp Asp Phe Trp Arg Pro
 965 970 975
 Glu Gly Asp Pro Leu Gly Ala Asn Thr Asn Ala Tyr Tyr Pro Arg Val
 980 985 990
 Ala Arg Asn Gly Gly Lys Asn Thr Asn Val Gln Ser Arg Tyr Leu Gln
 995 1000 1005
 Asn Ala Ala Tyr Cys Arg Leu Lys Asn Ile Gln Ile Gly Tyr Thr Leu
 1010 1015 1020
 Pro Lys Thr Trp Thr Glu Lys Ala Gly Met Ser Ser Val Arg Val Tyr
 1025 1030 1035 1040
 Val Ser Gly Asp Asn Leu Leu Thr Phe Ser Asp Ile Thr Gly Ile Phe
 1045 1050 1055
 Asp Pro Glu Ala Ile Gly Ser Thr Tyr Asp Ala Asn Asn Gly Lys Leu
 1060 1065 1070
 Tyr Pro Leu Gln Arg Val Ile Ser Val Gly Leu Asn Val Asn Phe
 1075 1080 1085

<210> 7963
 <211> 638
 <212> PRT
 <213> B.fragilis

<400> 7963
 Ala Cys Lys Asp Arg His Tyr Leu Leu Ser His Asn Glu Leu Gln Glu
 1 5 10 15
 Ile Phe Ser Ile Val Ser Leu Phe Ser Asn Pro Ile Phe Val Pro Leu
 20 25 30
 Ser Pro Asn Asn Arg Tyr Tyr Met Gln Asn Ile Arg Asn Ile Ala Ile
 35 40 45
 Ile Ala His Val Asp His Gly Lys Thr Thr Leu Val Asp Lys Met Leu
 50 55 60
 Leu Ala Gly Asn Leu Phe Arg Gly Asn Gln Thr Ser Gly Glu Leu Ile
 65 70 75 80
 Leu Asp Asn Asn Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Leu Ser
 85 90 95
 Lys Asn Val Ser Ile Asn Tyr Asn Gly Thr Lys Ile Asn Ile Ile Asp
 100 105 110
 Thr Pro Gly His Ser Asp Phe Gly Glu Val Glu Arg Val Leu Asn
 115 120 125
 Met Ala Asp Gly Cys Ile Leu Leu Val Asp Ala Phe Glu Gly Pro Met
 130 135 140
 Pro Gln Thr Arg Phe Val Leu Gln Lys Ala Leu Glu Ile Gly Leu Lys
 145 150 155 160
 Pro Ile Val Val Ile Asn Lys Val Asp Lys Pro Asn Cys Arg Pro Asp
 165 170 175
 Glu Val His Glu Met Val Phe Asp Leu Met Phe Ser Leu Asp Ala Thr
 180 185 190
 Glu Glu Gln Leu Asp Phe Pro Thr Ile Tyr Gly Ser Ala Lys Asn Asn
 195 200 205
 Trp Met Ser Thr Asp Trp Lys Glu Gln Thr Asp Ser Ile Val Pro Leu
 210 215 220
 Leu Asp Cys Ile Val Glu Asn Ile Pro Ala Pro Glu Gln Leu Glu Gly
 225 230 235 240
 Thr Pro Gln Met Leu Ile Thr Ser Leu Asp Tyr Ser Ser Tyr Thr Gly
 245 250 255
 Arg Ile Ala Val Gly Arg Val His Arg Gly Thr Leu Lys Glu Gly Met
 260 265 270

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Asn Val Ser Leu Ala Lys Arg Asp Gly Ser Ile Val Lys Ser Lys Ile
 275                               280               285
Lys Glu Val His Val Phe Glu Gly Leu Gly Arg Val Lys Thr Thr Glu
 290                               295               300
Val Ser Ser Gly Asp Ile Cys Ala Leu Val Gly Ile Asp Gly Phe Glu
305                               310               315               320
Ile Gly Asp Thr Ile Cys Asp Tyr Glu Asn Pro Glu Ala Leu Pro Pro
 325                               330               335
Ile Ala Ile Asp Glu Pro Thr Met Ser Met Leu Phe Ala Ile Asn Asp
 340                               345               350
Ser Pro Phe Tyr Gly Lys Asp Gly Lys Phe Val Thr Ser Arg His Ile
 355                               360               365
His Asp Arg Leu Thr Lys Glu Leu Asp Lys Asn Leu Ala Leu Arg Val
 370                               375               380
Arg Lys Ser Glu Glu Asp Gly Lys Trp Val Val Ser Gly Arg Gly Val
385                               390               395               400
Leu His Leu Ser Val Leu Ile Glu Thr Met Arg Arg Glu Gly Tyr Glu
 405                               410               415
Leu Gln Val Gly Gln Pro Gln Val Ile Tyr Lys Glu Ile Asp Gly Val
 420                               425               430
Lys Cys Glu Pro Ile Glu Glu Leu Thr Ile Asn Val Pro Glu Glu Tyr
 435                               440               445
Ser Ser Lys Ile Ile Asp Met Val Thr Arg Arg Lys Gly Glu Met Thr
 450                               455               460
Met Met Glu Asn Thr Gly Glu Arg Ile Asn Leu Glu Phe Asp Met Pro
465                               470               475               480
Ser Arg Gly Ile Ile Gly Leu Arg Thr Asn Val Leu Thr Ala Ser Ala
 485                               490               495
Gly Glu Ala Ile Met Ala His Arg Phe Lys Glu Tyr Gln Pro Phe Lys
 500                               505               510
Gly Asp Ile Glu Arg Arg Thr Asn Gly Ser Ile Ile Ala Met Glu Ser
 515                               520               525
Gly Thr Ala Phe Ala Tyr Ala Ile Asp Lys Leu Gln Asp Arg Gly Lys
 530                               535               540
Phe Phe Ile Phe Pro Gln Glu Glu Val Tyr Ala Gly Gln Val Val Gly
545                               550               555               560
Glu His Ala His Glu Lys Asp Leu Val Val Asn Val Thr Lys Ser Lys
 565                               570               575
Lys Leu Thr Asn Met Arg Ala Ser Gly Ser Asp Glu Lys Ala Arg Leu
 580                               585               590
Ile Pro Pro Val Gln Phe Ser Leu Glu Glu Ala Leu Glu Tyr Ile Lys
 595                               600               605
Glu Asp Glu Tyr Val Glu Val Thr Pro Lys Ala Met Arg Met Arg Lys
 610                               615               620
Val Ile Leu Asp Glu Thr Glu Arg Lys Arg Ala Asn Lys Ser
625                               630               635

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<210> 7964

<211> 435

<212> PRT

<213> B.fragilis

<400> 7964

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Asp Lys Arg Glu Met Met Met Lys Lys Ile Asn Arg Trp Leu Ile Phe
 1                               5               10               15
Leu Leu Cys Val Pro Thr Val Ala Phe Ala Gln Gln Asn Ser Leu Leu
 20                               25               30
Gln Lys Tyr Arg Ser Met Ala Leu Asp Tyr Asn His Asp Leu Lys Ala
 35                               40               45

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Ala Asp Lys Asn Ile Ala Ala Ser Ile Glu Leu Glu Lys Ala Ala Gln
 50 55 60
 Lys Asp Leu Arg Pro Lys Leu Ser Gly Glu Ala Asn Phe Gln Tyr Thr
 65 70 75 80
 Gly Asn Pro Leu Gln Leu Asn Ile Asp Leu Pro Ser Met Gln Thr Pro
 85 90 95
 Leu Ala Phe Glu Gly Arg Asn Met Lys Tyr Gly Ala Ser Leu Ser Leu
 100 105 110
 Leu Gln Pro Val Tyr Thr Gly Gly Arg Leu Leu Glu Ser Ile Arg Met
 115 120 125
 Ala Lys His Gln Gln Ser Leu Ala Ile His Gln Ala Asp Tyr Phe Arg
 130 135 140
 Ser Ala Val Ser Tyr Gln Thr Asp Met Gln Tyr Trp Asn Thr Val Ala
 145 150 155 160
 Arg Ala Glu Ile Val Arg Val Thr Thr Glu Tyr Arg Asn Ser Val Ala
 165 170 175
 Thr Phe Ser Gln Ser Ile Arg Glu Arg Val Glu Ala Gly Leu Val Asp
 180 185 190
 Pro Gln Asp Leu Leu Met Ala Glu Val Lys Leu Asn Glu Ala Glu Tyr
 195 200 205
 Gln Leu Leu Gln Ala Lys Arg Asn Leu Glu Thr Gly Arg Met Ala Leu
 210 215 220
 Asn Ser Leu Ile Gly Val Glu Leu His Ala Pro Thr Glu Ile Glu Asp
 225 230 235 240
 Thr Ile Ser Ala Val Arg Ala Asp Lys Asp Leu Trp Gly Glu Gly Glu
 245 250 255
 Ile Asp Arg Pro Glu Leu Lys Met Ala Tyr Ala Arg Ile Lys Ile Ala
 260 265 270
 Glu Ser Ser Lys Lys Leu Thr Asp Ala Lys Tyr Lys Pro Gln Phe Tyr
 275 280 285
 Ile Gly Val Asp Gly Ser Tyr Ser Ala Pro Gly Tyr Asp Phe Arg Ser
 290 295 300
 Asp Leu Asp Pro Asn Tyr Ala Ile Tyr Ala Lys Val Ser Val Pro Leu
 305 310 315 320
 Phe Glu Trp Gly Lys Arg Arg Asp Glu Lys Arg Ala Ser Ser Phe Lys
 325 330 335
 Val Gly Met Ala Thr Asp Tyr Leu Asn Gln Val Thr Asp Gln Val Lys
 340 345 350
 Leu Glu Val Glu Thr Ala Arg Val Ser Leu Ser Gln Thr Met Glu Gln
 355 360 365
 Val Arg Leu Thr Glu Gly Ser Leu Ser Lys Ala Phe Glu Asn Glu Arg
 370 375 380
 Met Ala Leu Glu Arg Tyr Thr Glu Gly Lys Ala Ser Val Ile Glu Val
 385 390 395 400
 Ile Glu Ala Gln Thr Tyr Arg Gln Ala Ser Gln Leu Asn His Val Gln
 405 410 415
 Ala Lys Val Ser Ala Gln Gly Ala Tyr Ser Glu Leu Ile Arg Ala Leu
 420 425 430
 Asn Lys Tyr
 435

<210> 7965

<211> 358

<212> PRT

<213> B.fragilis

<400> 7965

Asp Cys Met Glu Glu Asn Glu Asp Met Cys Pro Leu Ser Gly Asn Glu
 1 5 10 15

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Ile Ser Asn Ser Met Glu Ala Lys Gln Asp Thr Asp Ser Leu Phe Asp
      20      25      30
Arg Thr Ser Glu Cys Asp Leu Ser Ile Glu Glu Tyr Leu His Phe Leu
      35      40      45
Arg Asn Ala Leu His Ile Val Asp Leu Ser Met Arg Met Lys Val Ser
      50      55      60
Gln Gln Asp Ile Asp Glu Phe Phe Ile Glu Phe Tyr Leu Lys His Glu
      65      70      75      80
Asn Ser Tyr Lys Arg Ser Glu Gly Phe Ala Ala Lys Leu Ile Phe Gly
      85      90      95
Ser Ile Leu Pro Ile Phe Ala Asn Ser Ile Phe Ile Asp Ile Asn Lys
      100      105      110
Ala Lys Glu Trp Glu Arg Asn Cys Glu Ile Asp Ile Glu Lys Tyr Gly
      115      120      125
Met Ala Ser Gly Asn Gly Tyr Ala Gln Glu Tyr Tyr Asp Lys Asn Lys
      130      135      140
Ile Ile Glu Tyr Lys Tyr Lys Ser Leu Leu Lys Ile Phe Ser Asp Pro
      145      150      155      160
Glu Ile Tyr Ala Glu Leu Arg Lys Gln Thr Leu Glu Pro Ile Glu Leu
      165      170      175
Leu Leu Lys Lys Asn Lys Asn Met Asn Phe Glu Lys Asp Lys Val Ser
      180      185      190
Ser Lys Lys Asp Thr Thr Leu Cys Ser Ile Leu Leu Glu Asn Ser Val
      195      200      205
Asp Val Ile Gly Lys Ile Asn Lys Arg His Ser Lys Leu Ser Ala Glu
      210      215      220
Leu Ile Gly Ile Leu Thr Leu Cys Glu Asn Glu Val Lys Leu Phe Ser
      225      230      235      240
Ser Leu Gly Lys Lys Pro Gln Val Asp Asn Tyr Asn Ser Leu Thr Ala
      245      250      255
Arg Glu Arg Val Ile Leu Thr Ala Cys Arg Leu Tyr Asn Glu Gly Phe
      260      265      270
Arg Gly Leu Pro Glu Ser Arg Ile Ala Arg Val Ile Ala Met Glu Tyr
      275      280      285
Gly Gly Ala Glu Glu Thr Phe Arg Lys Ile Leu Lys Gln Leu Asn Asn
      290      295      300
Asp Asn Phe Asn Cys Ala Lys Leu Lys Thr Leu Lys Asp Leu Thr Glu
      305      310      315      320
Val Leu Lys Lys Glu Ala Asn Glu Ser Asn Val Arg Ile Ala Asn Glu
      325      330      335
Lys Tyr Lys Lys Ile Thr Glu Phe Arg Ile Gly Ser Leu Arg Glu Leu
      340      345      350
Met Arg Lys Thr Lys Glu
      355

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<210> 7966

<211> 392

<212> PRT

<213> B.fragilis

<400> 7966

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Lys Pro Val Asp Leu Gln Val Ala Ala Ile Gly Thr Val Glu Lys Gln
1      5      10      15
Val Leu Ile Lys Gln Leu Lys Ser Arg Arg Gln Gln Lys Thr Met
      20      25      30
Lys Asn Asn Ser Gly Arg Leu Ser Leu Arg Lys Arg Leu Gly Leu Glu
      35      40      45
Ile Ala Leu Lys Ile Arg Asn Asn Leu Arg Glu Leu His Pro Leu Arg
      50      55      60

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Gln Leu Phe Trp Glu Cys Thr Leu Gln Cys Asn Leu Ala Cys Lys His
65          70          75          80
Cys Gly Ser Asp Cys Arg Lys Met Ser Glu Gln Lys Asp Met Pro Ala
          85          90          95
Thr Asp Phe Leu Gln Val Val Asp Ser Ile Thr Pro His Val Asn Pro
          100          105          110
Asn Glu Val Asn Ile Ile Ile Thr Gly Gly Glu Pro Leu Met Arg Asp
          115          120          125
Asp Leu Glu Glu Val Gly Met Ala Leu Tyr Arg Lys Gly Tyr Pro Trp
          130          135          140
Gly Ile Val Ser Asn Gly Leu Tyr Leu Thr Arg Glu Arg Leu Asp Ser
145          150          155          160
Leu Met Ala Ala Gly Leu His Ala Val Thr Ile Ser Leu Asp Gly Phe
          165          170          175
Ala Glu Glu His Asn Trp Leu Arg Gly Asn Pro Asp Ser Tyr Glu Lys
          180          185          190
Ala Leu Glu Ala Ile Lys Met Leu Val His Glu Pro Glu Leu Thr Trp
          195          200          205
Asp Val Val Thr Cys Val Asn Arg Lys Asn Tyr Ser Tyr Leu Glu Glu
210          215          220
Leu Lys Ala Tyr Leu Tyr Thr Ile Gly Val Arg Asn Trp Arg Ile Phe
225          230          235          240
Thr Ile Phe Pro Val Gly Arg Ala Ala Asn His Pro Glu Phe Gln Leu
          245          250          255
Thr Asp Glu Glu Phe Thr Gly Val Leu Glu Phe Ile Lys Lys Val Arg
          260          265          270
Lys Glu Gly Arg Val His Leu Ser Tyr Gly Cys Glu Gly Phe Leu Gly
          275          280          285
Lys Tyr Glu Ser Glu Val Arg Asp His Phe Tyr Ser Cys Asn Ala Gly
290          295          300
Ile Ser Val Ala Ser Val Leu Ala Asp Gly Ser Ile Ser Ser Cys Pro
305          310          315          320
Ser Ile Arg Ser Asn Phe His Gln Gly Asn Ile Tyr Glu Asp Asp Phe
          325          330          335
Met Glu Val Trp Glu Lys Arg Phe Gln Val Phe Arg Asn Arg Glu Trp
          340          345          350
Ala Arg Lys Gly Glu Cys Ala Asp Cys Ser Phe Phe Arg Tyr Cys Glu
          355          360          365
Gly Asn Gly Met His Leu His Asn Asp Asn Gly Asp Leu Leu Phe Cys
          370          375          380
His Gln Lys Arg Ile Val Glu Leu
385          390

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<210> 7967

<211> 496

<212> PRT

<213> B.fragilis

<400> 7967

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Thr Leu Ser Glu Cys Pro Ser Pro Thr Ser Lys Glu Gln Gln Trp Ala
1          5          10          15
Val Ala Arg Pro Gln Phe Ser Gly Ser Gly Thr Ser Met Gln Val Phe
          20          25          30
Thr Gly Lys Ser Gly Glu Ala His Thr Ala Gly Pro Leu Leu Asn Leu
          35          40          45
His Arg Pro Ala Tyr Pro Glu Ser Trp Phe Asn Gly Gly Lys Gly Gly
          50          55          60
Phe Ala Ile Arg Lys Glu Ala Asp Gly Val Ile Ala Val Ala Tyr Ser
65          70          75          80

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Gly Glu Arg Met Leu Glu Ala Gly Ser Ser Ile Thr Phe His Phe Ala
 85 90 95
 Met Ile Ile Thr Pro Val Lys Met Leu Asp Met Lys Ser Gln Phe Thr
 100 105 110
 Asp Arg Tyr Tyr His Asn Gly Pro Lys Pro Thr Pro Ser Gln Ala Asp
 115 120 125
 Ile Glu Ala Gly Val Arg Ile Ile Asn Val His Gln Gly Asn Asp Tyr
 130 135 140
 Asn Pro Phe Ile Asn Tyr Pro Phe Leu Thr Val Asp Lys Met Lys Glu
 145 150 155 160
 Phe Thr Lys Glu Trp His Ala Arg Gly Cys Lys Ile Lys Ile Tyr Tyr
 165 170 175
 Thr Leu Arg Glu Leu Ser Asn Ala Thr Ala Glu Ile Trp Ala Ile Arg
 180 185 190
 Ser Leu Gly Asn Glu Ile Leu Arg Gly Gly Asn Gly Glu Gly Phe Pro
 195 200 205
 Trp Cys Arg Glu His Phe Val Thr Asn Tyr Thr Pro Gln Trp Tyr Glu
 210 215 220
 His Phe Asp Asn Ala Asp Lys Gln Gly Ile Thr Ala Asp Ala Ser Ile
 225 230 235 240
 Leu Thr Ala Glu Gly Asp Ser Arg Trp Tyr Asn Tyr Tyr Ile Glu Gly
 245 250 255
 Leu Arg Trp Met Val Gln Asn Met Asp Ile Asp Gly Ile Tyr Leu Asp
 260 265 270
 Asp Val Ser Phe Asp Arg Arg Ile Leu Lys Arg Met Arg Arg Ala Met
 275 280 285
 Glu Ser Val Lys Pro Gly Cys Leu Ile Asp Leu His Ser Asn Thr Gly
 290 295 300
 Phe Ser Arg Gly Pro Ala Asn Gln Tyr Thr Glu Phe Phe Pro Tyr Val
 305 310 315 320
 Asp Lys Leu Trp Phe Gly Glu Ser Phe Leu Tyr Asp Lys Met Thr Pro
 325 330 335
 Ala Asn Trp Leu Val Glu Ser Ser Gly Ile Pro Phe Gly Leu Ser Gly
 340 345 350
 Asp Met Leu Tyr Arg Gly Gly Asn Ala Trp Leu Gly Met Gln Tyr Gly
 355 360 365
 Met Thr Val Arg Tyr Pro Trp Tyr Thr Glu Gly Val Asn Cys Asp Pro
 370 375 380
 Arg Gln Val Trp Lys Ile Trp Asp Ser Phe Gly Ile Ala Glu Ala Thr
 385 390 395 400
 Met Leu Gly Phe Trp Glu Glu His Pro Ala Val Ser Thr Ser Asp Glu
 405 410 415
 Ala Val Lys Val Thr Val Tyr Arg Lys Pro Glu Lys Val Leu Leu Ser
 420 425 430
 Leu Gly Asn Tyr Ser Asp Glu Val Lys Thr Val Lys Leu Asn Ile Asp
 435 440 445
 Trp Lys Gln Ile Gly Leu Asn Pro Gln Lys Ala Lys Leu Thr Thr Pro
 450 455 460
 Glu Ile Pro Asp Met Gln Gln Ala His Glu Trp Asn Val Asp Thr Pro
 465 470 475 480
 Ile Val Thr Ala Pro Arg Lys Gly Trp Ile Ile Tyr Leu Thr Ser Glu
 485 490 495

<210> 7968

<211> 60

<212> PRT

<213> B.fragilis

<400> 7968

Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
 1 5 10 15
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
 20 25 30
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
 35 40 45
 Arg Ala Thr Gln Asp Thr Thr Thr Leu Arg Leu Pro
 50 55 60

<210> 7969

<211> 243

<212> PRT

<213> B.fragilis

<400> 7969

Ile Gln His Trp Leu Asp Ser Lys Lys Leu Ser Thr Thr Ala Asn Leu
 1 5 10 15
 Pro Ser Arg Leu Phe Ala Cys Phe Arg Gln Val Thr Tyr Ile Cys Ser
 20 25 30
 Arg Ile Val Thr Met Cys Lys Met Lys Gly Lys Ser Ile Thr Gly Glu
 35 40 45
 Arg Asp Arg Glu Ala Thr Glu Lys Arg Leu Leu Asp Thr Ile Gly Lys
 50 55 60
 Met Ile Ala Glu Asp Gly Phe Glu Lys Ile Gly Ile Asn Ala Ile Ala
 65 70 75 80
 Thr Gln Ser Gly Val Ser Lys Ile Leu Ile Tyr Arg Tyr Phe Gly Ser
 85 90 95
 Val Glu Gly Leu Met Ala Ala Tyr Ile Arg Gln His Asp Phe Trp Ile
 100 105 110
 Asn Phe Pro Leu Glu Tyr Pro Ser Arg Glu Lys Leu Pro Ala Phe Val
 115 120 125
 Lys Arg Met Phe Gln Gly Gln Ile Glu Gln Leu Arg Asn Asn Pro Thr
 130 135 140
 Leu Lys Arg Leu Tyr Arg Trp Glu Leu Ser Cys Asn Asn Asp Met Ile
 145 150 155 160
 Val Lys Leu Arg Glu Gln Arg Glu Lys Val Gly Ile Asp Leu Val Lys
 165 170 175
 Lys Val Ser Glu Leu Thr Gly His Pro Gln Lys Glu Ile Ala Ala Ile
 180 185 190
 Ala Ser Met Leu Thr Ala Ser Ile Thr Tyr Leu Val Met Leu Glu Asp
 195 200 205
 Phe Cys Pro Val Tyr Asn Gly Ile Pro Leu Asn Glu Asn Ser Gly Trp
 210 215 220
 Glu Gln Ile Asn Glu Gly Ile Glu Ile Leu Ile Asn Lys Val Phe Gln
 225 230 235 240
 Asp Glu Asn

<210> 7970

<211> 106

<212> PRT

<213> B.fragilis

<400> 7970

Leu Lys His Cys Cys Met Asn Lys Lys Glu Leu Ile Ser Thr Ile Ala
 1 5 10 15
 Glu Lys Ala Gly Leu Asn Lys Ser Glu Ser Arg Lys Leu Leu Asn Val
 20 25 30
 Ile Ile Gly Ile Val Ile Glu Glu Met Lys Lys Asp Gly Lys Leu Leu

```

      35              40              45
Leu Met Gly Phe Gly Thr Phe Ser Val Lys Arg Lys Pro Ala Arg Lys
   50              55              60
Gly Met Asn Pro Ser Thr Phe Val Pro Ile Glu Ile Pro Ala Lys Lys
  65              70              75              80
Val Val Ile Phe Lys Pro Ser Asp Cys Leu Asn Ser Leu Leu Lys Lys
      85              90              95
Lys Arg Gly Arg Lys Arg Ile Val Arg Asn
      100              105

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<210> 7971

<211> 126

<212> PRT

<213> B.fragilis

<400> 7971

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Arg Val Ser Cys Gly Thr Ser Gln Val Tyr Gln Pro Thr Val Cys Gln
 1              5              10              15
Gln Asn Asp Thr Val Thr Val Arg Glu Ile Ile Ala Val Tyr Leu Trp
      20              25              30
Leu Asp Ile Asp Thr Phe Asp Thr Arg Ile Met Phe Gln Cys Ile Tyr
      35              40              45
Leu Asp Phe Ile Val Lys Met Ala Asp Val Ala Asn Asp Ser Leu Ile
      50              55              60
Phe His Leu Phe His Val Ile Asp Thr Asp Asp Ile Asp Ile Thr Gly
 65              70              75              80
Ser Ser Asn Lys Asp Val Thr Phe Phe Ala Gly Val Phe His Cys Tyr
      85              90              95
Tyr Phe Lys Thr Phe His Gly Ser Leu Gln Cys Thr Asp Arg Ile Asp
      100              105              110
Leu Cys Asn Gln His Pro Gly Ser Val Gly Thr His Arg Val
      115              120              125

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<210> 7972

<211> 419

<212> PRT

<213> B.fragilis

<400> 7972

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Lys Asp Arg Cys Phe Val Glu Val Asn Leu Pro Phe Tyr Ile Ala Arg
 1              5              10              15
Arg Tyr Leu Phe Ser Lys Lys Lys His Asn Ala Ile Asn Ile Ile Ser
      20              25              30
Ala Ile Ser Val Cys Gly Val Ala Leu Ala Thr Met Ala Met Val Cys
      35              40              45
Thr Leu Ser Val Phe Asn Gly Phe Gln Asp Thr Val Ala Asp Leu Phe
      50              55              60
Thr Val Phe Asp Pro Glu Leu Lys Val Thr Ile Ala Glu Gly Lys Val
 65              70              75              80
Phe Asp Ala Gln Asp Pro Arg Ile Gln Ala Ile Arg Gln Met Pro Glu
      85              90              95
Val Asp Val Leu Thr Glu Thr Leu Glu Asn Ala Met Val Gln Tyr
      100              105              110
Lys Asp Arg Gln Thr Met Ala Val Ile Lys Gly Val Gln Asn Asn Phe
      115              120              125
Glu Gln Leu Thr Ala Ile Asp Ser Ile Leu Tyr Gly Ala Gly Glu Phe
      130              135              140
Leu Leu Asn Asp Ser Ile Val Asp Tyr Gly Val Met Gly Ile Glu Leu
 145              150              155              160

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Val Ser Thr Leu Gly Thr Gly Ile Arg Phe Val Asp Pro Leu Gln Ile
 165 170 175
 Tyr Ile Pro Lys Arg Ser Gly Lys Val Asn Met Ala Asn Pro Ala Ala
 180 185 190
 Ser Phe Asn Met Asp Tyr Leu Tyr Ser Pro Gly Val Val Phe Val Val
 195 200 205
 Asn Gln Gln Lys Tyr Asp Gly Gln Tyr Ile Leu Thr Ser Leu Asp Phe
 210 215 220
 Ala Arg Arg Leu Leu Asp Tyr Thr Thr Glu Val Ser Ala Ile Glu Leu
 225 230 235 240
 Lys Leu Lys Pro Gly Ser Asp Leu Ser Phe Val Lys Ala Lys Ile Lys
 245 250 255
 Lys Glu Leu Gly Asp Asp Phe Val Ile Arg Asn Arg Tyr Glu Gln Gln
 260 265 270
 Glu Asp Val Phe Arg Ile Met Glu Ile Glu Lys Leu Val Ser Tyr Leu
 275 280 285
 Phe Leu Thr Phe Ile Leu Val Ile Ala Cys Phe Asn Val Ile Gly Ser
 290 295 300
 Leu Ser Met Leu Ile Leu Asp Lys Lys Glu Asp Val Asp Thr Leu Arg
 305 310 315 320
 Lys Leu Gly Ala Asn Asp Arg Leu Val Ser Arg Ile Phe Leu Phe Glu
 325 330 335
 Gly Cys Met Ile Ser Phe Tyr Gly Ala Ile Ile Gly Ile Val Leu Gly
 340 345 350
 Leu Leu Leu Cys Trp Val Gln Met Thr Tyr Gly Ile Ile Ser Leu Gly
 355 360 365
 Gly Gly Ser Ala Ala Gly Asn Phe Val Val Asp Ala Tyr Pro Val Ser
 370 375 380
 Val His Leu Trp Asp Val Ile Val Ile Phe Ile Thr Val Phe Ala Val
 385 390 395 400
 Gly Phe Leu Ser Val Trp Tyr Pro Val Arg Tyr Leu Ser Lys Arg Leu
 405 410 415
 Leu Lys Met

<210> 7973

<211> 64

<212> PRT

<213> B.fragilis

<400> 7973

Ile Ser Pro Cys Gln Tyr Val Ile Arg Pro His Cys Val Leu Thr Tyr
 1 5 10 15
 Asp Ile Trp Leu Tyr Ser Gln Gly Arg Lys Val Met Lys Gly Arg Leu
 20 25 30
 Arg Asp Asp Gly Met Leu Asp Asp Ile Phe Val Tyr Ser Arg Ile Leu
 35 40 45
 Val Lys Phe Val Arg Pro Ser Phe Thr Phe Leu Leu Arg Gly Gly Glu
 50 55 60

<210> 7974

<211> 104

<212> PRT

<213> B.fragilis

<400> 7974

Pro Met Glu Trp Leu Asn Glu Tyr His Leu Ser Gly Leu Leu Ile Gly
 1 5 10 15
 Ile Cys Thr Phe Leu Ile Ile Gly Leu Phe His Pro Val Val Val Lys

245 250 255
 Leu Tyr His Tyr Asn Ala Ala Ser Asn Lys Leu Glu Gly Arg Phe Thr
 260 265 270
 Val Lys Tyr Pro Ser Asn Asp Lys Ile Pro Trp His Ala Tyr Tyr Glu
 275 280 285
 Ile Pro Lys Tyr Phe Ile Gly Asp Val Ser Phe Pro Ile Gln Ile Asp
 290 295 300
 Glu Ser Thr Phe Ser Gly Ser Lys Pro Ala Tyr Tyr Met Val Asp Lys
 305 310 315 320
 Lys Thr Leu His Gly Asn Tyr Val Arg Leu Tyr Asn Asp Phe Ile Ser
 325 330 335
 Thr Pro Ser Gln Thr Ile Tyr Pro Ser Phe Asn Asn Gly Tyr Tyr Val
 340 345 350
 Thr Asn Met Glu Pro Met Ala Leu Lys Glu Ile Leu Glu Lys Glu Val
 355 360 365
 Asn Lys Lys Gly Leu Thr Ala Asp Lys Lys Lys Lys Val Gln Asn Leu
 370 375 380
 Ile Lys Thr Leu Asn Asp Asn Asp Asn Asn Ile Val Met Phe Ala Lys
 385 390 395 400
 Leu Lys Gln

<210> 7977

<211> 194

<212> PRT

<213> B.fragilis

<400> 7977

Arg Tyr Ile Arg Ala Tyr Asn Ser Phe Thr His Cys Lys Thr His Asn
 1 5 10 15
 Cys Asn Asp Pro Met Lys Lys Ile Ile Leu Leu Ile Ile Ala Ser Tyr
 20 25 30
 Thr Val Ala Met Ala Thr Ala Gln Lys Lys Glu His Phe Thr Phe Ala
 35 40 45
 Thr Ser Val Gly Thr Gly Ile Asp Met Ser Glu Pro Ala Ala Thr Pro
 50 55 60
 Phe Ser Leu Gln Val Leu Gly Tyr Tyr Ala Ile Asn Lys Arg Phe Ser
 65 70 75 80
 Val Gly Val Gly Thr Gly Leu Ser Ile Tyr Glu Lys Val Leu Ile Pro
 85 90 95
 Leu Phe Ala Asp Ala Lys Phe Leu Ile Ile Lys Pro Arg Lys Phe Thr
 100 105 110
 Pro Tyr Ile Glu Cys Gly Val Gly Tyr Ser Phe Ala Pro Asn Lys Asn
 115 120 125
 Ala Asn Gly Gly Phe Tyr Leu Asn Pro Ser Ala Gly Val Glu Tyr Ser
 130 135 140
 Ile Cys Lys Ser Lys Lys Leu Phe Leu Ala Leu Gly Tyr Glu Ser Gln
 145 150 155 160
 Lys Leu Glu Arg Leu Lys Thr Gln Lys Gln Ser Leu Phe Thr Ala Glu
 165 170 175
 Phe Thr Glu Lys Leu Ser His Asn Ala Ile Ser Ile Lys Ile Gly Phe
 180 185 190
 Met Phe

<210> 7978

<211> 76

<212> PRT

<213> B.fragilis

<400> 7978

Ala Phe Thr Arg Lys Glu Val Ser Ile Phe Leu Lys Cys Pro Tyr Val
 1 5 10 15
 Pro Glu Ile Ser Pro Ile Val Val Arg Asn Ile Ser Tyr Cys Tyr Pro
 20 25 30
 Lys Arg Val Leu Ala Glu Glu Phe Phe Leu Pro Leu Thr Ile Ala Asp
 35 40 45
 Lys Ala Leu Tyr Thr Asp Arg Lys Ala Gly Arg Arg Pro Glu Lys Glu
 50 55 60
 Pro Phe Thr Gly Arg Thr Val Ile Pro Pro Ser Lys
 65 70 75

<210> 7979

<211> 514

<212> PRT

<213> B.fragilis

<400> 7979

Lys His Val Leu Ile Lys Val Phe Gly Ala Ala Val Gln Gly Ile Glu
 1 5 10 15
 Ala Thr Leu Ile Thr Ile Glu Val Asn Ser Ser Arg Gly Cys Met Phe
 20 25 30
 Tyr Met Val Gly Leu Pro Asp Ser Ala Val Lys Glu Ser His Gln Arg
 35 40 45
 Ile Leu Ser Ala Leu Gln Val Thr Gly Tyr Lys Met Pro Thr Ser Asn
 50 55 60
 Ile Val Ile Asn Met Ala Pro Ala Asp Ile Arg Lys Glu Gly Ser Ser
 65 70 75 80
 Tyr Asp Leu Pro Leu Ala Ile Gly Met Leu Ala Ala Gly Glu Thr Ile
 85 90 95
 Ser Cys Gln Lys Leu Ser Arg Tyr Met Met Met Gly Glu Leu Ser Leu
 100 105 110
 Asp Gly Thr Ile Gln Pro Ile Lys Gly Ala Leu Pro Ile Ala Ile Lys
 115 120 125
 Ala Arg Glu Glu Gly Phe Asp Gly Leu Ile Val Pro Ser Gln Asn Ala
 130 135 140
 Arg Glu Ala Ala Val Val Asn Asn Leu Ser Val Tyr Gly Val Asn Asn
 145 150 155 160
 Ile Gln Glu Val Ile Glu Phe Ile Asn Gly Lys Arg Glu Leu Thr Pro
 165 170 175
 Thr Ile Val Asn Thr Arg Glu Glu Phe Tyr Ala Cys Gln Ser Asp Phe
 180 185 190
 Glu Tyr Asp Phe Ala Asp Val Lys Gly Gln Glu Asn Val Lys Arg Ala
 195 200 205
 Leu Glu Val Ala Ala Ala Gly Gly His Asn Leu Ile Met Val Gly Ala
 210 215 220
 Pro Gly Ser Gly Lys Ser Met Met Ala Lys Arg Leu Pro Ser Ile Leu
 225 230 235 240
 Pro Pro Leu Ser Leu Gly Glu Ser Leu Glu Thr Thr Lys Ile His Ser
 245 250 255
 Val Ala Gly Lys Leu Gly Arg Asn Ser Ser Leu Ile Ser Gln Arg Pro
 260 265 270
 Phe Arg Ala Pro His His Thr Ile Ser Gln Val Ala Met Val Gly Gly
 275 280 285
 Gly Ser Phe Pro Gln Pro Gly Glu Ile Ser Leu Ala His Asn Gly Val
 290 295 300
 Leu Phe Leu Asp Glu Leu Pro Glu Phe Asn Arg Ser Val Leu Glu Val
 305 310 315 320

Leu Arg Gln Pro Leu Glu Asp Arg Arg Ile Thr Ile Ser Arg Val Lys
 325 330 335
 Ser Thr Ile Asp Tyr Pro Ala Ser Phe Met Leu Val Ala Ser Met Asn
 340 345 350
 Pro Cys Pro Cys Gly Tyr Tyr Asn His Pro Thr Lys Pro Cys Val Cys
 355 360 365
 Asn Pro Gly Gln Val Gln Lys Tyr Leu Asn Lys Ile Ser Gly Pro Leu
 370 375 380
 Leu Asp Arg Ile Asp Ile Gln Ile Glu Ile Val Pro Val Pro Phe Glu
 385 390 395 400
 Lys Ile Ser Asp Arg Gln Gln Gly Glu Ser Ser Ala Ala Ile Arg Gln
 405 410 415
 Arg Val Ile Lys Ala Arg Gln Lys Gln Glu Glu Arg Phe Ser Gly Tyr
 420 425 430
 Pro Gly Thr Tyr Cys Asn Ala Gln Met Thr Ser Lys Gln Leu Ser Ser
 435 440 445
 Phe Ala Gln Pro Asp Thr Lys Gly Leu Leu Leu Leu Lys Asn Ala Met
 450 455 460
 Glu Arg Leu Asn Leu Ser Ala Arg Ala Tyr Asp Arg Ile Leu Lys Val
 465 470 475 480
 Ser Arg Thr Ile Ala Asp Leu Glu Glu Ser Glu Gln Ile Gln Pro Ser
 485 490 495
 His Leu Ala Glu Ala Ile Ser Tyr Arg Asn Leu Asp Arg Glu Asn Trp
 500 505 510
 Ala Gly

<210> 7980
 <211> 404
 <212> PRT
 <213> B.fragilis

<400> 7980
 Gly Asp Ile Arg Met Lys Lys Val Val Phe Leu Gly Leu Gly Tyr Ile
 1 5 10 15
 Gly Leu Pro Thr Ala Ala Val Ala Ala Gly His Gly Tyr Glu Val Val
 20 25 30
 Gly Val Asp Val Asn Pro Ser Val Val Glu Thr Ile Asn Gln Gly Lys
 35 40 45
 Ile His Ile Val Glu Pro Glu Leu Asp Gln Ile Val Lys Glu Val Val
 50 55 60
 Arg Thr Gly Asn Leu Arg Ala Val Ser Lys Pro Glu Gln Ala Asp Ala
 65 70 75 80
 Phe Phe Val Val Val Pro Thr Pro Phe Lys Gln Asn His Arg Ala Asp
 85 90 95
 Ile Thr Tyr Val Glu Ser Ala Thr Arg Ser Val Ile Pro Tyr Leu Arg
 100 105 110
 Glu Gly Asn Leu Phe Val Ile Glu Ser Thr Ser Pro Val Phe Thr Thr
 115 120 125
 Glu Arg Met Ala Glu Val Ile Tyr Lys Glu Arg Pro Glu Leu Lys Asp
 130 135 140
 Lys Ile Tyr Ile Ala Tyr Cys Pro Glu Arg Val Leu Pro Gly Asn Thr
 145 150 155 160
 Leu Tyr Glu Leu Val His Asn Asp Arg Val Ile Gly Gly Val Asn Pro
 165 170 175
 Glu Ser Thr Ala Lys Ala Ile Glu Phe Tyr Ser Ala Phe Val Gln Gly
 180 185 190
 Lys Leu His Pro Thr Asn Ala Arg Thr Ala Glu Met Cys Lys Leu Thr
 195 200 205

Glu Asn Ser Ser Arg Asp Ser Gln Ile Ala Phe Ala Asn Glu Leu Ser
 210 215 220
 Met Ile Cys Asp Lys Ala Gly Ile Asn Val Trp Glu Leu Ile Glu Leu
 225 230 235 240
 Ala Asn Lys His Pro Arg Val Asn Ile Leu Gln Pro Gly Cys Gly Val
 245 250 255
 Gly Gly His Cys Ile Ala Val Asp Pro Trp Phe Ile Val Ser Asp Tyr
 260 265 270
 Pro Glu Gln Ala Gln Ile Ile Lys Arg Ala Arg Glu Thr Asn Asp Tyr
 275 280 285
 Lys Ala Asp Trp Cys Ala Asn Lys Val Met Glu Ala Cys Gln Gln Phe
 290 295 300
 Val Glu Lys Asn Asp Arg Glu Pro Val Val Ala Cys Met Gly Leu Ala
 305 310 315 320
 Phe Lys Pro Asn Ile Asp Asp Leu Arg Glu Ser Pro Ala Lys Tyr Ile
 325 330 335
 Ala Ser Arg Ile Val Ser Glu Ser Arg Ala Glu Val Leu Ile Val Glu
 340 345 350
 Pro Asn Val Ala Ser His Ala Ser Phe His Leu Thr Asp Tyr Arg Glu
 355 360 365
 Ala Tyr Gln Lys Ala Asp Ile Val Val Trp Leu Val Arg His Thr Pro
 370 375 380
 Phe Val Glu Leu Pro Arg Glu Glu Ser Lys Leu Glu Leu Asp Phe Cys
 385 390 395 400
 Gly Val Arg Lys

<210> 7981

<211> 379

<212> PRT

<213> B.fragilis

<400> 7981

Ser Leu Thr Leu Met Lys Lys Pro Ser Ser Thr Leu Ala Pro Ala Leu
 1 5 10 15
 Ala Ser Leu Asp Ile Leu Arg Gly Phe Asp Leu Phe Leu Leu Val Phe
 20 25 30
 Phe Gln Pro Val Leu Trp Thr Leu Ala His Gln Leu Asn Leu Pro Trp
 35 40 45
 Leu Asn Ser Ile Leu Phe Gln Phe Asp His Glu Val Trp Glu Gly Phe
 50 55 60
 Arg Phe Trp Asp Leu Val Met Pro Leu Phe Leu Phe Met Thr Gly Ala
 65 70 75 80
 Ser Met Pro Phe Ser Phe Ser Lys Phe Lys Asp Asn Pro Asp Lys Gly
 85 90 95
 Pro Val Tyr Arg Lys Ile Ile Lys Arg Phe Ile Leu Leu Phe Ile Phe
 100 105 110
 Gly Met Ile Val Gln Gly Asn Leu Leu Gly Leu Asp Pro Lys His Leu
 115 120 125
 Tyr Leu Tyr Ser Asn Thr Leu Gln Ala Ile Ala Thr Gly Tyr Leu Ile
 130 135 140
 Ala Ala Ile Ile Gln Leu His Cys Asn Phe Arg Trp Gln Leu Met Val
 145 150 155 160
 Thr Ala Leu Leu Leu Ile Tyr Trp Ile Pro Met Thr Phe Leu Gly
 165 170 175
 Asp Phe Thr Pro Glu Gly Asn Phe Ala Glu Lys Val Asp Arg Leu Val
 180 185 190
 Leu Gly His Phe Arg Asp Gly Val Phe Trp Asn Glu Asp Gly Ser Trp
 195 200 205

Ser Phe Ser Ala His Tyr Asn Tyr Thr Trp Ile Trp Ser Ser Leu Thr
 210 215 220
 Phe Gly Ala Thr Val Met Leu Gly Ala Phe Ala Gly Lys Ile Met Lys
 225 230 235 240
 Ala Gly Lys Asp Asn Arg Arg Lys Val Val Gln Thr Leu Leu Ile Ile
 245 250 255
 Gly Ile Ser Leu Ile Ala Phe Ser Leu Ile Trp Ser Leu Gln Met Pro
 260 265 270
 Ile Ile Lys Arg Leu Trp Thr Ser Ser Met Thr Leu Phe Ser Gly Gly
 275 280 285
 Leu Cys Phe Leu Leu Met Gly Ala Phe Tyr Tyr Arg Ile Asp Tyr Lys
 290 295 300
 Gly His Ser Arg Gly Leu Asn Trp Leu Lys Ile Tyr Gly Met Asn Ser
 305 310 315 320
 Ile Thr Ala Tyr Ile Leu Gly Glu Val Ile Asn Phe Arg Cys Ile Ala
 325 330 335
 Ala Ser Val Ser Tyr Gly Leu Glu Gln Tyr Leu Gly Gly Tyr Tyr Gln
 340 345 350
 Val Trp Leu Ser Phe Ala Asn Tyr Leu Ile Val Phe Leu Ile Leu Arg
 355 360 365
 Ile Met Tyr Arg Gln Lys Ile Phe Leu Lys Ile
 370 375

<210> 7982
 <211> 222
 <212> PRT
 <213> B.fragilis

<400> 7982
 Ser Phe Asn Ser Ser Thr Thr Met Thr Asp Leu Thr Ile Leu Ile Ala
 1 5 10 15
 Val Ile Ala Leu Ala Leu Trp Pro Ile Val Phe Leu Ile Ser Arg Ile
 20 25 30
 Leu His Glu Arg Asn Lys Arg Ala Lys Pro Ser Gly Asp Thr Ala Ser
 35 40 45
 Ala Glu Thr Glu Glu Val Thr Glu Glu Met Thr Thr Ser Ala Leu Ile
 50 55 60
 Met Ser Ile Leu Gln Gln Leu Gly Cys Gln Pro Glu Val Asn Glu Glu
 65 70 75 80
 Asn His Ile Ser Phe Lys Tyr Gln Gly Asp Asp Phe Leu Val Ala Ala
 85 90 95
 Glu Asp Gly Leu Arg Leu Ile Ile Val Trp Asn Pro Trp Trp Ala Ser
 100 105 110
 Ile Ser Ile Asp Asn Gln Ala Leu Pro Tyr Leu Lys Glu Ile Ile Asn
 115 120 125
 Ala Val Asn Met Asn Ser Leu Val Thr Thr Val Tyr Ala Leu Asp Glu
 130 135 140
 Asp Glu Lys Thr Phe Gly Ile His Ser Lys Cys His Met Leu Phe Ala
 145 150 155 160
 Pro Glu Glu Glu Glu Pro Glu Lys Ser Phe Thr Asp Leu Leu Asp Ser
 165 170 175
 Phe Phe Thr Thr His Asn Thr Ile Lys Glu Asn Leu Lys Gln Leu Gly
 180 185 190
 Asn Gly Met Pro Asp Met Glu Lys Lys Glu Arg Val Arg Ile Lys Gly
 195 200 205
 Phe Ala Ala Tyr Lys Asp Asn Ser Thr Glu Leu Lys Gly Glu
 210 215 220

<210> 7983

<211> 87
 <212> PRT
 <213> B.fragilis

<400> 7983

Tyr	Lys	Asn	Arg	Pro	Lys	Val	Lys	Thr	His	Leu	Gln	Lys	His	Leu	Asn
1				5					10					15	
Asn	Asp	Lys	Phe	Arg	Glu	Asn	Leu	Ile	Thr	Phe	Gly	Gln	Thr	Asn	Leu
			20					25					30		
Ile	Asn	Lys	Ser	Ala	Trp	Phe	Arg	Lys	Glu	Gln	Glu	Lys	Asn	Asp	Ile
			35				40					45			
His	Thr	Val	Thr	Ser	Asn	Asn	Tyr	Ala	Tyr	Glu	Val	Glu	Lys	Thr	Asn
	50					55					60				
Pro	Leu	Gln	Thr	Leu	Phe	Arg	Lys	Gln	Asn	Lys	Ile	Arg	Asn	Pro	Lys
65					70					75					80
Thr	Asn	Tyr	Gln	Ile	Asn	Val									
					85										

<210> 7984
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 7984

Ser	Leu	Pro	Arg	Ala	His	Ile	Asp	Gly	Gly	Val	Trp	His	Leu	Asp	Val
1				5					10					15	
Gly	Ser	Ser	His	Pro	Gly	Ala	Gly	Glu	Gly	Pro	Lys	Gly	Trp	Ala	Val
			20					25					30		
Arg	Pro	Leu	Lys	Trp	His	Ala	Ser	Trp	Val	Gln	Asn	Val	Val	Arg	Gln
			35				40					45			
Phe	Gly	Leu	Tyr	Leu	Ser	Trp	Ala	Tyr	Glu	Ile	Cys	Val	Ala	Leu	Thr
	50					55				60					
Leu	Val	Arg	Glu	Asp	Arg	Val	Gly	Leu	Thr	Ser	Gly	Leu	Pro	Val	Val
65					70					75					80
Pro	Pro	Gly	Ala	Leu	Pro	Gly	Ile								
					85										

<210> 7985
 <211> 229
 <212> PRT
 <213> B.fragilis

<400> 7985

Arg	Val	Thr	Arg	Ile	Arg	Cys	Asn	Asp	Ile	Cys	Asn	Asn	His	Phe	Leu
1				5					10					15	
Phe	Asn	Gly	Tyr	Tyr	Gln	Gly	Phe	Ile	Tyr	Ser	Tyr	Phe	Tyr	Lys	Lys
			20					25					30		
Val	Ile	Thr	Met	Pro	Asn	Asn	Ser	Arg	Lys	Thr	Ile	Phe	Thr	Thr	Ile
			35				40					45			
Ser	Ile	Asp	Lys	Glu	Thr	Ala	Thr	Leu	Val	Gly	Lys	Ile	Cys	Lys	Arg
	50					55				60					
Tyr	Ser	Leu	Lys	Lys	Ser	Glu	Val	Val	Lys	Leu	Ala	Phe	Gly	Tyr	Ile
65					70					75					80
Asp	Lys	Ala	His	Ile	Asn	Pro	Ser	Glu	Ala	Pro	Glu	Ser	Val	Lys	Ser
				85					90					95	
Glu	Leu	Ala	Lys	Ile	Asn	Lys	Arg	Gln	Asp	Asp	Ile	Ile	Arg	Phe	Ile
			100					105					110		
Arg	His	Tyr	Glu	Glu	Lys	Gln	Leu	Asn	Pro	Met	Ile	Arg	Val	Thr	Asn
			115				120					125			

Ser Ile Ala Leu Arg Phe Asp Ala Ile Gly Lys Thr Leu Glu Thr Leu
 130 135 140
 Ile Leu Ser Gln Leu Glu Ala Asn Gln Glu Arg Gln Thr Ala Val Leu
 145 150 155 160
 Lys Lys Leu Ser Glu Gln Phe Cys Asn His Ala Asp Val Ile Asn Asn
 165 170 175
 Gln Ser Lys Gln Ile Asn Ala Leu Tyr Gln Ile His Gln Arg Asp Tyr
 180 185 190
 Lys Lys Leu Leu His Leu Ile Gln Leu Tyr Ser Glu Leu Ser Thr Cys
 195 200 205
 Gly Val Met Asp Gly Lys Arg Lys Glu Asn Leu Lys Ala Glu Ile Val
 210 215 220
 Asn Leu Ile Asn Ile
 225

<210> 7986

<211> 110

<212> PRT

<213> B.fragilis

<400> 7986

Thr Ile Lys Ser Lys Ser Met Glu Val Val Thr Ile Glu Lys Arg Thr
 1 5 10 15
 Phe Leu Tyr Ile Cys Glu Arg Phe Thr Glu Phe Ala Lys Arg Thr Glu
 20 25 30
 Ser Leu Cys Asn Thr His Thr Gln Glu Val Glu Asn Trp Leu Asp Ser
 35 40 45
 Gln Glu Val Cys Leu Leu Leu Gly Phe Ser Lys Arg Thr Leu Gln Tyr
 50 55 60
 Tyr Arg Ser Ser Gly Arg Leu Ala Tyr Ser Gln Ile Gly Ser Lys Ile
 65 70 75 80
 Tyr Tyr Lys Ser Ser Asp Val Glu Arg Ile Ile Ala Asp Ser Glu Thr
 85 90 95
 Gln Asn Gln Ser Leu Lys Gln Ala Thr Pro Tyr Glu Lys Asn
 100 105 110

<210> 7987

<211> 346

<212> PRT

<213> B.fragilis

<400> 7987

Leu Asn Lys Ser Arg Asp Ile Thr Pro Thr Ala Ser Leu Ile Lys Asp
 1 5 10 15
 Glu Leu Ile Lys Ala Leu Lys Asn Lys Lys Glu Glu Glu Lys Pro Ile
 20 25 30
 Phe Pro Asp Phe Ile Ser Tyr Ile Asp Tyr Tyr Met Asp Leu Cys Lys
 35 40 45
 Gln Gly Lys Ile Leu Asn Val Asp Gly Thr Lys Leu Ser Ser Ala Thr
 50 55 60
 Leu Ala Thr Tyr Lys Ser Thr Arg Asn Ile Leu Lys Lys Tyr Ala Ala
 65 70 75 80
 Ala Arg Asn Val Thr Ile Arg Ile Glu Glu Val Asp Ser Glu Phe Arg
 85 90 95
 Asn Asp Phe Ile Asn Phe Leu Tyr Asp Thr Lys His His Asn Gly Glu
 100 105 110
 Tyr Lys Leu Asn Ser Ile Gly Lys Phe Ile Lys Thr Ile Lys Val Phe
 115 120 125
 Met Arg His Ala Phe Asp Asn Asn Val Thr Ser Asn Asn Ser Val Phe

130 135 140
 Lys Lys Asp Phe Val Pro Leu Lys Glu Glu Ala Asn Thr Ile Tyr Leu
 145 150 155 160
 Thr Glu Ser Glu Leu Glu Ala Leu Tyr Asn Leu Asp Leu Pro Ser Asn
 165 170 175
 Gln Ala Glu Val Arg Asp Cys Phe Leu Ile Ser Cys Tyr Thr Gly Leu
 180 185 190
 Arg Tyr Ser Asp Ile Ser Arg Leu Asp Val Lys His Ile Asn Val Glu
 195 200 205
 Lys Asn Thr Ile Thr Ile Val Thr Tyr Lys Thr Arg Asn Gln Val Ile
 210 215 220
 Ile Pro Ile His Arg Ile Val Arg Gly Ile Leu Lys Arg Tyr Gly Asn
 225 230 235 240
 Arg Pro Pro Lys Pro Gln Cys Asn Gln Ser Thr Asn Arg Met Leu Lys
 245 250 255
 Lys Leu Cys Glu Gln Ala Gly Ile Thr Glu Ile Ile Ser Tyr Thr Glu
 260 265 270
 Thr Val Gly Gly Ala His Lys Glu Cys Thr Ala Arg Lys Cys Asp Lys
 275 280 285
 Val Thr Thr His Thr Ala Arg Ser Phe Ala Thr Asn Ala Tyr Lys
 290 295 300
 Arg Asn Val Pro Thr Leu Ala Ile Met Ala Ile Thr Gly His Lys Thr
 305 310 315 320
 Glu Thr Ser Phe Met Lys Tyr Ile Arg Ile Ser Lys Glu Glu Asn Ala
 325 330 335
 Gln Leu Leu Gln Thr His Glu Phe Phe Val
 340 345

<210> 7988

<211> 60

<212> PRT

<213> B.fragilis

<400> 7988

Leu Trp Glu Arg Glu Arg Ser Gly Lys Glu Arg Asp Thr Leu Leu Tyr
 1 5 10 15
 Tyr Ile Gly Glu Ile Tyr Arg Gly Glu Gly Lys Gly Asp Leu Pro Arg
 20 25 30
 Lys Gly Glu Gly Glu Val Phe Ala Gly Gly Lys Gly Met Phe Arg Gly
 35 40 45
 Arg Ile Ser Arg Lys Glu Leu Gly Leu Gly Glu Arg
 50 55 60

<210> 7989

<211> 104

<212> PRT

<213> B.fragilis

<400> 7989

Val Met Arg Ser Thr Lys Trp Met Val Gly Ile Ile Leu Phe Ala Cys
 1 5 10 15
 Val Leu Thr Leu Ile Gly Val Thr Lys Ser Val Arg Ala Lys Asn Gln
 20 25 30
 Leu Gly Lys Leu Thr Phe Leu Gly Val Glu Ser Leu Ala Asp Gly Glu
 35 40 45
 Gly Gly Gly Ser Asp Tyr Arg Glu Ala Thr Pro His Asp Cys Asn Tyr
 50 55 60
 Ser Lys Asp Val Phe Leu Glu Gly Ala Asp His Ile Ile Asn Val Thr
 65 70 75 80

Val Pro Gly Lys Lys Gly Ile Cys Asp Gly Thr Asn Gly Thr Cys Asn
 85 90 95
 Ser Trp Pro Cys Arg Glu Val Lys
 100

<210> 7990
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 7990
 Phe Ile Leu Gly Phe Val Ser Ser Ser Phe Gly Phe Asn Phe Thr Thr
 1 5 10 15
 Asp Asn Thr Asp Phe His Arg Leu Ile Ile Tyr Phe Ile Asp Asn Lys
 20 25 30
 Ile Arg Ser Ser Val Lys Ile Cys Val Ile Cys Gly Glu Thr Gly Ser
 35 40 45
 Leu Leu Phe Arg Phe Asn Tyr Ser His Pro Gly Leu Leu Gly Ala Ser
 50 55 60
 Ala Gly Phe Lys Ile Ile Ser
 65 70

<210> 7991
 <211> 370
 <212> PRT
 <213> B.fragilis

<400> 7991
 Phe Trp Gly Gly Ser Cys Val Glu Asp Val Thr Ser Lys Leu Met Arg
 1 5 10 15
 His Leu Trp Tyr His Pro Pro Leu Arg Thr Cys Ser Ser Asp Thr Ile
 20 25 30
 Leu Arg Ala Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser
 35 40 45
 Asp Gln Gly Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr
 50 55 60
 Leu Leu Ile Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu
 65 70 75 80
 Glu Tyr Asp Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr
 85 90 95
 Asp Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val
 100 105 110
 Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn
 115 120 125
 Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala
 130 135 140
 Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys
 145 150 155 160
 Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys
 165 170 175
 His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile
 180 185 190
 Phe Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe
 195 200 205
 Glu Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg
 210 215 220
 Leu Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp
 225 230 235 240
 Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser

245 250 255
 Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu
 260 265 270
 Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro
 275 280 285
 Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu
 290 295 300
 Ile His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala
 305 310 315 320
 Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe
 325 330 335
 Ile Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu
 340 345 350
 Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu
 355 360 365
 Phe Gly
 370

<210> 7992

<211> 111

<212> PRT

<213> B.fragilis

<400> 7992

Cys Pro Ala Gly Ser Arg Ser Phe Arg Pro Ser Ser Ala Gln Ser Lys
 1 5 10 15
 Leu Ser Met Phe Ser Ile Trp Arg Lys Arg Ser Glu Leu Asn Gly Arg
 20 25 30
 Asn Gly Ser Lys Ala Ile Ala Arg Leu Ala Thr Ser Cys Arg Asp Ile
 35 40 45
 Phe Arg Ile Val Pro Thr Arg Ser Ile Ser Val Phe Ala Ser Phe Gln
 50 55 60
 Gly Ser Val Ser Ala Arg Tyr Leu Phe Pro Ile Arg Ala Arg Phe Met
 65 70 75 80
 Ala Ser Phe Cys Ala Ser Arg Asn Leu Asn Thr Leu Ser Ser Phe Ser
 85 90 95
 Thr Ser Ala Leu Thr Ser Glu Asn Ser Phe Ser Val Ser Leu Ser
 100 105 110

<210> 7993

<211> 74

<212> PRT

<213> B.fragilis

<400> 7993

Asn Ile Phe Ile Met Glu Arg Glu Pro Val Val Ser Ser Asn Ile Ala
 1 5 10 15
 Ser Ile Gly Tyr Asp Glu Asn Asn Asn Ile Leu Glu Val Glu Phe Asn
 20 25 30
 Asn Gly Asn Val Tyr Glu Tyr Tyr Asp Val Pro Leu His Glu Tyr Glu
 35 40 45
 Gly Leu Met Ser Ala Asp Ser Lys Gly Thr Tyr Leu Asn Ala Asn Ile
 50 55 60
 Lys Lys Gly Gly Tyr Arg Tyr Ser Lys Leu
 65 70

<210> 7994

<211> 68

<212> PRT

<213> B.fragilis

<400> 7994

Gly Lys Phe Ile Gly Glu Arg Glu Lys Gly Ile Cys Arg Glu Arg Gly
 1 5 10 15
 Lys Glu Lys Cys Leu Arg Glu Glu Lys Gly Cys Phe Glu Glu Tyr
 20 25 30
 Arg Gly Arg Asn Trp Gly Trp Glu Arg Asp Lys Leu Lys Asn Arg Trp
 35 40 45
 Gly Ile Asp Gly Ser Trp Thr Gly Asn Gln Thr Arg Thr Glu Arg Glu
 50 55 60
 Leu Asn Glu Asn
 65

<210> 7995

<211> 537

<212> PRT

<213> B.fragilis

<400> 7995

Cys Asp Ala Ile Tyr Asn Lys Thr Asp Leu Asn Arg Leu Lys Ser Met
 1 5 10 15
 Gly His Tyr Glu His Lys Thr Lys Glu Glu Leu Leu Glu Ile Val Cys
 20 25 30
 Lys Leu Glu Lys Lys Val Glu Gly Leu Ser Ser Glu Leu Asp Ser Leu
 35 40 45
 Lys Lys Gly Arg Phe Arg Glu Arg Tyr Ser Thr Arg Ile Leu Asp Ala
 50 55 60
 Leu Pro Asp Met Leu Thr Val Phe Asp His Asn Ala Asn Ile Val Glu
 65 70 75 80
 Leu Ala Ser Ser Pro Thr Thr Asn His Val Glu Gly Thr Thr Ser Asp
 85 90 95
 Ser Ile Ile Asn Ser Asn Val Lys Asp Ile Val Pro Glu Glu Ala Tyr
 100 105 110
 Glu Ser Val Arg His Asn Met Asp Lys Val Ile His Thr Gly Lys Ser
 115 120 125
 Ser Thr Ala Glu His Ser Leu Met Leu Asp Gly Val Leu His His Tyr
 130 135 140
 Glu Asn Arg Ile Phe Pro Leu Asp Asp Gln Tyr Leu Leu Cys Met Cys
 145 150 155 160
 Arg Asp Val Ser Gln Glu Thr Glu Met Ala Lys Ile Asn Glu Thr Gln
 165 170 175
 Arg Ser Glu Ile Val Arg Leu Asn Ser Leu Met Asn Asp Ile Leu Asn
 180 185 190
 Asn Ile Pro Val Tyr Leu Phe Val Lys Asp Thr Gly Asn Asp Phe Arg
 195 200 205
 Tyr Leu Tyr Trp Asn Lys Ala Phe Ala Glu His Ser Gly Ile Ser Val
 210 215 220
 Gln Arg Ala Val Gly Ser Thr Asp Ala Asp Ile Phe Pro Asp Lys Lys
 225 230 235 240
 Asp Ala Glu His Phe Arg Glu Asp Asp Leu Lys Val Met Lys Leu Gly
 245 250 255
 Arg Ile Glu Tyr Leu Glu Asn Tyr Thr Thr Met Ser Gly Glu Val Arg
 260 265 270
 Thr Val Thr Thr Met Lys Thr Val Val Pro Ser Gly Gly Gln His Pro
 275 280 285
 Tyr Ile Ile Gly Val Ser Trp Asp Val Thr Glu Ile Lys Lys Thr Glu
 290 295 300
 Lys Glu Leu Ile Ala Ala Arg Ile Lys Ala Glu Glu Ala Asp Arg Met

305 310 315 320
 Lys Ser Ser Phe Leu Ala Asn Met Ser His Glu Ile Arg Thr Pro Leu
 325 330 335
 Asn Ala Ile Val Gly Phe Ser Lys Leu Ile Ile Glu Ala Asp Asn Glu
 340 345 350
 Cys Glu Lys Arg Gln Tyr Ala Asp Ile Val Glu His Asn Ser Thr Val
 355 360 365
 Leu Leu Asn Leu Phe Asn Asp Ile Leu Asp Leu Ser Ala Leu Glu Ala
 370 375 380
 Gly Ser Leu Glu Leu Ser Tyr His Pro Val Arg Leu Lys Asp Ile Cys
 385 390 395 400
 Leu Gln Leu Tyr Glu Leu His Val Lys Ser Val Lys Pro Glu Val Arg
 405 410 415
 Leu Val Leu Asp Glu Val Asp Ser Gln Leu Cys Ile Gln Gly Asp Trp
 420 425 430
 Glu Arg Ile Ser Gln Val Leu Val Asn Leu Ile Thr Asn Ala Ile Lys
 435 440 445
 Phe Thr Ser Val Gly Glu Ile His Phe Gly Phe Gln Lys Lys Ala Asp
 450 455 460
 Met Val Gln Phe Tyr Met Ser Asp Thr Gly Lys Gly Ile Pro Ala Glu
 465 470 475 480
 Arg Val Ala Thr Ile Phe Gln Arg Phe Gly Lys Ile Asp Asp Phe Val
 485 490 495
 Gln Gly Thr Gly Leu Gly Leu Thr Ile Cys Arg Met Leu Val Glu Lys
 500 505 510
 Met Gly Gly Arg Ile Trp Val Arg Ser Lys Gln Gly Glu Gly Thr Val
 515 520 525
 Phe Tyr Phe Thr Leu Pro Met Ala Lys
 530 535

<210> 7996

<211> 146

<212> PRT

<213> B.fragilis

<400> 7996

Lys Ser Tyr Ile Ser Ala Ser Arg Gly Lys Asn Ala Leu Lys Asn Ser
 1 5 10 15
 Tyr Leu His Lys Val Leu Ala Ile Ile Asn Val Glu Leu Glu Leu Leu
 20 25 30
 Ser Leu Lys Ile Lys His Pro Glu Ser Phe Val Ser Pro Ile Ser Pro
 35 40 45
 Thr Ser Glu Ser Asp Leu Tyr Val Ile Pro Lys Ser Lys Asp Leu Gly
 50 55 60
 Ile Ile Gly Ile Ala Glu Ile Val Ile Gly Leu Ser Phe Leu Gly Glu
 65 70 75 80
 Val Val Gly Lys Asp Gly Lys Pro Val Pro Leu Val Arg Leu Ala His
 85 90 95
 Gly Phe Glu Val Leu Phe Asn Leu Lys Phe Gly Ser Ile Tyr Asp Lys
 100 105 110
 Leu Asp Ala Ile Phe Met Arg Lys Pro Phe Asn Leu Thr Lys Thr Leu
 115 120 125
 Asp Ala Leu Lys Ser Ala Ile Asn Lys Glu Ala Arg Lys Arg Ala Asn
 130 135 140
 Lys His
 145

<210> 7997

<211> 692

<212> PRT

<213> B.fragilis

<400> 7997

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Ser Tyr Asn Met Gln Ser Met Ile Thr Thr Gln Leu Leu Arg Pro Gln
1          5          10          15
Ser Ile Val Val Val Gly Ala Ser Asn Asn Thr His Lys Pro Gly Gly
20          25          30
Ala Ile Leu Lys Asn Leu Ile Asn Gly Gly Tyr Gln Gly Glu Leu Arg
35          40          45
Ala Val Asn Pro Lys Glu Thr Glu Val Gln Gly Val Pro Ser Phe Ala
50          55          60
Asp Ala Lys Glu Leu Pro Asp Thr Asp Leu Ala Ile Leu Ala Ile Pro
65          70          75          80
Ala Val Leu Cys Pro Glu Val Val Glu Thr Leu Ala Ala Glu Lys Gln
85          90          95
Thr Arg Ala Phe Ile Ile Leu Ser Ala Gly Phe Gly Glu Glu Thr Gln
100         105         110
Glu Gly Ala Leu Leu Glu Glu Arg Ile Leu Glu Thr Val Asn Lys Tyr
115         120         125
Gly Ala Ser Leu Ile Gly Pro Asn Cys Ile Gly Leu Met Asn Thr Trp
130         135         140
His His Ser Val Phe Thr Gln Pro Ile Pro Asn Leu Asn Pro His Gly
145         150         155         160
Val Asp Leu Ile Ser Ser Ser Gly Ala Thr Ala Val Phe Ile Leu Glu
165         170         175
Ser Ala Val Thr Lys Gly Leu Gln Phe Asn Ser Val Trp Ser Val Gly
180         185         190
Asn Ala Lys Gln Ile Gly Val Glu Asp Val Leu Gln Tyr Met Asp Glu
195         200         205
Asn Phe Asp Val Arg Lys Asp Ser Lys Ile Lys Leu Ile Tyr Ile Glu
210         215         220
Ser Ile Lys Asn Pro Asp Arg Leu Leu Phe His Ala Ser Ser Leu Ile
225         230         235         240
Arg Lys Gly Cys Lys Ile Ala Ala Ile Lys Ala Gly Ser Ser Glu Ser
245         250         255
Gly Ser Arg Ala Ala Ser Ser His Thr Gly Ala Ile Ala Ser Ser Asp
260         265         270
Ser Ala Val Glu Ala Leu Phe Arg Lys Ala Gly Ile Val Arg Cys Tyr
275         280         285
Ser Arg Gly Glu Leu Thr Thr Val Gly Cys Ile Phe Thr Leu Pro Glu
290         295         300
Leu Lys Gly Lys Asn Phe Ala Ile Val Thr His Ala Gly Gly Pro Gly
305         310         315         320
Val Met Leu Thr Asp Ala Leu Ser Lys Gly Gly Leu Asn Val Pro Lys
325         330         335
Leu Glu Gly Pro Val Ala Glu Glu Leu Lys Ser Lys Leu Phe Pro Gly
340         345         350
Ala Ser Val Gly Asn Pro Ile Asp Ile Leu Ala Thr Gly Thr Pro Glu
355         360         365
His Leu Ser Ile Ala Ile Asp Tyr Cys Glu Glu Lys Phe Glu Asn Ile
370         375         380
Asp Ala Ile Leu Ala Ile Phe Gly Thr Pro Gly Leu Val Thr Met Phe
385         390         395         400
Glu Thr Tyr Glu Val Leu His Gln Lys Met Leu Thr Cys Lys Lys Pro
405         410         415
Leu Phe Pro Val Leu Pro Ser Val Arg Thr Ala Gly Glu Glu Val Ala
420         425         430
Phe Phe Leu Glu Lys Gly His Val Asn Phe Ala Asp Glu Val Met Leu

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435 440 445
 Gly Thr Ala Leu Ser Arg Ile Ile Asn Ala Pro Lys Pro Ala Val Pro
 450 455 460
 Glu Ile Glu Leu Phe Gly Val Asp Val Pro Arg Ile Arg Arg Ile Ile
 465 470 475 480
 Asp Ser Ile Pro Gln Asn Gly Tyr Ile Glu Pro His Tyr Val Gln Ala
 485 490 495
 Leu Leu His Ser Ala Gly Ile Pro Val Val Glu Glu Phe Val Ser Gly
 500 505 510
 Asn Lys Asp Glu Val Leu Ala Phe Ala Arg Arg Cys Gly Phe Pro Val
 515 520 525
 Val Ala Lys Val Val Gly Pro Val His Lys Ser Asp Val Gly Gly Val
 530 535 540
 Val Leu Asn Ile Lys Gly Glu Gln His Leu Ala Phe Glu Phe Asp Arg
 545 550 555 560
 Met Met Gln Ile Pro Glu Ala Arg Ala Ile Met Val Gln Pro Met Leu
 565 570 575
 Lys Gly Thr Glu Met Phe Ile Gly Ala Lys Tyr Glu Glu Lys Phe Gly
 580 585 590
 His Val Val Leu Cys Gly Leu Gly Ile Phe Val Glu Val Leu Lys
 595 600 605
 Asp Val Ser Ser Gly Leu Ala Pro Leu Ser Tyr Glu Glu Ala Tyr Ser
 610 615 620
 Met Ile His Ser Leu Arg Ala Tyr Lys Ile Ile Gln Gly Thr Arg Gly
 625 630 635 640
 Gln Lys Gly Val Asn Glu Asp Lys Phe Ala Glu Ile Ile Val Arg Leu
 645 650 655
 Ser Thr Leu Leu Arg Phe Ala Thr Glu Ile Lys Glu Met Asp Ile Asn
 660 665 670
 Pro Leu Leu Ala Thr Glu Lys Glu Val Val Ala Val Asp Ala Arg Ile
 675 680 685
 Arg Ile Glu Lys
 690

<210> 7998

<211> 282

<212> PRT

<213> B.fragilis

<400> 7998

Glu Lys Asp Met Lys Lys Leu Gly Ile Phe Lys Tyr Lys Tyr Val Gly
 1 5 10 15
 Glu Asn Val Ile Gln Ser Gly Phe Thr Val Leu Asp Lys Ile Thr Tyr
 20 25 30
 Gly Trp Lys Asn Gly Glu Leu Ile Val Ile Gly Gly Arg Pro Ala Met
 35 40 45
 Gly Lys Thr Ala Phe Gly Leu Ser Leu Val Arg Asn Ile Ala Ile Ile
 50 55 60
 Asp Arg Ile Pro Thr Ala Tyr Phe Ser Leu Glu Met Ser Ser Val Gln
 65 70 75 80
 Phe Met Asn Arg Phe Leu Leu Asn Leu Ser Gly Ile Glu Arg Phe Gln
 85 90 95
 Ser Lys Pro Tyr Asn Lys Lys Glu Gln Ala Ile Leu Asp Asp Ala Glu
 100 105 110
 Lys Val Ile Asp Asp Ala Pro Ile Phe Leu Asp Asp Thr Pro Ser Leu
 115 120 125
 Ser Val Gln Glu Leu Arg Thr Arg Ala Phe Arg Leu Val Arg Glu Tyr
 130 135 140
 Gln Val Lys Leu Ile Ile Ile Asp Tyr Leu Gln Leu Met Asn Ala Ser

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145          150          155          160
Gly Met Val Phe Asn Asn Arg Lys Glu Glu Ile Ser Thr Ile Thr Arg
          165          170          175
Ser Leu Lys Ala Leu Ala Met Glu Leu Asn Ile Pro Ile Ile Ala Phe
          180          185          190
Ser Gln Leu Asn Arg Gly Val Glu Ser Arg Glu Gly Ile Glu Gly Lys
          195          200          205
Arg Pro Gln Leu Arg Asp Leu Arg Glu Ser Gly Asn Ile Glu Gln Asp
          210          215          220
Ala Asp Met Val Cys Phe Leu His Arg Pro Glu Tyr Tyr Lys Ile Tyr
225          230          235          240
Gln Asp Asp Lys Gly Asn Asp Leu His Gly Met Ala Glu Ile Ile Val
          245          250          255
Ser Lys Asn Arg Asn Gly Lys Thr Gly Asp Ala Leu Leu Lys Phe Ser
          260          265          270
Gly Gln Phe Leu Arg Phe Glu Asn Pro Thr
          275          280

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<210> 7999

<211> 260

<212> PRT

<213> B.fragilis

<400> 7999

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Gln Glu Asp Met His Ser His Pro Ser Pro Lys Phe Ser Val Ile Thr
1          5          10          15
Val Thr Tyr Asn Ala Glu Lys Val Leu Glu Asp Thr Val Gln Ser Val
          20          25          30
Ile Ser Gln Thr Tyr His His Val Glu Tyr Ile Ile Ile Asp Gly Ala
          35          40          45
Ser Lys Asp Gly Thr Leu Glu Ile Val Asn Arg Tyr Arg Asp Arg Ile
50          55          60
Asn Gln Leu Val Ser Glu Pro Asp Lys Gly Leu Tyr Asp Ala Met Asn
65          70          75          80
Lys Gly Ile Ala Leu Ala Thr Gly Asp Tyr Leu Cys Phe Leu Asn Ala
          85          90          95
Gly Asp Ser Phe His Glu Asp Asp Thr Leu Gln Lys Ile Val His Ser
          100          105          110
Ile Asn Gly Asn Glu Leu Pro Asp Ile Leu Tyr Gly Glu Thr Ala Leu
          115          120          125
Val Asp Ala Glu Arg His Phe Leu Arg Met Arg Arg Leu Ser Ala Pro
130          135          140
Glu Thr Leu Asn Trp Lys Ser Phe Lys Gln Gly Met Leu Val Cys His
145          150          155          160
Gln Ala Phe Phe Pro Arg His Thr Leu Ile Glu Pro Tyr Asp Leu Gln
          165          170          175
Tyr Arg Phe Ser Ala Asp Phe Asp Trp Cys Ile Arg Ile Met Lys Lys
          180          185          190
Ala Arg Thr Phe His Asn Thr His Leu Ile Leu Ile Asp Tyr Leu Ala
195          200          205
Glu Gly Met Thr Thr Gln Asn His Lys Ala Ser Leu Leu Glu Arg Phe
210          215          220
Arg Ile Met Thr Arg His Tyr Gly Leu Leu Ser Thr Leu Ala Tyr His
225          230          235          240
Ala Trp Phe Val Val Arg Ser Leu Ser Arg Asn Ser Ala Thr Pro Ser
          245          250          255
Asp Ala Pro Phe
          260

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145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280

<210> 8000
 <211> 380
 <212> PRT
 <213> B.fragilis

<400> 8000

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Ser Asp Arg Ile Met Lys Lys Ile Leu Leu Val Phe Gly Thr Arg Pro
1      5      10      15
Glu Ala Ile Lys Met Ala Pro Leu Val Lys Ala Leu Gln Arg Asp Thr
      20      25      30
Glu His Phe Glu Thr Lys Val Cys Val Thr Ala Gln His Arg Gln Met
      35      40      45
Leu Asp Gln Val Leu Glu Val Phe Asp Ile Ile Pro Asp Tyr Asp Leu
      50      55      60
Asn Ile Met Ala Pro Asn Gln Asp Leu Tyr Asp Ile Thr Thr Lys Val
65      70      75      80
Leu Leu Gly Leu Arg Asp Val Leu Lys Asp Phe Cys Pro Asp Thr Val
      85      90      95
Leu Val His Gly Asp Thr Thr Thr Ser Met Ala Ala Ser Leu Ala Ala
      100     105     110
Phe Tyr Arg Gln Val Ala Val Gly His Val Glu Ala Gly Leu Arg Thr
      115     120     125
Tyr Asp Met Leu Ser Pro Trp Pro Glu Glu Met Asn Arg Gln Val Thr
      130     135     140
Asp Arg Ile Cys Thr Tyr Tyr Phe Ala Pro Thr Gly Lys Ser Lys Gln
145      150      155      160
Asn Leu Leu Gln Glu Asn Ile Asp Ala Lys Lys Ile Phe Val Thr Gly
      165     170     175
Asn Thr Val Ile Asp Ala Leu Leu Met Ala Val Asp Ile Ile Ser Lys
      180     185     190
Lys Pro Gly Ile Lys Glu Lys Leu His Gln Glu Leu Arg Asp Lys Gly
      195     200     205
Tyr Glu Val Gly Gln Arg Glu Tyr Ile Leu Val Thr Gly His Arg Arg
      210     215     220
Glu Asn Phe Gly Glu Gly Phe Leu His Ile Cys Lys Ala Ile Arg Glu
225      230      235      240
Leu Ala Ala Leu His Pro Glu Met Asp Ile Val Tyr Pro Val His Leu
      245     250     255
Asn Pro Asn Val Gln Lys Pro Val Tyr Glu Leu Leu Ser Gly Val Asp
      260     265     270
Asn Val Tyr Leu Ile Ser Pro Leu Asp Tyr Leu Pro Phe Ile Tyr Ala
      275     280     285
Met Gln His Ser Thr Leu Leu Leu Thr Asp Ser Gly Gly Val Gln Glu
      290     295     300
Glu Ala Pro Ser Leu Gly Lys Pro Val Leu Val Met Arg Asn Thr Thr
305      310      315      320
Glu Arg Pro Glu Ala Val Glu Ala Gly Thr Val Lys Leu Val Gly Thr
      325     330     335
Asp Ala Glu Ala Ile Val Ser Asn Val Thr Glu Leu Leu Arg Asn Lys
      340     345     350
Glu Leu Tyr Arg Arg Met Ser Glu Thr His Asn Pro Tyr Gly Asp Gly
      355     360     365
His Ala Cys Glu Arg Ile Leu Ser Val Leu Thr Arg
      370     375     380

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<210> 8001
 <211> 1014
 <212> PRT
 <213> B.fragilis

<400> 8001

Asp Lys Leu Ile Met Lys Leu Val Lys Tyr Phe Leu Gln Lys Arg Ala
 1 5 10 15
 Val Thr Ile Leu Leu Val Leu Val Leu Ala Gly Gly Leu Phe Ser
 20 25 30
 Tyr Phe Lys Met Gly Lys Leu Glu Asp Ala Pro Phe Thr Ile Lys Gln
 35 40 45
 Ala Leu Val Leu Thr Ser Tyr Pro Gly Ala Ser Pro Ala Glu Val Gln
 50 55 60
 Ser Gln Val Thr Asp Ile Leu Glu Glu Ala Ile Gln Ser Leu Gly Glu
 65 70 75 80
 Leu Tyr Tyr Leu Lys Thr Glu Asn Arg Ala Gly Leu Ser Lys Ile Thr
 85 90 95
 Val Tyr Val Lys Lys Glu Ile Arg Ala Glu Glu Met Gln Gln Leu Trp
 100 105 110
 Asp Lys Leu Arg Arg Lys Val Asn Asp Val Gln Asp Lys Leu Pro Ala
 115 120 125
 Gly Ala Gly Thr Ser Ile Val Asn Asp Asp Phe Gly Asp Val Leu Gly
 130 135 140
 Val Phe Tyr Gly Leu Thr Gly Asp Gly His Thr Tyr Arg Glu Leu Glu
 145 150 155 160
 Asp Gln Ala Lys Phe Ile Lys Asn Glu Leu Leu Lys Val Lys Asp Val
 165 170 175
 Ala Lys Ile Glu Ile Tyr Gly Val Gln Thr Pro Thr Ile Asp Val Leu
 180 185 190
 Ile Ser Pro Ser Val Met Ala Gln Ser Gly Val Thr Thr Ala Asp Met
 195 200 205
 Met Arg Ala Phe Glu Thr Gln Asn Lys Met Val Asp Ala Gly Gly Ile
 210 215 220
 Asn Ala Gly Thr Asn Arg Ile Arg Ile Glu Ser Thr Gly Asn Phe Tyr
 225 230 235 240
 Ser Leu Asp Asp Ile Arg Asp Leu Thr Ile Val Ser Arg Thr Gly Glu
 245 250 255
 His Phe Arg Leu Ala Asp Ile Ala Gln Ile Glu Glu Gly Tyr Gln Thr
 260 265 270
 Pro Pro Ala Asn Gln Met Arg Ile Asn Gly Ser Pro Ala Val Gly Ile
 275 280 285
 Ala Ile Ser Thr Val Pro Thr Gly Asn Val Val Asp Met Ala Glu Asp
 290 295 300
 Ile Lys Met Arg Ile Gly Glu Leu Ser Gln Ser Met Pro Asp Gly Tyr
 305 310 315 320
 Glu Leu Ile Ser Ile Tyr Asp Gln Gly Tyr Glu Ser Ala Val Ala Asn
 325 330 335
 Gln Gly Phe Ile Leu Asn Leu Ile Ile Ser Val Ile Thr Val Val Ala
 340 345 350
 Ile Leu Leu Phe Phe Ile Gly Phe Lys Asn Gly Leu Leu Ile Gly Ser
 355 360 365
 Gly Leu Val Phe Ser Ile Phe Ala Thr Leu Ile Val Met Met Ala Cys
 370 375 380
 Asp Ile Ala Leu Gln Arg Met Ser Leu Ala Ala Ile Ile Ala Met
 385 390 395 400
 Gly Met Leu Val Asp Asn Ala Ile Val Val Ser Asp Ser Ala Leu Ile
 405 410 415
 Asn Met Glu Arg Gly Met Arg Lys Arg Val Ala Ile Met Arg Ala Cys
 420 425 430
 Ser Ser Thr Ala Leu Pro Leu Leu Ala Ala Thr Val Ile Ala Ile Leu
 435 440 445
 Thr Phe Leu Pro Ile Tyr Tyr Ser Pro His Ile Thr Gly Glu Leu Leu

450	455	460
Ser Ser Leu Val Val Val Ile Gly Val Ser Leu Met Phe Ser Trp Val		
465	470	475
Phe Ala Leu Thr Gln Thr Pro Phe Phe Ile Gln Glu Phe Val Arg Arg		480
	485	490
Pro Arg Pro Glu Glu Leu Lys Ala Ser Leu Phe Asp Gly Lys Tyr Tyr		495
	500	505
His Leu Phe Arg Lys Leu Leu Arg Trp Val Leu Arg His Arg Thr Met		510
	515	520
Thr Ile Ala Ser Leu Val Val Leu Leu Leu Leu Ser Ala Trp Ser Phe		525
	530	535
Lys Phe Ile Pro Lys Val Phe Val Pro Ala Leu Asp Lys Gln Tyr Phe		540
545	550	555
Thr Val Asp Met Trp Leu Pro Glu Gly Thr Thr Ile Gly Glu Thr Asp		560
	565	570
Arg Ile Ala Gly Glu Ile Ser Asp Tyr Ile Arg Thr His Glu Glu Thr		575
	580	585
Glu Met Val Ser Ser Tyr Ile Gly Arg Thr Pro Pro Arg Tyr Tyr Leu		590
	595	600
Ser Asn Ile Ser Phe Gly Pro Gln Ser Asn Tyr Ala Gln Leu Leu Val		605
610	615	620
Lys Cys Lys Ser Ser Lys Glu Ser Arg Ala Leu Asn Ala Leu Leu Gln		625
625	630	635
Asp Ser Ile Arg Leu Lys Tyr Pro Glu Pro Leu Ile Lys Val Asn Lys		640
	645	650
Phe Glu Leu Ser Pro Leu Thr Glu Ala Met Ile Glu Ala Arg Phe Leu		655
	660	665
Gly Pro Asp Pro Ala Val Leu Asp Ser Leu Ala Gly Glu Ala Ile Glu		670
	675	680
Ile Met Arg Arg Asn Pro Lys Val Ala Asp Ala Arg Asn Glu Trp Gly		685
690	695	700
Asn Met Ser Met Val Met Arg Pro Val Tyr Asp Pro Val Lys Ala Gly		705
705	710	715
Ala Leu Gly Ile Thr Lys Ser Gln Met Met Glu Ser Val Lys Ser Ile		720
	725	730
Ser Asp Gly Thr Arg Val Gly Val Tyr Arg Asn Asp Glu Lys Lys Val		735
	740	745
Pro Val Leu Leu Lys Ser Glu Gly Ala Asn Ile Thr Asp Ala Arg Ser		750
	755	760
Leu Gly Asn Phe Ser Val Trp Asn Gly Glu His Ser Ala Pro Leu Ser		765
770	775	780
Gln Val Thr Glu Arg Ile Glu Thr Thr Trp Glu Trp Pro Gln Met Arg		785
785	790	795
Thr Tyr Asn Arg Gln Leu Ser Met Ala Ala Met Cys Gly Val Lys Ser		800
	805	810
Gly Tyr Thr Met Ala Glu Val His Gly Glu Ile Arg Arg Glu Ile Glu		815
	820	825
Ala Met Lys Leu Pro Glu Gly Tyr Thr Phe Phe Trp Asp Ser Gln Tyr		830
	835	840
Lys Asp Gln Arg Glu Ala Met Gln Ala Ile Gly Lys Phe Phe Pro Leu		845
850	855	860
Ala Phe Leu Val Leu Val Ile Leu Val Ala Leu Phe Gly Asn Phe		865
865	870	875
Arg Asp Pro Val Ile Ile Leu Cys Val Leu Pro Leu Ser Ile Ile Gly		880
	885	890
Val Ala Val Gly Met Leu Leu Thr Gly Phe Asp Phe Gly Phe Pro		895
	900	905
Ile Ala Gly Trp Leu Gly Leu Leu Gly Met Val Ile Lys Asn Val Ile		910
915	920	925

Val Leu Leu Asp Glu Ile Asp Val Gln Arg Arg Glu Gly Val Val Pro
 930 935 940
 Tyr Thr Ala Val Ile Glu Ser Thr Val Ser Arg Thr Arg Pro Val Leu
 945 950 955 960
 Met Ala Ala Thr Thr Thr Ile Leu Gly Met Val Pro Leu Leu Phe Asp
 965 970 975
 Ile Ala Phe Gly Gly Met Ala Ala Thr Ile Ile Phe Gly Leu Thr Phe
 980 985 990
 Ala Thr Leu Leu Thr Leu Phe Val Thr Pro Ala Leu Tyr Ala Ile Phe
 995 1000 1005
 Tyr Lys Ile Lys Glu Lys
 1010

<210> 8002
 <211> 122
 <212> PRT
 <213> B.fragilis

<400> 8002

His Gly Thr Ile Ile Tyr Ile Ser Phe Val Pro Leu Ile Tyr Arg Cys
 1 5 10 15
 Ile Val Asn Arg Gly Phe Asn Ser Asn Leu Lys Lys Met Lys Asn Glu
 20 25 30
 Gly Ile Ile Leu Ile Lys Gly Thr Glu Leu Gln Asp Leu Ile Asn Lys
 35 40 45
 Ala Val Ala Leu Ala Phe Glu Asn Val Cys Leu Ala Asp Arg Arg Lys
 50 55 60
 Ala Lys Thr Ala Glu Lys Leu Leu Ser Arg Asn Glu Ala Ser Lys Ala
 65 70 75 80
 Leu Lys Ile Ser Leu Ser Ser Leu Asn Arg Arg Val Asn Asp Gly Ser
 85 90 95
 Ile Lys Cys Tyr Lys Ile Gly Ala Arg Ser Phe Phe Lys Glu Ser Glu
 100 105 110
 Leu Glu Asn Leu Leu Thr Phe Leu Asn Lys
 115 120

<210> 8003
 <211> 213
 <212> PRT
 <213> B.fragilis

<400> 8003

His Pro Asn Met Lys Lys Leu Tyr Ser Leu Leu Leu Thr Ala Leu Phe
 1 5 10 15
 Ala Leu Pro Ala Ala His Val His Ala Thr Asp Tyr Thr Gln Gly Leu
 20 25 30
 Ser Ile Trp Phe Asp Thr Pro Asn Thr Leu Gln Gly Arg Ala Ile Trp
 35 40 45
 Tyr Gly Ser Arg Pro Asp Leu Trp Lys Gly Glu Ser Lys Pro Glu Ser
 50 55 60
 Ala Gly Asp Thr Ala Arg Asn Pro Asp Ala Asn Trp Glu Ser Gln Ser
 65 70 75 80
 Leu Pro Ile Gly Asn Gly Ser Ile Gly Ala Asn Ile Met Gly Ser Ile
 85 90 95
 Glu Ala Glu Arg Ile Thr Phe Asn Glu Lys Thr Leu Trp Arg Gly Gly
 100 105 110
 Pro Asn Thr Ser Arg Gly Ala Asp Ala Tyr Trp Asn Val Asn Lys Gln
 115 120 125
 Ser Ala His Val Leu Lys Glu Ile Arg Gln Ala Phe Thr Asp Gly Asp

130		135		140
Gln Lys Lys Ala Glu Met Leu Thr Arg Lys Asn Phe Asn Ser Glu Val				
145		150		155
Pro Tyr Glu Ser Asn Arg Glu Lys Pro Phe Arg Phe Gly Asn Phe Thr				160
		165		170
Thr Met Gly Glu Leu Tyr Ile Glu Thr Gly Leu Ser Thr Val Asn Met				175
		180		185
Ser Asp Tyr Lys Arg Ile Leu Ser Met Asp Ser Ala Leu Gly Arg Cys				190
		195		200
Thr Ile Gln Glu Arg				205
210				

<210> 8004

<211> 396

<212> PRT

<213> B.fragilis

<400> 8004

Val Met Asn Ile Leu Ile Gln Gln Thr Lys Ala Phe Pro His Arg Ala				
1	5		10	15
Asn Ser Phe Tyr Trp Phe Tyr Ala Gln Leu Thr Glu Trp Leu Thr Ala				
	20		25	30
His Gly Val Asp Ser Lys Leu Tyr Phe Ser Tyr Leu Glu Leu Ala Asp				
	35		40	45
Ser Glu Phe Glu Asn Gly Leu Leu Leu Pro Asp His Tyr Ser Gln Phe				
	50		55	60
Tyr Thr Pro Arg Asn Ile Glu Ala Ile Cys Arg Phe Ile Ile Asp Lys				
	65		70	75
Gln Ile Asp Val Ile Leu Asp Tyr Ser His Val Ile Pro Gly Asp Thr				
	85		90	95
Arg Lys Tyr Tyr Leu Glu Ile Lys Lys Arg Asn Pro Gly Ile Lys Ile				
	100		105	110
Cys Thr Met Ile His Asn Cys Pro Ser His Thr Thr Gln Leu Lys Gln				
	115		120	125
Tyr Glu Leu Ser Thr Leu Arg Phe Lys Asp Val His Gly Pro Lys Lys				
	130		135	140
Leu Phe Gln Trp Met Leu Pro Gln Leu Tyr Ile Ser Leu Leu Lys Lys				
	145		150	155
Val Val Ser His Gln Asn Arg Ser Ala Tyr Asp Thr Leu Asp Glu Val				
	165		170	175
Val Leu Leu Ser Pro Ala Tyr Ile Pro Glu Phe Lys Lys Leu Ile Gly				
	180		185	190
Lys Lys Asp Ala Trp Lys Leu Ser Ala Ile Pro Asn Ala Ile Lys Pro				
	195		200	205
Val His Ser Asn Ile Pro Ile Glu Glu Lys Asp Lys Glu Ile Ile Phe				
	210		215	220
Val Gly Arg Met Ala Thr Glu Lys Ala Leu Pro Lys Leu Leu Lys Ile				
	225		230	235
Trp Gly Met Val Gln Asp Lys Leu Pro Asp Trp Lys Leu Thr Leu Val				
	245		250	255
Gly Asp Gly Pro Gln Phe Gly Thr Cys Arg Gln Ile Ile Ala Glu Lys				
	260		265	270
Lys Leu Lys Arg Val Cys Leu Thr Gly His Gln Met Ser Ile Pro Tyr				
	275		280	285
Ile Asp Arg Ala Arg Ile Leu Cys Leu Thr Ser Val Ile Glu Gly Leu				
	290		295	300
Pro Thr Val Phe Thr Glu Ala Met Ser Leu Gly Val Ile Pro Ile Gly				
	305		310	315
Phe Asp Ser Phe Asn Ala Ile Tyr Asp Met Ile Asp Asp Gly Ile Asp				

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          325              330              335
Gly Phe Ile Ile Pro Asp Asn Asn Tyr Glu Gln Tyr Ala Glu Thr Ile
          340              345              350
Leu Arg Leu Ala Gln Asn Asp Thr Leu Arg Cys Gln Ile Ala Tyr Lys
          355              360              365
Ala Gln Lys Arg Lys Asn Arg Tyr Asp Ile Glu Gln Val Gly Pro Leu
          370              375              380
Trp Met Glu Thr Phe Arg Lys His Gly Leu Ile Lys
385              390              395

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<210> 8005
 <211> 165
 <212> PRT
 <213> B.fragilis

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<400> 8005
Ala Thr Ser Ile Leu His Lys Pro Arg Asn Pro Arg Leu Asn Ile Gln
1          5          10          15
Lys Asn Ser His Thr Ser Pro Lys Lys Ile Lys Phe Leu Ile Asn Thr
          20          25          30
Tyr Val Asn Thr Val Phe Phe Lys Ile Arg Ser Lys Tyr Lys Leu Tyr
          35          40          45
Leu Gln Ile Ile Thr Phe Asn Lys Asn Ser Met Lys Gln Thr Leu Ser
          50          55          60
Lys Ala Val Val Thr Ile Ile Ile Ala Cys Thr Ala Leu Tyr Ala Trp
65          70          75          80
Asn His Lys Gln Pro Val Leu Thr Asn Val Gln Leu Gln Asn Leu Glu
          85          90          95
Ala Ile Ala Ala Gly Glu Glu Gly Ala Cys Ile Arg Trp Ile Glu Gln
          100         105         110
Thr Cys Tyr Tyr Ser Phe Ser Glu Glu His Asp Asn Glu Pro His Tyr
          115         120         125
Glu Cys Asn Gly Ser Ser Gly Gln Ala Gly Met Thr Ser Cys Gly Val
          130         135         140
Ile Asn Asn Lys Lys Pro Thr Phe Gly Tyr Val Lys Gly Thr Cys Leu
145         150         155         160
Ile Cys Ile Glu His
          165

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<210> 8006
 <211> 401
 <212> PRT
 <213> B.fragilis

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<400> 8006
Leu Cys Gly Ile Ser Ile Glu Asn Met Gln Lys Tyr Leu Leu Phe Leu
1          5          10          15
Phe Leu Phe Ile Cys Ala Ser Cys Ile Gly Ser Lys Asn Gly Val Leu
          20          25          30
Glu Gln Asn Lys Ile Phe Asp Ile Met Ile Asp Pro Asp Arg Val Thr
          35          40          45
Asp Asp Leu Asp Leu Ser Cys Ile Leu Thr Asp Ser Ile Glu Ile Ile
          50          55          60
Lys Leu Asn Thr Ser Asp Glu Cys Leu Ile Gly Glu Ile Lys Gln Val
65          70          75          80
Ser Phe Thr Asp Gln Phe Ile Phe Val Ser Asp Pro Tyr Val Ser Gln
          85          90          95
Lys Ile Phe Met Phe Asp Lys Asn Gly Lys Phe Val Lys Asn Ile Gly
          100         105         110

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Arg Gln Gly Gly Gly Pro Gly Glu Tyr Ser Ile Ile Ser Lys Phe Thr
 115 120 125
 Ile Thr Gly Asp Ser Leu Leu Ile Gln Asp Tyr Asn Leu His Lys Tyr
 130 135 140
 Leu Val Tyr Ser Ile Lys Glu Asp Cys Phe Val Ser Asp Ile Arg Tyr
 145 150 155 160
 Glu Pro His His His Ser Ile Val Ala Tyr Pro Asp Ile Leu Tyr Phe
 165 170 175
 Val Ser Gly Tyr Phe Pro Ala Asp Ala Gly Cys Tyr Asn Leu Tyr Arg
 180 185 190
 Phe Asp Leu Arg Asn Ser Ser Met Glu Ser Tyr Leu Pro Phe Ser Gln
 195 200 205
 Lys Ile Ala Val Asn Arg Ser Ala Trp Ser Ile Glu Glu Gln Cys Ser
 210 215 220
 Arg Val Cys Glu Arg Ser Phe Val Phe Tyr Ala Leu Ser Asp Thr Ile
 225 230 235 240
 Tyr Gln Val Asn Lys Asp Lys Ala Ile Pro Val Tyr Thr Leu Asn Phe
 245 250 255
 Ser Lys Arg Ser Ile Pro Asp Asp Phe Lys Glu Ser His Ser Gly Asp
 260 265 270
 Glu Ile Met Asp Leu Ala Phe Gln Glu Gly Tyr Val Arg Gly Pro Ile
 275 280 285
 His Leu Gln His Ser Asp Arg Trp Met Leu Gly Thr Tyr Val Asp Gly
 290 295 300
 Lys Glu Tyr Arg Tyr Met Leu Ile Asp Lys Lys Thr Gly Gln Tyr Gln
 305 310 315 320
 Ile Gly Lys Gln Leu Gly Ala Arg Lys Glu Gly Asn Leu Thr Ile Pro
 325 330 335
 His Asn Phe Leu Ile Glu Asp Asn Tyr Phe Ile Ser Trp Leu Pro Val
 340 345 350
 Arg Leu Leu Lys Leu Trp Lys Asn His Phe Ser Pro Asn Thr Phe Arg
 355 360 365
 Asp Lys Gly Arg Val Gly Lys Trp Glu Arg Leu Ile Asp Ser Leu Asp
 370 375 380
 Ile Asp Asp Asn Pro Val Leu Ile Lys Cys Lys Ile Arg Asn Asn Glu
 385 390 395 400
 Thr

<210> 8007

<211> 85

<212> PRT

<213> B.fragilis

<400> 8007

Tyr Ser Leu Ile Ile Lys His Phe Met Leu Met Asn Asp Leu Ser Lys
 1 5 10 15
 Thr Arg Ile Ile Ile Leu Leu Thr Asp Ser Ser Gln Lys Val Thr Asp
 20 25 30
 Thr Glu Met Gln Asp Ala Tyr Asp Glu Phe Ile Arg Cys Ile Ala Thr
 35 40 45
 Ile Gly Asn Ser Lys Asp Asn Ser Asn Ile Phe Arg Met Leu Asn Leu
 50 55 60
 Thr Arg Ile Glu Ile Ala Pro Leu Lys Glu Leu Tyr Gln Cys Glu Gln
 65 70 75 80
 Gly Glu Lys Cys Ala
 85

<210> 8008

<211> 339
 <212> PRT
 <213> B.fragilis

<400> 8008

Glu	Asn	Thr	Met	Lys	Val	Thr	Ile	Tyr	Pro	Tyr	Ser	Ile	Asn	Lys	Ser
1				5					10					15	
Asp	Ile	Arg	Val	Asn	Pro	Tyr	Ile	Ser	Asp	Phe	Ile	His	Ala	Leu	Gln
			20					25					30		
Gln	Asn	Gly	Ile	Thr	Ile	Ala	Asn	Pro	Pro	His	Lys	Asn	Pro	Leu	Phe
		35					40					45			
Ser	Leu	Ile	Pro	Arg	Lys	Ala	Asp	Ser	Asp	Ala	Tyr	Ile	Phe	His	Trp
	50					55					60				
Pro	Glu	Asn	Val	Pro	Asp	Tyr	Lys	Tyr	Gly	Met	Leu	Gln	Thr	Leu	Ala
65					70					75					80
Ala	Ile	Trp	Leu	Leu	Phe	Lys	Ile	Lys	Cys	His	His	Lys	Lys	Ile	Ile
			85						90					95	
Trp	Phe	Leu	His	Asn	Lys	Gln	Pro	His	Val	Met	Lys	His	Arg	Trp	Ser
			100					105					110		
Lys	Lys	Leu	Leu	Ile	His	Leu	Leu	Leu	Arg	Lys	Ala	Asp	Leu	Ile	Val
		115					120					125			
Thr	His	Ala	Thr	Glu	Gly	Ile	Lys	Val	Val	Gln	Asp	Gln	Tyr	Pro	Lys
		130				135					140				
Ala	Val	Ala	Lys	Thr	Val	Phe	Leu	His	His	Pro	Thr	Lys	Asn	Arg	Ile
145					150					155					160
Glu	Glu	Tyr	Ile	Pro	Gln	Pro	Pro	Glu	Thr	Asp	Leu	Leu	Ile	Trp	Gly
			165						170					175	
Asn	Ile	Ser	Arg	Tyr	Lys	Gly	Val	Pro	Glu	Phe	Val	Arg	Phe	Ala	Thr
			180					185					190		
Gln	His	Ser	Leu	Lys	Leu	Lys	Thr	Lys	Ile	Ile	Gly	Lys	Cys	Ser	Ser
		195					200					205			
Gln	Glu	Leu	Leu	Glu	Glu	Leu	Arg	Lys	Glu	Ser	Asn	Glu	Met	Ile	Ser
		210				215					220				
Ile	Glu	Asp	Arg	Ser	Ile	Pro	Phe	Glu	Glu	Leu	Lys	Gln	Glu	Ile	Arg
225				230						235					240
Arg	Ser	Arg	Phe	Val	Leu	Val	Pro	Tyr	Ala	Ala	Glu	Ser	Ile	Leu	Ser
			245						250					255	
Ser	Gly	Ile	Leu	Met	Asp	Ser	Leu	Ser	Phe	Gly	Ala	Lys	Val	Ile	Gly
		260					265						270		
Pro	Ala	Val	Gly	Ser	Phe	Arg	Asp	Tyr	Ala	Ala	Glu	Pro	Leu	Leu	Asn
		275					280					285			
Val	Tyr	Thr	Phe	His	Thr	Phe	Asp	Asp	Ile	Gln	Glu	Leu	Val	Asp	Lys
	290					295					300				
Ala	Asn	Glu	Ala	Thr	Asp	Ile	Ala	Gly	Tyr	Asn	Arg	Phe	Leu	Asn	Ala
305				310						315					320
His	Ser	Trp	Asn	Glu	Phe	Gly	Lys	Lys	Phe	Gln	Asn	Leu	Leu	Gln	Lys
			325						330					335	
Ile	Ile	Gln													

<210> 8009
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8009

Phe	Tyr	Gln	Ile	Lys	Ile	Ser	Pro	Glu	Glu	Lys	Tyr	Phe	Phe	Arg	Gly
1				5					10					15	
Tyr	Phe	Cys	Phe	Ile	Thr	Gln	Ser	Ser	Leu	His	Pro	Glu	Lys	Tyr	Ile

```

      20      25      30
His His Thr Glu Ile Ser Lys Pro Asn Val Thr Ala Ile Arg Ile Leu
      35      40      45
Leu Leu Thr Phe Tyr Tyr Leu Tyr Cys Lys Ile Gln Lys Val Ser Tyr
      50      55      60
Leu Thr Phe Trp Tyr Phe Ser Thr Pro Thr Phe Leu Asn Ile Asn Thr
      65      70      75      80
Ile Lys Gln Asn Arg Ile Glu Asn Arg Asn Glu Lys Thr Lys Pro
      85      90      95

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<210> 8010

<211> 306

<212> PRT

<213> B.fragilis

<400> 8010

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Leu Leu Lys Ile Ile Thr Met Met Thr Lys Arg Asp Phe Val Pro Ser
1      5      10      15
Asn Ser Phe Gly Gln Tyr Val Ser Pro Tyr Arg Arg Leu Asp Asp Gln
      20      25      30
Ile Ala Ile Phe His Phe Leu Cys Lys Phe Phe Pro Ala Asp Leu Val
      35      40      45
Gln Glu Val Leu Val Trp Leu Gly Val Met Ala Thr Tyr Arg Phe Cys
      50      55      60
Cys Asn Gly Lys Phe Gly Ala Leu Phe Lys Phe Val Asp Tyr Ser Asp
      65      70      75      80
Thr Ile Arg Arg Val Gln Glu Val Cys Leu Asp Pro Glu Thr Gly Arg
      85      90      95
Ile Leu Gln Ser Gly Asp Ala Arg Ala Gln Ile Ala Asn Thr Leu Arg
      100      105      110
Pro Asn Ala Thr Tyr Ser Cys Met Pro Glu Gly Tyr Lys Ala Cys Met
      115      120      125
Ile Glu Lys Glu Leu Met Asn Ser Lys Ser Glu Val Val Tyr Asp Cys
      130      135      140
Lys Pro Cys Phe Phe Gly Gln Ala Gln Cys Phe Glu His Ala Arg Tyr
      145      150      155      160
Asp Arg Pro Tyr Gly Ile Val Lys His Val Val Ser Ala Ile Phe Leu
      165      170      175
Asn Ile Cys Gly Tyr Lys Asp Lys Asn Ser Pro Val Trp Leu Ala Thr
      180      185      190
Gly Gly Ser Glu Leu Thr Gly Cys Asp Leu Ser Lys Ala Asp Ile Leu
      195      200      205
Lys Phe Phe Gln Phe Lys Glu Met Ile Leu Phe Pro Gly Ala Glu Leu
      210      215      220
Tyr Asp Gln Ser Lys Glu Ile Glu Gln Gln Ile Arg Leu Met Gly Met
      225      230      235      240
Lys Ala Arg Thr Ser Tyr Phe Met Glu Lys Val Glu Tyr Lys Asp Lys
      245      250      255
Gln Arg Gly Asp Asp Ile Ser Asn Tyr Ile Ile Ser Glu Ile Asn Arg
      260      265      270
Gly Val His Tyr Lys Glu Ala Tyr Glu Ser Ala Leu Asp Arg Gly Ala
      275      280      285
Leu Ala Leu Asp Trp Gly Ser Ala Met Val Asp Asn Asn Arg Met Met
      290      295      300
Lys Glu
305

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<210> 8011

<211> 99

<212> PRT

<213> B.fragilis

<400> 8011

```

Pro Met Lys Ile Tyr Ile Ser Gly Gln Ile Thr Gly Leu Glu Glu Glu
1           5           10           15
Lys Ala Lys Arg Tyr Phe Asp Lys Ala Glu Glu Ile Leu Leu Glu Lys
          20           25           30
Gly Tyr Gly Pro Val Asn Pro Met Ser Val Asn Pro Pro Met Glu Asn
          35           40           45
Lys Ser Trp Lys Asp Tyr Met Ile Asp Asp Leu Lys Leu Leu Phe Asp
          50           55           60
Cys Glu Ala Ile Tyr Leu Ile Asp Asn Trp Gln Ser Ser Lys Gly Ala
65           70           75           80
Arg Ile Glu Cys Tyr Ile Ala Lys Glu Leu Gly Met Arg Ile Leu Glu
          85           90           95
Asn Ile Glu

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<210> 8012

<211> 574

<212> PRT

<213> B.fragilis

<400> 8012

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Ile Gly Lys Ile Gly Pro Gly Asn Val Lys Asn Lys Ser Ile Met Lys
1           5           10           15
Lys Ser Phe Leu Ile Ile Leu Cys Leu Ala Leu Leu Ser Cys Val Thr
          20           25           30
Gly Cys Lys Asp Ser Thr Gln Thr Leu Leu Lys Lys Ser Val Glu Met
          35           40           45
Glu Gly Ile Ser Thr Asp Ser Met Leu Phe Tyr Leu Gln Gln Ile Gln
          50           55           60
Ser Pro Asn His Leu Asn Asp Lys Gln Arg Ala Glu Tyr Cys Phe Gln
65           70           75           80
Leu Tyr Lys Ala Thr Leu Trp Lys Thr Gln Lys Pro Lys Asp Ser Leu
          85           90           95
Leu Lys Val Cys Ile Pro Leu Phe Leu His Val Gly Asp Thr Ala Gln
          100          105          110
Trp Leu Gln Ala Gln Leu Glu Gln Ala Asn Ser Phe Phe Tyr Lys Asp
          115          120          125
Gln Pro Asp Ser Ile Leu His Ser Ala Arg Glu Leu Arg Asp Lys Thr
          130          135          140
Lys Tyr Met Thr Pro Thr Gln Gln Arg Tyr Tyr Tyr Asn Ile Gln Lys
145          150          155          160
Phe Thr Tyr Phe Asn Gln Lys Lys Tyr Pro Glu Ala Leu Lys Leu Ala
          165          170          175
Asn Lys Val Leu Ala Leu Asn Asn Pro Ser Asn Asp Thr Leu Ser Leu
          180          185          190
Phe Tyr Asp His Arg Thr Gln Leu Glu Ile Leu Arg Lys Met Gly Lys
          195          200          205
Thr Asp Glu Val Ile Glu Gly Tyr Tyr Lys Met Leu Glu Trp Phe Ala
          210          215          220
Pro Ser Lys Glu Tyr His Tyr Leu Thr Tyr Thr Ile Ala Glu Asp Ile
225          230          235          240
Val Asn Tyr Tyr Leu Gly Gln Gln Asp Phe Asp Lys Ala Leu Glu Ser
          245          250          255
Val Gln Asn Leu Arg Leu Tyr Arg Arg Asn Arg Tyr Asp Ile Pro Tyr
          260          265          270

```

Tyr Gln Leu Ile Arg Gly Gln Ile Phe Gln Ser Leu His Gln Leu Asp
 275 280 285
 Ser Ala Gly Tyr Tyr Tyr Lys Gln Ala Ala Thr Ser Thr Ser Pro Tyr
 290 295 300
 Ile Ala Ile Glu Ala Thr Ser Arg Leu Tyr Gln Leu Thr Asn Ala Thr
 305 310 315 320
 Gln Gln Pro Glu Gln Ala Tyr Tyr Leu Ala Lys Thr Glu Asp Ile Leu
 325 330 335
 Tyr Lys Asp Leu Thr Ser Asn Leu Lys Ala Lys Glu Thr Thr Arg Lys
 340 345 350
 Tyr Asn Glu Val Lys Leu Gln Asn Glu Leu Tyr Gln Leu Arg Leu Thr
 355 360 365
 Gln Gln Glu Lys Glu Leu Trp Met Met Gly Ile Ala Val Ile Leu Leu
 370 375 380
 Leu Ile Ala Leu Leu Ile Leu Phe Phe Tyr His Gln Glu Lys Lys Lys
 385 390 395 400
 Arg Leu Val Ser Glu Arg Arg Leu Gln Ala Glu Gln Ala Gly Glu Glu
 405 410 415
 Ala Arg Arg Leu Gln His Glu Asn Glu Leu Leu His Lys Glu Ala Glu
 420 425 430
 Leu Ser Ala Leu Arg Glu Lys Glu Ile Ile Met Arg Asn Lys Glu Ser
 435 440 445
 Glu Met Arg Glu Ala Leu Phe Arg His Ile Ser Phe Phe Gln Lys Leu
 450 455 460
 Pro Ser Leu His Ile Glu Asn Ser Thr Asp Asp Asn Pro Asn Arg Lys
 465 470 475 480
 Lys Ile Thr Val Ser Asp Ala Glu Trp Cys Glu Val Lys Gln Ala Val
 485 490 495
 Asn Asp Ala Phe Asn Asn Phe Val Asp Arg Leu Gln Glu Asp Tyr Pro
 500 505 510
 Gln Leu Asn Glu Lys Asp Ile Cys Phe Cys Cys Leu Val Lys Ile Asn
 515 520 525
 Val Asn Ile Gln Asp Leu Ser Asp Ile Tyr Cys Val Ser Lys Ala Ala
 530 535 540
 Ile Thr Lys Arg Lys Tyr Arg Ile Lys Thr Glu Lys Met His Ile Ser
 545 550 555 560
 Asp Glu Thr Leu Ser Leu Asp Ala Ile Leu Gln Asn Phe Gly
 565 570

<210> 8013

<211> 320

<212> PRT

<213> B.fragilis

<400> 8013

Lys Lys Glu Met Lys Leu Glu Glu Lys Thr Lys Lys Lys Asp Glu Gln
 1 5 10 15
 Gly Leu Ile Ile Lys Lys Tyr Gln Gln Tyr Leu Lys Leu Glu Lys Ser
 20 25 30
 Leu Ser Lys Asn Thr Leu Glu Ala Tyr Leu Thr Asp Leu Glu Lys Leu
 35 40 45
 Leu Ser Phe Leu Ser Ala Glu Gly Val Glu Ile Leu Glu Val Ser Leu
 50 55 60
 Thr Asp Leu Gln Arg Phe Ala Ala Gly Leu His Asp Ile Gly Ile His
 65 70 75 80
 Ala Arg Ser Gln Ala Arg Ile Ile Ser Gly Ile Lys Ser Phe Phe His
 85 90 95
 Phe Leu Ile Ile Ala Asp Tyr Ile Glu Ala Asp Pro Ser Glu Leu Leu
 100 105 110

Glu Gly Pro Lys Ile Gly Phe Lys Leu Pro Glu Val Leu Thr Val Glu
 115 120 125
 Glu Ile Asp Arg Ile Ile Ser Thr Ile Asp Leu Ser Lys Asn Glu Gly
 130 135 140
 Gln Arg Asn Arg Ala Ile Leu Glu Thr Leu Tyr Ser Cys Gly Leu Arg
 145 150 155 160
 Val Ser Glu Leu Thr Gly Leu Lys Leu Ser Asp Leu Tyr Phe Asp Glu
 165 170 175
 Gly Phe Ile Lys Val Glu Gly Lys Gly Ser Lys Gln Arg Leu Val Pro
 180 185 190
 Ile Ser Pro Lys Ala Ile Gln Glu Ile Lys Leu Tyr Phe Leu Asp Arg
 195 200 205
 Asn Arg Ile Asn Ile Lys Lys Asp His Glu Asp Tyr Leu Phe Leu Ser
 210 215 220
 Arg Arg Gly Thr His Leu Ser Arg Ile Met Ile Phe His Leu Ile Lys
 225 230 235 240
 Glu Leu Ala Asp Met Ala Gly Ile Thr Lys Asn Ile Ser Pro His Thr
 245 250 255
 Phe Arg His Ser Phe Ala Thr His Leu Leu Glu Gly Gly Ala Asn Leu
 260 265 270
 Arg Ala Ile Gln Cys Met Leu Gly His Glu Ser Ile Ser Thr Thr Glu
 275 280 285
 Ile Tyr Thr His Ile Asp Arg Asn Met Leu Arg Ser Glu Ile Ile Glu
 290 295 300
 His His Pro Arg Asn Ile Lys Tyr Arg Gln Glu Lys Lys Pro Phe Arg
 305 310 315 320

<210> 8014

<211> 417

<212> PRT

<213> B.fragilis

<400> 8014

Leu Glu Arg Ile Arg Gln Lys Val Ser Lys Phe Thr Ser Glu Asn Asn
 1 5 10 15
 Thr Val Met Lys Val Leu Tyr Thr Phe Gly Gly Met Pro His Tyr Leu
 20 25 30
 Asn Ala Met Leu Asn Lys Leu His Asn Lys Gly Val Glu Ile Thr Val
 35 40 45
 Ile Thr Pro Gln Lys Gly Asn Ala Thr Ile Gly Lys Gly Val Lys Met
 50 55 60
 Val Glu Gly Gly Thr Tyr Arg His Leu Thr Ala Ile Glu Lys Lys Ala
 65 70 75 80
 Phe Tyr Gly Lys Ser Ser Tyr Pro Ser Leu Pro Glu Ile Val Arg Glu
 85 90 95
 Glu Lys Pro Asp Ile Leu Ile Met Gly Trp Pro Tyr Phe Leu Gln Val
 100 105 110
 Phe Phe Gln Pro Arg Leu Arg Lys Ala Met Lys Glu Cys Arg Thr Arg
 115 120 125
 Leu Val Ile Arg Glu Ile Pro Phe Gln Thr Pro Pro Tyr Gly Lys Ile
 130 135 140
 Lys Glu Tyr Phe His Glu Asn Pro Met Tyr Asp Glu Asn Met Arg Leu
 145 150 155 160
 Val Ser Thr Gly Thr Gly Phe Tyr Leu Lys Gln Trp Leu Thr Ala Lys
 165 170 175
 Ile Arg Lys Tyr Cys Tyr Ala Arg Ile Thr Gly Thr Leu Asn Tyr Ser
 180 185 190
 Thr Ala Ala Tyr Asp Ile Leu Pro Ser Tyr Gly Val Lys Gln Glu Gln
 195 200 205

Ile His Val Thr Tyr Asn Ser Thr Asp Thr Asp Ala Leu Leu Lys Glu
 210 215 220
 Lys Glu Ala Val Leu Thr Ser Pro Pro Leu Leu Pro Pro Ser Ser Lys
 225 230 235 240
 Arg Ala Leu His Ile Gly Arg Leu Val Lys Trp Lys Arg Val Asp Leu
 245 250 255
 Leu Ile Asp Ala Phe Thr Lys Val Ile Ala Ser His Pro Asp Ala Glu
 260 265 270
 Leu Val Val Val Gly Asp Gly Pro Glu Leu Asp Asn Leu Lys Lys Gln
 275 280 285
 Ala Ala Asp Leu Asn Leu Thr Glu Gln Val Arg Phe Ile Gly Ala Val
 290 295 300
 Tyr Ser Pro Lys Glu Leu Gly Ala Tyr Met Asn Glu Ser Thr Val Tyr
 305 310 315 320
 Val Leu Ala Gly Met Gly Gly Leu Ser Ile Asn Asp Ala Met Thr Tyr
 325 330 335
 Gly Leu Pro Val Val Cys Ser Val Cys Asp Ser Thr Glu Arg Asp Leu
 340 345 350
 Val Thr Asp Gly Val Asn Gly Leu Phe Phe Lys Glu Gly Asn Ala Asp
 355 360 365
 Ser Leu Ser Asp Lys Leu Asn Lys Leu Phe Ala Ser Pro Glu Arg Cys
 370 375 380
 Ala Ser Met Gly Arg Glu Ser Glu Arg Ile Ile Arg Glu Lys Ile Asn
 385 390 395 400
 Ile Glu Thr Val Ser Glu Arg Tyr Leu Gln Ala Phe Arg Thr Phe Met
 405 410 415
 Gln

<210> 8015

<211> 174

<212> PRT

<213> B.fragilis

<400> 8015

Thr Lys Arg Ile Met Ala Lys Glu Ser Val Lys Ile Leu Gln Gly Lys
 1 5 10 15
 Leu Asp Val Lys Ser Leu Ile Asp Gln Leu Asn Ala Ala Leu Ser Glu
 20 25 30
 Glu Trp Leu Ala Tyr Tyr Gln Tyr Trp Val Gly Ala Leu Val Val Glu
 35 40 45
 Gly Ala Met Arg Ala Asp Val Gln Gly Glu Phe Glu Glu His Ala Glu
 50 55 60
 Glu Glu Arg His His Ala Gln Leu Ile Ala Asp Arg Ile Ile Glu Leu
 65 70 75 80
 Glu Gly Val Pro Val Leu Asp Pro Lys Lys Trp Phe Glu Leu Ala Arg
 85 90 95
 Cys Lys Tyr Asp Ser Pro Thr Ala Phe Asp Ser Val Ser Leu Leu Asn
 100 105 110
 Gln Asn Val Ser Ser Glu Arg Cys Ala Ile Leu Arg Tyr Gln Glu Ile
 115 120 125
 Ala Asn Phe Thr Asn Gly Lys Asp Tyr Thr Thr Cys Asp Ile Ala Lys
 130 135 140
 His Ile Leu Ala Glu Glu Glu His Glu Gln Asp Leu Gln Asp Tyr
 145 150 155 160
 Leu Thr Asp Ile Ala Arg Met Lys Glu Ser Phe Leu Lys Lys
 165 170

<210> 8016

<211> 203
 <212> PRT
 <213> B.fragilis

<400> 8016

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Ile Ile Thr Phe Tyr Arg Glu Asn Thr Phe Asn Ile Met Asp Thr Ser
1           5           10           15
Lys Ile Val Gly Glu Lys Ile Lys Ser Leu Arg Glu Asn Lys Gly Ile
          20           25           30
Ser Ile Glu Glu Leu Ala Glu Arg Ser Gly Leu Ala Ile Glu Gln Ile
          35           40           45
Glu Arg Ile Glu Asn Asn Ile Asp Leu Pro Ser Leu Ala Pro Leu Ile
          50           55           60
Lys Ile Ala Arg Val Leu Gly Val Arg Leu Gly Thr Phe Leu Asp Asp
65          70          75          80
Gln Asp Glu Thr Gly Pro Val Val Ser Arg Lys Met Glu Ala Thr Asp
          85          90          95
Thr Ile Ser Phe Ser Asn Asn Ala Ile His Ser Arg Lys His Met Gln
          100         105         110
Tyr His Ser Leu Ser Lys Ser Lys Ala Asp Arg His Met Glu Pro Phe
          115         120         125
Ile Ile Asp Val Ala Pro Thr Gln Asp Ser Asp Phe Val Leu Ser Ser
          130         135         140
His Glu Gly Glu Glu Phe Ile Met Val Met Glu Gly Val Met Glu Ile
145          150          155          160
Ser Tyr Gly Lys Ser Thr Tyr Leu Leu Glu Glu Gly Asp Ser Ile Tyr
          165          170          175
Tyr Asp Ser Ile Val Pro His His Val His Ala Tyr Glu Gly Gln Ala
          180          185          190
Ala Lys Ile Leu Ala Val Ile Tyr Thr Pro Ile
          195          200

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<210> 8017
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 8017

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Cys Phe Leu Met Asn Tyr Ala Ser Ile Leu Val Lys Lys Leu Thr Leu
1           5           10           15
Ser Arg Met Ser Gln Asn Leu Tyr Val Arg Leu Gly Phe Leu Gly Asn
          20           25           30
Gln Pro Phe Phe Thr Leu Ser Ser Cys Ser Lys Thr Ser Leu Met Val
          35           40           45
Gln Lys Glu Glu Lys Ala Asn Thr Pro Asn Lys Asp Glu Thr Ser Ile
          50           55           60
Leu Ser Val Leu Asn Glu Ala Ala Thr Pro Ala Ile Pro Asn Ile Arg
65          70          75          80
Lys Ile His Gln His Phe Val Pro Gln
          85

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<210> 8018
 <211> 338
 <212> PRT
 <213> B.fragilis

<400> 8018

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Lys Pro Met Ile Val Met Asn Asn Phe Leu Val Phe Asp Thr Ile Lys
1           5           10           15

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Ile Val Thr Cys Gly Thr Tyr Leu Lys Ile Ser Asp Lys Ser Val Phe
 20 25 30
 Thr Thr Asp Val Asp Leu Leu Asp Gly Arg Thr Ile Lys Ser Val Thr
 35 40 45
 Phe Asn Ser Gln Arg Asn Arg Ser Ile Val Pro Phe Glu Leu Tyr Ile
 50 55 60
 His Ala Asn Leu Leu Ser Asn Lys Met Cys Ile Glu Phe Ser Ser Lys
 65 70 75 80
 Ile Leu Trp Glu Asp Tyr Pro Lys Leu Ile Ser Ser Glu Thr Phe Ala
 85 90 95
 Gln Cys Leu Arg Asn Ile Glu Lys Thr Gly Ile Cys Thr Leu Asp Ile
 100 105 110
 Asp Arg Ile Met Glu Asp Cys Tyr Val Thr Lys Leu His Val Thr Lys
 115 120 125
 Asp Ile Glu Leu Glu Leu Thr Pro Ala Ile Leu Asn Cys Leu Asn Leu
 130 135 140
 Cys Thr Gly Asn Phe Arg Arg Tyr Asn Trp Glu Arg Tyr Lys Thr Ala
 145 150 155 160
 Ile Leu Phe Ser Lys Asn Val Lys Ser Ser Asn Ser Lys Glu Ala Ile
 165 170 175
 Ser Ile Tyr Asp Lys Gly Ile Glu Ile Val Gln Thr Lys Asn Lys Gly
 180 185 190
 Phe Leu Gly Leu Val Glu Asn Ala Asp Lys Ile Val Glu Tyr Phe Ala
 195 200 205
 Gly Lys Thr Arg Phe Glu Val Lys Tyr Glu Asn Met Ser Lys Ile Lys
 210 215 220
 Lys Glu Leu Gly Ile Lys Asp Thr Ser Leu Lys Ser Val Phe Gly Val
 225 230 235 240
 Lys Lys Asn Ile Val Leu Thr Gln Phe Asp Lys Ile Phe Thr Glu Arg
 245 250 255
 Thr Ile Ser Thr Asp Val Arg Ile Glu Thr Phe Ser Glu Tyr Gly Ile
 260 265 270
 Trp Asn Ile Val Cys Asn His Asn Gly Asp Leu Lys Ala Ile Glu Gln
 275 280 285
 Glu Ile Lys Asp Leu Gly Ile Tyr Ala Lys Gly Ser Arg Ala Val Leu
 290 295 300
 Gly Arg Thr Met Lys Lys Ile Lys Glu Ile Ala Gln Ile Trp Gly Asn
 305 310 315 320
 Arg Glu Met Lys Thr Asp Val Val Leu Glu Lys Ile Arg Leu Leu Leu
 325 330 335
 Arg Gly

<210> 8019

<211> 560

<212> PRT

<213> B.fragilis

<400> 8019

Ser Ala Met Ile Ala Leu His Ile Thr Lys Asn Met Gln Leu Tyr Glu
 1 5 10 15
 Arg Thr Leu Gly Gln Trp Leu Glu His Trp Ala Glu Thr Thr Pro Asp
 20 25 30
 Lys Glu Tyr Ile Val Tyr Ser Asp Arg Asn Leu Arg Phe Thr Trp Lys
 35 40 45
 Gln Phe Asn Lys Arg Val Asp Asp Met Ala Lys Gly Leu Ile Ala Ile
 50 55 60
 Gly Val Glu Arg Gly Thr His Val Gly Ile Trp Ala Ala Asn Val Pro
 65 70 75 80

Asp Trp Leu Thr Leu Leu Tyr Ala Cys Ala Lys Ile Gly Ala Val Tyr
 85 90 95
 Val Thr Val Asn Thr Asn Tyr Lys Gln Ala Glu Leu Glu Tyr Leu Cys
 100 105 110
 Glu Asn Ser Asp Met His Thr Leu Cys Ile Val Asn Gly Glu Lys Asp
 115 120 125
 Ser Asp Phe Val Gln Met Thr Tyr Thr Met Leu Pro Glu Leu Lys Thr
 130 135 140
 Cys Glu Arg Gly His Leu Lys Ser Glu Arg Phe Pro Tyr Met Lys Asn
 145 150 155 160
 Val Ile Tyr Val Gly Gln Glu Lys His Arg Gly Met Tyr Asn Thr Gln
 165 170 175
 Glu Ile Leu Leu Leu Gly Asp Asn Ile Glu Asp Thr Glu Leu Asn Glu
 180 185 190
 Leu Lys Ser Gln Val Asp Cys His Asp Val Val Asn Met Gln Tyr Thr
 195 200 205
 Ser Gly Thr Thr Gly Phe Pro Lys Gly Val Met Leu Thr His Tyr Asn
 210 215 220
 Ile Ser Asn Asn Gly Phe Leu Thr Gly Glu His Met Lys Phe Thr Gly
 225 230 235 240
 Asn Asp Lys Leu Cys Cys Cys Val Pro Leu Phe His Cys Phe Gly Val
 245 250 255
 Val Leu Ala Thr Met Asn Cys Leu Thr His Gly Cys Thr Gln Val Met
 260 265 270
 Val Glu Arg Phe Asp Pro Leu Ile Val Leu Ala Ser Ile His Lys Glu
 275 280 285
 Lys Cys Thr Ala Leu Tyr Gly Val Pro Thr Met Phe Ile Ala Glu Leu
 290 295 300
 Asn His Pro Met Phe Asp Met Phe Asp Met Ser Ser Leu Arg Thr Gly
 305 310 315 320
 Ile Met Ala Gly Ser Leu Cys Pro Val Glu Leu Met Lys Gln Val Glu
 325 330 335
 Glu Lys Met Tyr Met Lys Val Thr Ser Val Tyr Gly Leu Thr Glu Ala
 340 345 350
 Ala Pro Gly Met Thr Ala Thr Arg Ile Asp Asp Pro Phe Asp Val Arg
 355 360 365
 Cys Asn Thr Val Gly Arg Asp Phe Glu Phe Thr Glu Val Lys Val Leu
 370 375 380
 Asn Pro Glu Thr Gly Glu Glu Cys Pro Val Gly Val Gln Gly Glu Met
 385 390 395 400
 Cys Asn Arg Gly Tyr Asn Thr Met Lys Gly Tyr Tyr Lys Asn Pro Gln
 405 410 415
 Ala Thr Ala Glu Val Ile Asp Lys Asn Asn Phe Leu His Ser Gly Asp
 420 425 430
 Leu Gly Ile Lys Asp Glu Asp Gly Asn Tyr Arg Ile Thr Gly Arg Ile
 435 440 445
 Lys Asp Met Ile Ile Arg Gly Gly Glu Asn Ile Tyr Pro Arg Glu Ile
 450 455 460
 Glu Glu Phe Leu Tyr Lys Leu Asp Gly Val Lys Asp Val Gln Val Ser
 465 470 475 480
 Gly Ile Pro Ser Lys Lys Tyr Gly Glu Ala Val Gly Ala Phe Ile Ile
 485 490 495
 Leu His Glu Gly Val Thr Met Gln Ala Ser Asp Val Gln Asp Phe Cys
 500 505 510
 Arg Asn Lys Ile Ser Arg Tyr Lys Ile Pro Lys Tyr Ile Phe Phe Ile
 515 520 525
 Asp Glu Phe Pro Met Thr Gly Ser Gly Lys Ile Gln Lys Phe Lys Leu
 530 535 540
 Lys Asp Leu Gly Leu Lys Leu Cys Glu Glu Gln Gly Ile Gln Ile Ile

545

550

555

560

<210> 8020

<211> 83

<212> PRT

<213> B.fragilis

<400> 8020

Lys Gln Lys Ile Ser Pro Asp Ile Val Ile Ser Ser Lys Ser Ser Ala
 1 5 10 15
 Cys Val Ser Asn His Leu Leu Arg Thr Lys Phe Lys Ser Arg Phe Leu
 20 25 30
 Ser Met Glu Glu Thr Ala Phe Ile Phe Tyr Leu Ser Pro Leu Leu Gly
 35 40 45
 Tyr Lys Ile Ser Leu Ile Leu Gln Gln Asn Glu Leu Asn Tyr Asn Leu
 50 55 60
 Leu Pro Gly Lys Tyr Ile Gln His Tyr Gly Tyr Lys Gln Asn Arg Arg
 65 70 75 80
 Arg Lys Asn

<210> 8021

<211> 348

<212> PRT

<213> B.fragilis

<400> 8021

Asp Met Lys Ile Ser Val Leu Leu Ala Ala Leu Leu Leu Leu Phe Ser
 1 5 10 15
 Cys Thr Asp Lys Asp Ser Lys Gln Ser Gln Asp Leu Ile Val Lys Thr
 20 25 30
 Ala Gln Ala Val Ser Ala Ser Gly Ile Lys Thr Thr Glu Phe Pro Phe
 35 40 45
 Ile Ala Gln Pro Phe Arg Thr Ser Glu Leu Ser Phe Arg Val Gly Gly
 50 55 60
 Pro Ile Asp Arg Leu Asp Val Tyr Ala Gly Asn His Tyr Lys Gln Gly
 65 70 75 80
 Ser Ile Ile Ala Glu Ile Asp Pro Arg Asp Phe His Ile Arg Lys Glu
 85 90 95
 Arg Ala Glu Ala Ile Tyr His Gln Ala Lys Ala Glu Phe Glu Arg Ile
 100 105 110
 Glu Lys Leu Tyr Glu Lys Asn Asn Val Ser Ala Ser Thr Tyr Glu Lys
 115 120 125
 Thr Lys Ala Asp Tyr Thr Thr Ala Lys Thr Ala Phe Asp Thr Ala Ser
 130 135 140
 Asn Glu Leu Gly Asp Thr Arg Leu Thr Ala Pro Phe Asp Gly Tyr Val
 145 150 155 160
 Gly Glu Val Tyr Ile Glu Lys Tyr Gln Asp Val Lys Pro Ala Gln Pro
 165 170 175
 Val Ile Ser Phe Ile Asp Ile Asn Arg Leu Lys Ile Glu Ile Tyr Val
 180 185 190
 Thr Gln Asn Ile Ala Phe Ala Ser His Pro Thr Asp Ser Val Arg Ile
 195 200 205
 Tyr Phe Asp Ala Gln Pro Asp Lys Tyr Tyr Lys Ala Gln Ile Val Glu
 210 215 220
 Val Ser Lys Gly Thr Thr Arg Asn Asn Leu Ser Tyr Leu Leu Thr Ala
 225 230 235 240
 Val Leu Pro Asn Lys Glu Gly Lys Leu Leu Ala Gly Met Ser Gly Lys
 245 250 255

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0

Ala Ile Phe Asp Ala Pro Gly Thr Thr Asp Leu Thr Gly Val Ser Ile
 260 265 270
 Pro Gln Thr Ala Leu Cys Tyr Arg Pro Ser Glu Gly Glu Tyr Val Trp
 275 280 285
 Val Ile Asp Thr Asn Thr Arg Gln Val Asn Arg Arg Thr Val Lys Lys
 290 295 300
 Gly Asn Leu Leu Pro Gly Gly Tyr Val Thr Ile Thr Glu Gly Leu Arg
 305 310 315 320
 Ala Ser Glu Thr Val Ala Thr Ser Gly Leu Arg Phe Leu Ser Asp Gly
 325 330 335
 Met Lys Val Glu Ile Ser Thr Lys Thr Asn Ser Leu
 340 345

<210> 8022
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8022
 Pro Tyr Arg Met Val Pro Ala Asp Ser Arg Arg Ile Pro Arg Ala Pro
 1 5 10 15
 Arg Tyr Ser Gly Tyr His Tyr Ala Ser Val Thr Leu Glu Tyr Arg Ala
 20 25 30
 Ile Thr Val Tyr Gly Thr Thr Phe Gln Ser Phe Leu Leu Asn Asn Cys
 35 40 45
 Leu Ala Arg Ala Trp Ser Tyr Asn Pro Thr His Ala Val Thr Trp Val
 50 55 60
 Val Trp Ala Asn Pro Arg Ser Leu Ala Thr Thr Arg Gly Ile Ile Ile
 65 70 75 80
 Tyr Phe Leu Phe Leu Gln Val Leu Arg Cys Phe Ser Ser Leu Arg
 85 90 95

<210> 8023
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 8023
 Asp Lys Asn Leu Gln Gly Phe Phe Phe Leu Gly Ala Gln Ala Gly Ala
 1 5 10 15
 His Ser Asp Ile Leu Ala Leu Leu Pro His Ile Gln His Phe Ile Tyr
 20 25 30
 Arg Phe Cys Tyr Tyr Phe Cys Arg Arg Asn Lys Leu Tyr Gln Tyr Ala
 35 40 45
 Pro Thr Gln Met Tyr Ile Ser Cys Val Leu Gly Ser Asp Gly Ala Thr
 50 55 60
 Thr Thr Gln Gln Arg Glu Gly Ala Ile Ala Leu Leu Tyr Ser Thr Pro
 65 70 75 80
 Thr Leu Ile Glu Gln Gln Ala Cys His Lys Ile Ala Ile Phe Phe Thr
 85 90 95

<210> 8024
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 8024
 Gln Asp Cys Val Met Arg Ile Gln Ile Ile Asn Gly Pro Asn Ile Asn
 1 5 10 15

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Leu Leu Gly Lys Arg Glu Pro Ser Ile Tyr Gly Ser Val Thr Phe Glu
      20                25                30
Glu Tyr Leu Ala Glu Leu Arg Lys Lys Tyr Pro Asp Val Glu Leu Gly
      35                40                45
Tyr Phe Gln Ser Asn Val Glu Gly Glu Ile Ile Asp Ile Ile Gln Gln
      50                55                60
Thr Gly Phe Asp Val Asp Gly Ile Ile Leu Asn Ala Gly Ala Tyr Thr
      65                70                75                80
His Thr Ser Ile Ala Leu Gln Asp Ala Ile Arg Ser Val Thr Ser Pro
      85                90                95
Val Ile Glu Val His Ile Ser Asn Val His Ala Arg Glu Gln Phe Arg
      100               105               110
His Val Ser Met Ile Ala Cys Ala Cys Lys Gly Val Ile Cys Gly Phe
      115               120               125
Gly Leu Asn Ser Tyr Arg Leu Ala Leu Glu Ala Leu Leu Asp Lys
      130               135               140

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<210> 8025

<211> 117

<212> PRT

<213> B.fragilis

<400> 8025

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Asn Asn Tyr Val Glu Lys Phe Met Glu Thr Thr Arg Gln Asn Lys Ile
1      5      10      15
Ser Arg Leu Leu Gln Lys Glu Leu Ser Glu Ile Phe Leu Leu Gln Thr
      20      25      30
Lys Ala Met Pro Gly Val Leu Val Ser Val Ser Ala Val Arg Ile Ser
      35      40      45
Pro Asp Met Ser Ile Ala Arg Val Tyr Leu Ser Ile Phe Pro Ser Glu
      50      55      60
Lys Ser Glu Glu Met Val Lys Asn Ile Asn Asn Asn Met Lys Ser Ile
      65      70      75      80
Arg Phe Glu Leu Gly Thr Arg Val Arg His Gln Leu Arg Ile Ile Pro
      85      90      95
Glu Leu Lys Phe Phe Val Asp Asp Ser Leu Asp Tyr Ile Glu Lys Ile
      100     105     110
Asp Ala Leu Leu Lys
      115

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<210> 8026

<211> 587

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (498)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8026

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Gln Ile Phe Phe Ile Ser Met Arg Leu His Val Leu Ser Leu Thr Cys
1      5      10      15
Leu Leu Leu Thr Val Gly Gly Thr Gly Pro Val Ala Ala Gln Lys Pro
      20      25      30
Gln Asn Tyr Pro Tyr Gly Val Pro Ser Glu Pro Trp Glu Glu Ser Phe
      35      40      45
Gly Asn His Arg Ala Val Leu Gln Ile Glu Lys Pro Ala Gln Ile Ala
      50      55      60

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Asn Leu Asp Phe Gln Trp Arg Arg Pro Asp Lys Asp Ala Gly His Arg
 65 70 75 80
 Arg Phe Leu Ile Ile His Ala Ala Thr Gly Asp Thr Ile Arg Asn Ile
 85 90 95
 Arg Arg Ile Glu Val Asn Asp Glu His Cys Arg Leu Gln Phe Gly Pro
 100 105 110
 Val Glu Gln Lys Gly Thr Tyr Tyr Phe Tyr Tyr Leu Pro Tyr Gln Val
 115 120 125
 Gln Lys Gly Tyr Gly Phe Tyr Ser Gly Gly Tyr Leu Pro Lys Glu Asn
 130 135 140
 Glu Pro Asp Ala Ala Trp Gln Ala Gln Gly Gly Ser Thr Leu Lys Ser
 145 150 155 160
 Thr Arg Ala Lys Val Val Arg Val Glu Ser Arg Gln Ala Phe Asp Ser
 165 170 175
 Phe Tyr Pro Met Glu Val Ala Ala Thr Ala Arg Glu Lys Glu Asn Tyr
 180 185 190
 Ile Asn Arg His Lys Ala Ser Leu Tyr Leu Phe Ala Glu Asp Arg Arg
 195 200 205
 Phe Pro Ile Arg Met Arg Ser Asn Leu Pro Thr Lys Trp Leu Ala Asp
 210 215 220
 Lys Gln Gly Lys Leu Phe Arg Gly Glu Ala Ala Pro Asn Glu Tyr Tyr
 225 230 235 240
 Thr Phe Gln Ile Gly Leu Trp Ala Ala Val Asn Gln Ala Asp Lys Ile
 245 250 255
 Ala Tyr Arg Ala Ser Ser Leu Lys Cys Gly Arg Glu Ile Ile Pro Ala
 260 265 270
 Thr Ala Ile Thr Cys Phe Asn Val Glu Gly Thr Asp Pro Tyr Gly Lys
 275 280 285
 Ala Phe Lys Lys Glu Val Asn Val Pro Lys Gly Glu Val Gln Ala Leu
 290 295 300
 Trp Phe Gly Ile Asp Ile Pro Asp Gly Gln Lys Glu Gly Ile Tyr Thr
 305 310 315 320
 Gly Thr Ile Thr Leu Ser Asp Ala Asp Gly Ala Gln Ser Ser Ile Pro
 325 330 335
 Leu Ser Ile Arg Ile Ala Gly Lys Ala Leu Pro Asp Arg Gly Asp Ser
 340 345 350
 Glu Leu Trp Arg Cys Ser Arg Leu Arg Trp Leu Asn Ser Thr Leu Gly
 355 360 365
 Ile Ala Asp Thr Pro Thr Ala Pro Tyr Thr Ala Met Thr Val Asn Glu
 370 375 380
 Asn Arg Ile Gly Cys Leu Gly Arg Ser Ile Thr Ile Asp Glu Gly Thr
 385 390 395 400
 Gly Leu Pro Ala Gln Ile Arg Ser Trp Asn Asn Asp Val Leu Ser Ser
 405 410 415
 Pro Ile Glu Phe Val Ile Gln Thr Ala Gly Gly Val Lys Ser Leu Lys
 420 425 430
 Ala Val Pro Glu Leu Thr Glu Arg Thr Glu Gly His Val Ala Gly Asn
 435 440 445
 Trp Lys Ala Glu Asp Glu Asp Met Thr Val Ser Cys Lys Ala Ile Met
 450 455 460
 Glu Phe Asp Gly Trp Ile Asn Tyr Ile Tyr Thr Ile Thr Pro Lys Lys
 465 470 475 480
 Gln Ile Gln Val Lys Asp Val Arg Leu Val Leu Pro Val Arg Asn Glu
 485 490 495
 Ile Xaa Thr Tyr Phe Leu Gly Met Gly Leu Pro Gly Gln Pro Thr Pro
 500 505 510
 Gln Gln Tyr Asp Arg Lys Trp Asp Ala Pro Glu Lys Thr Val Asn Thr
 515 520 525
 Phe Gly Val Ser Ile Pro Asn Phe Gln Arg Thr Thr Met Gly Cys Gly

530 535 540
 Pro Ser Thr Ile Phe Trp Ile Gly Asn Gln His Ala Gly Ile His Trp
 545 550 555 560
 Gln Ile Arg Gly Ser Thr Tyr Ser Arg Ser Ala Ile Glu Ser Ala Pro
 565 570 575
 Ser Gly Leu Ser Gly Lys Leu Val Gln Arg Gly
 580 585

<210> 8027

<211> 458

<212> PRT

<213> B.fragilis

<400> 8027

Ile Thr Lys Val Arg Val Tyr Ser Gly Leu Tyr Glu Arg Arg Pro Asp
 1 5 10 15
 Thr Pro Phe Ile Phe Thr Asn Gly Gln Glu Arg Lys Tyr Asn Met Ala
 20 25 30
 Glu Gln Ser Leu Lys Glu Lys Thr Ala Lys Gly Leu Phe Trp Gly Gly
 35 40 45
 Phe Ser Asn Gly Ile Gln Gln Leu Leu Asn Leu Leu Phe Gly Ile Ile
 50 55 60
 Ile Thr Arg Met Leu Asp Ser Thr Asp Tyr Gly Met Ile Gly Met Leu
 65 70 75 80
 Ala Ile Phe Thr Ala Val Ala Asn Ser Ile Gln Glu Ser Gly Phe Thr
 85 90 95
 Ala Ala Leu Ala Asn Lys Gln Thr Phe Arg His Glu Asp Tyr Asn Ala
 100 105 110
 Val Phe Trp Phe Ser Phe Leu Met Gly Ala Ser Leu Tyr Leu Leu Leu
 115 120 125
 Phe Phe Cys Ala Pro Phe Ile Ala Ala Phe Tyr Lys Thr Pro Gln Leu
 130 135 140
 Ile Pro Leu Ser Arg Phe Leu Phe Leu Gly Phe Leu Ile Ser Ser Cys
 145 150 155 160
 Gly Thr Ala His Asn Ala Val Leu Phe Lys Lys Leu Met Val Lys Glu
 165 170 175
 Lys Ala Lys Ala Thr Ile Thr Ala Leu Leu Cys Ser Gly Thr Ile Gly
 180 185 190
 Ile Val Met Ala Tyr Asn Gly Met Ala Phe Trp Gly Leu Ala Val Gln
 195 200 205
 Gln Ile Thr Tyr Ile Phe Ile Ala Asn Ala Leu Leu Trp Tyr Phe Ser
 210 215 220
 Pro Trp Arg Pro Thr Phe Ser Phe Asn Phe Lys Pro Ile Arg Glu Met
 225 230 235 240
 Leu Pro Phe Ser Ser Lys Leu Leu Ile Thr Asn Val Phe His Tyr Ile
 245 250 255
 Asn Asp Asn Ile Phe Ser Val Leu Leu Gly Arg Phe Tyr Thr Ser Gln
 260 265 270
 Asp Val Gly Tyr Tyr Thr Gln Ala Asn Lys Trp Thr Asn Met Gly Phe
 275 280 285
 Ser Leu Ile Ser Asn Met Ile Asn Gly Val Ser Gln Pro Val Leu Val
 290 295 300
 Glu Thr Ser Ser Asp Ala Met Arg Gln Lys Asn Ile Phe Arg Lys Met
 305 310 315 320
 Leu Arg Phe Thr Ala Phe Ile Ser Phe Pro Ala Met Phe Gly Leu Ala
 325 330 335
 Leu Ile Ala Asn Glu Phe Ile Val Ile Ala Val Thr Ala Lys Trp Gln
 340 345 350
 Ala Cys Val Pro Ile Met Gln Ile Leu Cys Ile Trp Gly Ala Phe Val

355 360 365
 Pro Ile Thr Tyr Met Tyr Ser Asn Leu Leu Ile Ser Lys Gly Lys Ser
 370 375 380
 Asn Leu Phe Met Trp Asn Thr Ile Ala Gln Ser Leu Val Gln Leu Thr
 385 390 395 400
 Met Leu Leu Cys Thr Ile Ser Gln Gly Ile Leu Val Met Ala Val Ile
 405 410 415
 Tyr Thr Val Ile Asn Ile Gly Trp Leu Leu Ile Trp His Tyr Phe Val
 420 425 430
 Asn Lys Gln Ile His Ile Thr Leu Trp Glu Val Met Lys Asp Ile Thr
 435 440 445
 Pro Tyr Leu Leu Ile Ser Gly Gly Val Ile
 450 455

<210> 8028
 <211> 439
 <212> PRT
 <213> B.fragilis

<400> 8028
 Leu Cys Thr Val Ser His Arg Lys Pro Leu Phe Leu Pro Lys His Phe
 1 5 10 15
 Asp Arg Met Arg Val Leu Ile Ile Asn Thr Ser Glu Arg Leu Gly Gly
 20 25 30
 Ala Ala Val Ala Ala Ser Arg Leu Met Glu Ser Leu Lys Asn Asn Gly
 35 40 45
 Ile Lys Ala Lys Met Leu Val Arg Asp Lys Gln Thr Asp Gln Ile Ser
 50 55 60
 Val Val Gly Leu Gln Arg Asn Trp Trp Gln Val Trp Arg Phe Val Trp
 65 70 75 80
 Glu Arg Ile Val Ile Trp Lys Ala Asn Arg Phe Lys Lys Asn Asn Leu
 85 90 95
 Phe Ala Val Asp Ile Ala Asn Thr Gly Thr Asp Ile Thr Ser Leu Pro
 100 105 110
 Glu Phe Gln Gln Ala Asp Val Ile His Leu His Trp Val Asn Gln Gly
 115 120 125
 Met Leu Ser Leu Asn Asp Ile Arg Lys Ile Leu Lys Ser Gly Lys Pro
 130 135 140
 Val Val Trp Thr Met His Asp Met Trp Pro Cys Thr Gly Ile Cys His
 145 150 155 160
 His Ala Arg Glu Cys Thr Asn Tyr His Gln Glu Cys Asn His Cys Pro
 165 170 175
 Tyr Leu Tyr Gly Gly Gly Ser Lys Lys Asp Leu Ser Asn Arg Ile Phe
 180 185 190
 Arg Lys Lys Gln Gln Leu Tyr Lys Glu Ala Pro Ile Thr Phe Ile Thr
 195 200 205
 Cys Ser Gln Trp Leu Lys Gly Gln Ala Glu Lys Ser Ala Leu Leu Thr
 210 215 220
 Gly Glu Thr Val Ile Ser Ile Pro Asn Pro Ile Asn Thr Asn Leu Phe
 225 230 235 240
 Lys Pro Arg Asn Lys Lys Glu Ala Arg Ser Lys Cys His Leu Pro Gln
 245 250 255
 Asn Gly Lys Leu Ile Leu Phe Gly Ser Ala Lys Ile Thr Asp Lys Arg
 260 265 270
 Lys Gly Ile Asp Tyr Leu Ile Glu Ser Cys Lys Leu Leu Ala Ala Lys
 275 280 285
 His Pro Glu Leu Lys Asp Ser Leu Ser Val Val Val Phe Gly Lys Gln
 290 295 300
 Ser Glu Gln Leu Lys Pro Leu Leu Pro Phe Lys Val Tyr Pro Leu Asn

305 310 315 320
 Tyr Val Ser Asn Glu His Glu Leu Val Asp Val Tyr Asn Ala Val Asp
 325 330 335
 Leu Phe Val Thr Pro Ser Leu Glu Glu Asn Leu Pro Asn Thr Ile Met
 340 345 350
 Glu Ala Met Ala Cys Gly Val Pro Cys Ile Gly Phe Asn Val Gly Gly
 355 360 365
 Ile Pro Glu Met Ile Asp His Leu His Asn Gly Tyr Val Ala Gln Tyr
 370 375 380
 Lys Ser Ser Glu Asp Phe Ala Asn Gly Ile Tyr Trp Ala Leu Thr Asp
 385 390 395 400
 Pro Asp Tyr Pro Ser Leu Ser Glu Gln Ala Asn Arg Lys Val Ile Ala
 405 410 415
 Asn Tyr Ser Glu Gly Ile Ile Ala Lys Arg Tyr Ile Asp Val Tyr Asn
 420 425 430
 Lys Ile Thr Gly Arg Tyr Ala
 435

<210> 8029

<211> 220

<212> PRT

<213> B.fragilis

<400> 8029

Gln Pro Leu Phe Ile Arg Asp Glu Met Lys Glu Thr Asp Leu Leu Asp
 1 5 10 15
 Glu Tyr Ile Leu Gln His Ile Asp Glu Glu Gly Glu Tyr Leu Lys Ser
 20 25 30
 Leu Tyr Arg Asp Thr His Val Lys Leu Leu Arg Pro Arg Met Ala Ser
 35 40 45
 Gly His Leu Gln Gly Arg Met Leu Lys Met Phe Val Arg Met Ile Arg
 50 55 60
 Pro Arg Gln Ile Leu Glu Ile Gly Thr Tyr Ser Gly Tyr Ser Ala Leu
 65 70 75 80
 Cys Leu Ala Glu Gly Leu Glu Glu Gly Gly Met Leu His Thr Phe Glu
 85 90 95
 Ile Asn Asp Glu Gln Glu Asp Phe Thr Arg Pro Trp Leu Glu Asn Ser
 100 105 110
 Ala Tyr Ala Asp Lys Ile Lys Phe Tyr Ile Gly Asp Ala Leu Arg Leu
 115 120 125
 Ile Pro Ala Leu Gly Ile Thr Phe Asp Leu Ala Phe Val Asp Gly Asp
 130 135 140
 Lys Arg Lys Tyr Ile Glu Tyr Tyr Glu Met Thr Leu Ala His Leu Ser
 145 150 155 160
 Val Gly Gly Tyr Ile Ile Ala Asp Asn Thr Leu Trp Asp Gly His Val
 165 170 175
 Leu Glu Glu Pro His Ser Asn Asp His Gln Thr Ile Gly Ile Lys Ala
 180 185 190
 Phe Asn Glu Leu Val Ala His Asp Glu Arg Val Glu Lys Val Ile Leu
 195 200 205
 Pro Leu Arg Asp Gly Leu Thr Ile Ile Arg Lys Lys
 210 215 220

<210> 8030

<211> 83

<212> PRT

<213> B.fragilis

<400> 8030

Gln Val Leu Leu Asp Ile Pro Val Ser Tyr Leu Phe Ile Ile Lys Ser
 1 5 10 15
 Asp Arg Phe Met Trp Trp Asn Tyr Met Lys Val Leu Met Phe Asn Thr
 20 25 30
 Leu Asn Pro Asn Asn Leu Phe Arg Gln Arg Pro Ser Gly Phe Asn Leu
 35 40 45
 Pro Met Ile Ile Leu Tyr Ile Lys Leu Asp Ser Gln Asn Ala Lys Ile
 50 55 60
 Asp Gln Lys Thr Leu Ile Gly His Leu Pro Ser Phe His Tyr Asp Phe
 65 70 75 80
 Trp Arg Leu

<210> 8031
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 8031
 Cys Gln Val Phe Ile Asn Pro Met Gln Phe Gly Pro Ile Asn Asp Ala
 1 5 10 15
 Pro Tyr Leu Leu Thr Val Ser Arg Met Arg Ser Ser Asn Lys Ala Pro
 20 25 30
 Ser Cys Val Ser Ser Pro Asn Pro Ala Glu Arg Ile Met Lys Ala Arg
 35 40 45
 Val Cys Phe Ser Ala Ala Ser Val Ser Thr Thr Ser Gly Gln Arg Thr
 50 55 60
 Ala Gly Ile Ala Arg Ile Ala Arg Ser Val Ser Gly Asn Ser Phe Ala
 65 70 75 80
 Ser Ala Lys Glu Gly Thr Pro Cys Thr Ser Val Ser Leu Gly Leu Thr
 85 90 95
 Ala Arg Ser Ser Pro
 100

<210> 8032
 <211> 329
 <212> PRT
 <213> B.fragilis

<400> 8032
 Leu Gly Phe Leu Glu Arg Asn Ile Lys Asn Met Lys Ile Ser Asn Lys
 1 5 10 15
 Tyr Asp Arg Leu Val Arg Lys Leu Ile Ala Gly Glu Ser Ser Ser Glu
 20 25 30
 Glu Met Glu Glu Leu Ala His Trp Asn Val Val Glu Thr Lys Met Lys
 35 40 45
 Lys Gln Phe Asp Ala Ala Lys Asn Ile Val Glu Asn Gly Ala Ile Glu
 50 55 60
 Arg Arg Ile Trp Asp Lys Ile Asp Ser Arg Cys Gln Ala Pro Val Glu
 65 70 75 80
 Arg Ser Gln Lys Leu Gln Leu Arg Tyr Trp Arg Val Ala Leu Ala Ala
 85 90 95
 Cys Ile Thr Ala Leu Leu Ile Ile Gly Gly Gly Ile Phe Phe Phe Asp
 100 105 110
 Lys Gly His Thr Ala Ser Gln Arg Ile Thr Glu Tyr Thr Glu Val Val
 115 120 125
 Ser Ser Asn Ser Arg Leu Tyr Ile Leu Pro Asp Ser Ser Lys Val Trp
 130 135 140
 Ile Gln Ala Gly Ser Arg Leu Arg Phe Ser Gln Asp Phe Met Ser Asn

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145          150          155          160
Arg Glu Val Trp Leu Glu Gly Val Ser Thr Phe Glu Val Thr Lys Arg
          165          170          175
Lys Gly His Asn Phe Lys Val Tyr Ile Asp Gln Ala Phe Val Glu Val
          180          185          190
Lys Gly Thr Val Phe Arg Val Gln Ser Thr Cys Gln Asp Gly Ala Glu
          195          200          205
Val Thr Leu Phe Ser Gly Lys Val Asp Phe Asn Val Lys Ala Ser Gln
          210          215          220
Arg Lys Val Glu Met Lys Pro Leu Gln Gln Ile Val Phe His Pro Glu
          225          230          235          240
Lys Asp Glu Val Ile Leu Lys Asn Ile Gly Asn Ile Ser Trp Asp Glu
          245          250          255
Gly Arg Tyr Lys Phe Val Asp Met Arg Met Asp Asp Leu Ile Glu Ala
          260          265          270
Ile His Asp Ile Tyr His Ile Pro Val Glu Leu Asp Arg Lys Val Ala
          275          280          285
Arg Asn Asp Leu Phe Thr Gly Tyr Met Arg Tyr Asp Asp Pro Ala Ser
          290          295          300
Lys Val Ile Glu Lys Ile Cys Ile Asn Met Asn Leu Lys Phe Lys Lys
          305          310          315          320
Glu Thr Gln Lys Ile Ile Tyr Lys
          325

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<210> 8033
<211> 90
<212> PRT
<213> B.fragilis

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<400> 8033
Ile Phe Phe Ser Ser Leu Gln Val Gln Lys Gln Cys Phe Met Lys Ser
1          5          10          15
Glu Ile Asp Leu Phe Val Ile Asn Lys Ile Lys Glu Lys Arg Lys Glu
          20          25          30
Leu Lys Val Ser Gln Arg Gly Met Ala Glu Ile Leu Asp Cys Ser Ala
          35          40          45
Gly Phe Ile Gly Gln Val Glu Ser Glu Asn Ser Asp Thr Lys Tyr Ser
          50          55          60
Val Tyr Gln Leu Tyr Leu Ile Ala Lys Asp Phe Asn Cys Ser Pro Ala
          65          70          75          80
Asp Phe Phe Pro Pro Phe Asn Ile Lys Asp
          85          90

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<210> 8034
<211> 832
<212> PRT
<213> B.fragilis

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<400> 8034
Met Lys Lys Phe Leu Pro Asp Leu Ile Ala Ile Leu Ala Phe Ile Val
1          5          10          15
Ile Ser Phe Ile Tyr Phe Phe Pro Ala Ile Thr Glu Asp Arg Ile Leu
          20          25          30
Phe Gln His Asp Thr Val Ala Gly Ala Gly Ala Gly Gln Glu Ala Lys
          35          40          45
Glu Tyr Tyr Glu Arg Thr Gly Glu Arg Thr Arg Trp Thr Asn Ala Leu
          50          55          60
Phe Gly Gly Met Pro Thr Tyr Gln Met Ser Pro Ser Tyr Asp Ser Thr
          65          70          75          80

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Glu Pro Leu Thr Phe Val Gln Lys Val Tyr His Leu Phe Leu Pro Asn
 85 90 95
 Tyr Val Trp Leu Thr Phe Ile Met Met Leu Gly Phe Tyr Ile Leu Leu
 100 105 110
 Arg Ala Phe Gly Ile Pro Ala Trp Leu Ala Gly Leu Gly Gly Ile Ile
 115 120 125
 Trp Gly Phe Ser Ser Tyr Phe Phe Ile Leu Ile Ala Ala Gly His Ile
 130 135 140
 Trp Lys Phe Ile Thr Leu Ala Tyr Ile Pro Pro Thr Ile Ala Gly Ile
 145 150 155 160
 Val Leu Ala Tyr Arg Lys Lys Tyr Leu Leu Gly Gly Ile Ile Thr Ala
 165 170 175
 Leu Phe Met Ala Met Gln Ile Leu Ser Asn His Val Gln Met Thr Tyr
 180 185 190
 Tyr Phe Leu Phe Val Ile Leu Phe Met Val Gly Ala Phe Phe Glu Asp
 195 200 205
 Ala Trp Arg Lys Lys Glu Leu Pro Gln Phe Phe Lys Ala Thr Gly Val
 210 215 220
 Leu Ile Val Ala Gly Leu Ile Gly Val Ser Ile Asn Leu Ser Asn Leu
 225 230 235 240
 Tyr His Thr Tyr Glu Tyr Ser Lys Glu Thr Met Arg Gly Lys Ser Glu
 245 250 255
 Leu Lys Tyr Glu Gly Ala Ala Ala Lys Gln Thr Ser Ser Gly Leu Asn
 260 265 270
 Arg Asp Tyr Ile Thr Gln Trp Ser Tyr Gly Ile Gly Glu Thr Phe Ser
 275 280 285
 Leu Leu Val Pro Asn Val Lys Gly Gly Ala Ser Val Pro Leu Ser Arg
 290 295 300
 Ser Glu Lys Ala Met Glu Lys Ala Asn Pro Met Tyr Ser Ser Leu Tyr
 305 310 315 320
 Ser Gln Leu Thr Gln Tyr Phe Gly Asp Gln Pro Met Thr Ser Gly Pro
 325 330 335
 Val Tyr Val Gly Ala Phe Val Leu Met Leu Phe Ile Leu Gly Cys Phe
 340 345 350
 Ile Val Lys Gly Pro Met Lys Trp Ala Leu Leu Gly Ala Thr Ile Phe
 355 360 365
 Ser Ile Leu Leu Ser Trp Gly Lys Asn Phe Met Gly Leu Thr Asp Phe
 370 375 380
 Phe Ile Asp Tyr Ile Pro Met Tyr Asn Lys Phe Arg Ala Val Ser Ser
 385 390 395 400
 Ile Leu Val Ile Ala Glu Phe Thr Ile Pro Leu Leu Ala Ile Leu Thr
 405 410 415
 Leu Lys Glu Ile Leu Thr Lys Pro Glu Leu Leu Lys Glu Lys Leu Lys
 420 425 430
 Tyr Ile Tyr Ile Ser Phe Gly Leu Thr Gly Gly Leu Ala Leu Leu Phe
 435 440 445
 Ala Ile Ala Pro Arg Leu Phe Phe Pro Thr Tyr Ile Pro Asp Asn Glu
 450 455 460
 Met Ala Ala Leu Gln Asn Ala Leu Pro Ala Asp Gln Leu Ser Pro Ile
 465 470 475 480
 Ile Ala Asn Leu Glu Met Arg Val His Leu Phe Thr Ser Asp Ala
 485 490 495
 Trp Arg Ser Phe Ile Val Thr Ile Gly Thr Leu Leu Leu Leu Ala
 500 505 510
 Tyr Asn Ala Lys Lys Leu Lys Ala Thr Trp Thr Val Ala Ala Ile Ala
 515 520 525
 Leu Leu Cys Leu Gly Asp Met Trp Ser Val Asn Lys Arg Tyr Leu Tyr
 530 535 540
 Asp Glu Gln Phe Ile Pro Lys Ser Glu Gln Thr Ala Thr Phe Arg Lys

545 550 555 560
 Thr Gln Thr Asp Glu Leu Ile Leu Gln Asp Pro Ser Leu Asp Tyr Arg
 565 570 575
 Val Leu Asn Phe Ala Gly Asn Thr Phe Glu Glu Asn Asn Thr Ser Tyr
 580 585 590
 Trp His Lys Ser Val Gly Gly Tyr His Ala Ala Lys Leu Arg Arg Tyr
 595 600 605
 Gln Glu Met Ile Asp His His Ile Ala Lys Glu Met Gln Ala Ala Tyr
 610 615 620
 Gln Glu Val Ala Thr Ala Gly Gly Gln Met Asp Ser Val Asn Ala Ala
 625 630 635 640
 Lys Phe Pro Val Leu Asn Met Leu Asn Thr Lys Tyr Phe Ile Phe Pro
 645 650 655
 Ala Gly Gln Gln Gly Gln Thr Val Pro Ile Glu Asn Pro Tyr Thr Phe
 660 665 670
 Gly Asn Ala Trp Phe Ile Asp Lys Ile Gln Tyr Val Asn Asn Ala Asn
 675 680 685
 Glu Glu Ile Asp Ala Ile Gly Gln Val Asp Leu Gln Gln Thr Ala Ile
 690 695 700
 Val Asp Ser Lys Phe Lys Glu Ala Leu Lys Gly Val Asn Glu Gly Tyr
 705 710 715 720
 Lys Asp Ser Leu Ser Thr Ile Arg Leu Thr Ser Tyr Glu Pro Asn Gln
 725 730 735
 Leu Val Tyr Glu Thr Ser Ser Pro Gln Asp Gly Ile Val Val Phe Ser
 740 745 750
 Glu Ile Tyr Tyr Pro Gly Trp Thr Ala Thr Ile Asp Gly Lys Pro Ala
 755 760 765
 Asp Ile Ala Arg Ala Asp Tyr Ile Leu Arg Ala Met Asn Val Pro Ala
 770 775 780
 Gly Lys His Thr Ile Glu Met Arg Phe Asp Pro Gln Ser Leu His Ile
 785 790 795 800
 Thr Glu Gly Ile Ala Tyr Gly Ala Met Ala Leu Leu Leu Val Gly Val
 805 810 815
 Ile Ile Leu Ile Trp Ile Tyr Arg Lys Lys Tyr Ser Glu Asn Ser Lys
 820 825 830

<210> 8035

<211> 162

<212> PRT

<213> B.fragilis

<400> 8035

Gln Leu Glu Phe Thr Phe Ile Ile Met Glu Lys Ile Asp Asn Leu Asp
 1 5 10 15
 Arg Gln Ile Leu Glu Ile Ile Ser Gln Asn Ala Arg Ile Pro Phe Lys
 20 25 30
 Asp Val Ala Ala Glu Cys Gly Val Ser Arg Ala Ala Ile His Gln Arg
 35 40 45
 Val Gln Arg Leu Ile Asp Leu Gly Val Ile Val Gly Ser Gly Tyr His
 50 55 60
 Val Asn Pro Lys Ser Leu Gly Tyr Arg Thr Cys Thr Tyr Val Gly Ile
 65 70 75 80
 Lys Leu Glu Lys Gly Ser Met Tyr Lys Ala Val Val Ala Glu Leu Gln
 85 90 95
 Lys Ile Pro Glu Ile Val Glu Cys His Phe Thr Thr Gly Pro Tyr Thr
 100 105 110
 Met Leu Thr Lys Val Tyr Ala Arg Asp Asn Glu His Leu Met Asp Leu
 115 120 125
 Leu Asn Asn Lys Met Gln Glu Ile Pro Gly Val Thr Ala Thr Glu Thr

130 135 140
 Leu Ile Ser Leu Glu Gln Ser Ile Lys Lys Glu Ile Pro Ile His Ala
 145 150 155 160
 Asp Lys

<210> 8036
 <211> 417
 <212> PRT
 <213> B.fragilis

<400> 8036
 Asn Ile Asn Ser Lys Tyr Met Lys Gln Leu Ile Leu Ser Cys Ile Phe
 1 5 10 15
 Val Leu Gly Phe Phe Phe Leu Pro Ile Leu Val Ser Gly Ala Asp Ala
 20 25 30
 Gln Glu Asn Tyr Leu Phe Ser Ile Ser Gly Glu Ile Asp Gly Leu Met
 35 40 45
 Pro Asn Asp Thr Leu Ser Phe Trp Lys Thr Thr Leu Pro Tyr Lys Gly
 50 55 60
 Glu Glu Gly Glu Val Ala Phe Asn Val Ile Val Ser Glu Pro Asn Lys
 65 70 75 80
 Phe Cys Tyr Ser Gly Glu Gln Pro His Thr Gln Cys Tyr Ser Met Ile
 85 90 95
 Tyr Lys Pro Val Ser Gly Glu Ser Gln Ala Ser Ser Arg Gln Ala Leu
 100 105 110
 Met Ile Ile Val Glu Glu Gly Asp Tyr His Leu Lys Gly Glu Thr Asp
 115 120 125
 Phe Ile Tyr Tyr Ser Ala Ile Ser Gly Gly Leu Tyr Asp Asp Pro Ser
 130 135 140
 Leu Lys Glu Ile Val His Met Glu Asp Ser Leu Glu Ile Ile Arg Thr
 145 150 155 160
 Arg Tyr Arg Lys Ile Val Asp Glu Ala Arg Lys Lys Gly Asp Met Glu
 165 170 175
 Lys Ala Lys Glu Tyr Val Asp Lys Phe Asn Arg Phe His Ser Asn His
 180 185 190
 Gln Glu Ser Tyr Ala Leu Leu Gln Arg Lys Thr Lys Glu Leu Val Ala
 195 200 205
 Asn Asn Pro Ser Ser Thr Trp Val Ile Val Glu Tyr Leu Gln Lys Val
 210 215 220
 Ser Tyr Ala Ala Pro Glu Glu Met Lys Ser Val Leu Leu Asn Met Asp
 225 230 235 240
 Gln Glu Ala Gln Asn Ser Tyr Tyr Gly Gln Ile Phe Arg Arg Glu Val
 245 250 255
 Glu Ala Ile Glu Arg Leu Ala Pro Gly Asn Glu Ala Pro Leu Phe Ser
 260 265 270
 Val Thr Thr Thr Asp Gly Lys Arg Ile Thr Ser Asp Asp Thr Arg Gly
 275 280 285
 Lys Tyr Leu Leu Leu Tyr His Trp Gly Leu Cys Pro Gly Ser Ile Ser
 290 295 300
 Val Asp Lys Arg Val Thr Val Phe Tyr Glu Lys Tyr Lys Asp His Leu
 305 310 315 320
 Ser Val Val Gly Ile Thr Asp Asn Met Glu Thr Ile Cys Glu Leu Asn
 325 330 335
 Lys Asn Val Gly Glu Asp Asp Glu Val Leu Gly Met Lys Leu Lys Pro
 340 345 350
 Val Leu Glu Asn Met Leu Ala His Pro Trp Pro Glu Val Glu Ser Thr
 355 360 365
 Gly Asp Asn His Lys Ile Ile Glu Asp Phe Ala Phe Ala Gly Leu Pro

370 375 380
 Tyr Phe Val Phe Ile Ser Pro Asp Gly Lys Ile Ile Ser Arg Asp Phe
 385 390 395 400
 Arg Lys Ala Phe Asp Lys Ala Gln Glu Val Met Lys Ser Glu Phe Asp
 405 410 415
 Asp

<210> 8037
 <211> 128
 <212> PRT
 <213> B.fragilis

<400> 8037
 Arg Ser Ile Ser Thr Ser Thr Tyr Arg Ser Ser Pro Arg Arg Leu Asn
 1 5 10 15
 Thr Glu Ser Ser Ala Ile Leu Lys Val Ile Tyr Arg Ser Pro Ala Gly
 20 25 30
 Pro Pro Leu Met Pro Ser Pro Pro Tyr Pro Phe Asn Leu Ile Thr Cys
 35 40 45
 Pro Ser Ala Thr Pro Ala Gly Ile Val Ile Arg Thr Cys Leu Pro Phe
 50 55 60
 Thr Phe Asn Thr Cys Leu Trp Val Arg Ala Ala Ser Arg Arg Asp Arg
 65 70 75 80
 Cys Asn Ser Ala Leu Lys Ser Cys Pro Arg Lys Pro Ala Leu Pro Arg
 85 90 95
 Pro Pro Pro Pro Leu Cys Pro Asn Ile Asp Ser Lys Lys Ser Glu Asn
 100 105 110
 Pro Pro Ala Ser Pro Pro Glu Asn Pro Ser Pro Ser Asp Glu Tyr Gln
 115 120 125

<210> 8038
 <211> 635
 <212> PRT
 <213> B.fragilis

<400> 8038
 Thr Thr Thr Thr Ser Arg Val Arg Thr Met Thr Ser Gly Tyr Val Lys
 1 5 10 15
 Arg Thr Leu Arg Cys Ser Glu Arg Trp Gly Tyr Val Glu Asn Ala Gly
 20 25 30
 Leu Thr Cys Asn Pro Ala Arg Ser Arg Ile His Tyr Arg Phe Asp Phe
 35 40 45
 Gly Arg Tyr Leu Gly Ile Asp Lys Cys Gln His Leu Glu Thr Leu Leu
 50 55 60
 Pro Phe Gly Thr Phe Val Val Phe Cys Val Glu Ser Arg Arg Ile Ile
 65 70 75 80
 Ser Ile Phe Thr Val Asp Ser Ser Gln His Ala Ile Met Thr Ile Gln
 85 90 95
 Leu Leu Leu Val Thr Gly Val Thr Asp Cys Leu Trp Leu Tyr Val Leu
 100 105 110
 Ser Leu Leu Leu Phe Leu Thr Val Cys Phe Leu Leu Tyr Gln Asn Phe
 115 120 125
 Leu Leu Arg Lys Ser Ala Ser Ala Asp Asp Asp Tyr Arg Arg Phe Leu
 130 135 140
 Phe Asp Ile Leu Asp Asn Leu Pro Phe Pro Ile Met Val Lys Asp Ile
 145 150 155 160
 Gln Glu Gln Phe Lys Tyr Thr Tyr Trp Asn Lys Glu Ser Glu Leu Gln
 165 170 175

Ser Gly Ile	Ser Arg Lys Asp Ala Val Gly Phe Ser Asp Val Asp Ile		
180	185	190	
Phe Gly Glu Glu Arg Gly Lys Gln Tyr Arg Lys Ile Asp Glu Asp Leu			
195	200	205	
Val Arg Ala Gly Ile Pro Tyr Lys Ala Glu Glu Arg Tyr Val Thr Ala			
210	215	220	
Asp Gly Lys Val His Asp Thr Leu Val Met Lys Ser Ile Ile Ser Ser			
225	230	235	240
Gly Lys Leu Gly Lys Trp Leu Leu Val Ala Arg Trp Glu Ile Thr Gln			
245	250	255	
Leu Lys Met Tyr Glu Arg Glu Leu Leu Ala Ala Lys Glu Gln Leu Glu			
260	265	270	
Gly Ala Val Cys Lys Gln Lys Leu Ala Leu Arg Ser Ile Asp Phe Gly			
275	280	285	
Leu Ile Tyr Ile Asp Arg Asn Tyr Leu Val Gln Trp Glu Glu Thr Gly			
290	295	300	
Asn Ile Lys Asn Leu Val Ser Gly Arg His Tyr Thr Pro Gly Thr Val			
305	310	315	320
Cys Tyr Arg Thr Thr Gly Gln Gly Thr Gln Pro Cys Gly Lys Cys Ala			
325	330	335	
Phe Arg Glu Ala Ile Gly Thr Gly Lys Ile Val Arg His Ile Thr His			
340	345	350	
Val Asp His Val Asp Phe Glu Ile Thr Ala Thr Pro Val Tyr Asp Asp			
355	360	365	
Thr Gly Asn Glu Ile Ile Gly Gly Leu Leu Arg Phe Glu Asp Ile Thr			
370	375	380	
Glu Lys Leu Lys Val Glu Arg Met Leu Gln Glu Ala Lys Glu Lys Ala			
385	390	395	400
Glu Glu Ser Asn Arg Leu Lys Ser Ala Phe Leu Ala Asn Met Ser His			
405	410	415	
Glu Ile Arg Thr Pro Leu Asn Ala Ile Ile Gly Phe Ser Asp Leu Ile			
420	425	430	
Cys Gln Thr Asp Asp Ala Glu Glu Lys Glu Glu Tyr Ile Arg Ile Val			
435	440	445	
Thr Ser Asn Asn Glu Leu Leu Leu Gln Leu Ile Asp Asp Ile Leu Asp			
450	455	460	
Leu Ser Lys Ile Glu Ala Gly Thr Met Asp Phe Ser Tyr Ala Pro Thr			
465	470	475	480
Asp Ile Asn Glu Leu Met Glu Asp Ile Cys Leu Gln Met Gln Gln Lys			
485	490	495	
Asn Gln Arg Pro Glu Val Gln Ile Met Phe Thr Glu Lys Glu Pro Gly			
500	505	510	
Cys Val Ile Asn Thr Asp Arg Leu Arg Leu Ser Gln Val Ile Met Asn			
515	520	525	
Leu Met Asn Asn Ala Met Lys Phe Thr Ser Glu Gly Ser Ile Thr Leu			
530	535	540	
Gly Tyr Arg Leu Thr Arg Gln Lys Asp Glu Leu Tyr Phe Phe Val Lys			
545	550	555	560
Asp Thr Gly Ile Gly Ile Pro Ala Asp Gln Ala Gly Lys Val Phe Glu			
565	570	575	
Arg Phe Val Lys Leu Asn Thr Phe Ile Lys Gly Thr Gly Leu Gly Leu			
580	585	590	
Ala Ile Cys Arg Val Ile Ile Glu Arg Leu Gly Gly Thr Ile Gly Val			
595	600	605	
Glu Thr Arg Glu Gly Lys Gly Ser Cys Phe Trp Phe Arg Leu Pro Val			
610	615	620	
Arg Glu Asp Met Leu Leu Glu Ser Pro Val Arg			
625	630	635	

<210> 8039
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8039
 Gly Arg Thr Thr Asp Arg Gly Leu Gly Gln Tyr Thr Ser Leu Phe Cys
 1 5 10 15
 Leu Thr Ser Leu Asn Gly Leu Leu Asn Glu Glu Thr Met Val Lys Leu
 20 25 30
 Lys Asp Trp Asn Ser Phe Leu Arg Lys Thr Leu Val Glu Val Leu Met
 35 40 45
 Gly Ser Thr Pro Leu Ala Gln Asn Tyr Gln Arg Asp Ser Val Phe Arg
 50 55 60
 Trp Glu Gly Pro Leu Tyr Cys Pro Val Ser Lys Gly His Arg
 65 70 75

<210> 8040
 <211> 1066
 <212> PRT
 <213> B.fragilis

<400> 8040
 Lys Asn Gln Thr Lys Pro Leu Leu Leu Thr Gln Asn Lys Ile Val Met
 1 5 10 15
 Leu Lys Ile Thr Arg Gln Val Thr Leu Leu Leu Leu Ala Gly Ala Leu
 20 25 30
 Ser Phe Pro Ala Tyr Ser Tyr Ala Thr Gln Ala Thr Glu Val Leu Val
 35 40 45
 Pro Glu Val Thr Gln Glu Lys Val Thr Gly Thr Val Glu Asp Ala Leu
 50 55 60
 Gly Pro Val Ile Gly Ala Ser Val Met Val Lys Gly Thr Thr Asn Gly
 65 70 75 80
 Val Ile Thr Asp Leu Glu Gly Lys Phe Ser Leu Asn Asp Val Lys Lys
 85 90 95
 Gly Asp Ile Ile Val Ile Ser Tyr Ile Gly Tyr Val Thr Gln Glu Ile
 100 105 110
 Pro Tyr Thr Gly Lys Pro Ile Gln Val Lys Leu Ala Glu Asp Ser Lys
 115 120 125
 Ala Leu Glu Glu Val Val Val Val Gly Tyr Ala Thr Val Lys Lys Ala
 130 135 140
 Asn Leu Thr Gly Ala Val Ser Ala Val Asp Gly Lys Val Leu Glu Asp
 145 150 155 160
 Arg Pro Ile Val Asn Leu Gly Gln Gly Leu Gln Gly Ala Ile Pro Asn
 165 170 175
 Leu Asn Val Thr Thr Ser Gly Arg Pro Gly Gln Gly Ser Ser Phe Asn
 180 185 190
 Ile Arg Gly Thr Thr Ala Met Ser Gly Ser Ser Pro Leu Val Leu Val
 195 200 205
 Asp Gly Val Glu Met Asp Pro Asn Leu Ile Asn Pro Gln Asp Val Lys
 210 215 220
 Ser Val Ser Val Leu Lys Asp Ala Ala Ser Ala Ser Ile Tyr Gly Ala
 225 230 235 240
 Arg Ala Ala Tyr Gly Val Val Leu Ile Thr Thr Lys Gly Gly Arg Lys
 245 250 255
 Asp Gln Pro Thr Gln Val Ser Phe Asp Ala Ser Val Ser Phe Asn Gly
 260 265 270
 Pro Thr Thr Arg Pro Thr Tyr Met Asn Ser Met Gln Tyr Ala Thr Trp
 275 280 285

Met Asn Thr Ala Gln Gln Asn Thr Val Gly Arg Asp Tyr Phe Asp Ala
 290 295 300
 Glu Trp Met Gln His Ile Glu Ala Tyr Tyr Lys Asp Pro Val Asn Asn
 305 310 315 320
 Ser Pro Val Phe Ile His Ser Asp Pro Ser Ile Ser Lys Asn Gly Thr
 325 330 335
 Lys Tyr Thr Tyr Ala Gly Asn Thr Asn Trp Met Lys Glu Leu Tyr Lys
 340 345 350
 Lys Asn Tyr Pro Val Gln Lys Tyr Asn Val Asn Ile Ser Gly Gly Gly
 355 360 365
 Lys Lys Ala Thr Tyr Tyr Thr Ser Leu Gly Tyr Thr Asp Gln Gly Ser
 370 375 380
 Leu Ile Arg Phe Gly Asn Glu Gln Phe Lys Lys Phe Asn Val Met Asn
 385 390 395 400
 Asn Ile Asn Tyr Asp Val Asn Asp Trp Leu His Leu Ser Met Lys Thr
 405 410 415
 Ser Phe Asn Arg Thr Lys Leu Arg Gly Leu Asn Gln Asp Asn Val His
 420 425 430
 Gly Asp Asn Phe Met Gly Gly Asp Thr Arg Pro Ile Met Pro Val Lys
 435 440 445
 His Pro Asp Gly Asn Trp Ala Gly Gln Gly Asp Phe Thr Asn Phe Pro
 450 455 460
 Ala Ile Leu Glu Asp Gly Gly Ser Arg Leu Thr Asn Lys Asn Asp Leu
 465 470 475 480
 Trp Asn Thr Ile Thr Met Lys Leu Thr Pro Ile Lys Gly Met Ser Ile
 485 490 495
 Asn Met Asp Tyr Thr Phe Asn Tyr Tyr Ser Glu Asn Asn Lys Val His
 500 505 510
 Met Lys Ser Phe Asp Glu Tyr Gly Ala Asn Gly Gln Phe Leu Gln Thr
 515 520 525
 Phe Ala Trp Thr Asn Pro Asn Ser Val Ser Gln Ser Gln Ala Asn Asp
 530 535 540
 Thr Tyr Asn Ala Phe Asn Phe Phe Gly Asp Tyr Glu Lys Thr Leu Gly
 545 550 555 560
 Lys His Tyr Leu Lys Gly Met Ile Gly Tyr Asn Gln Glu Ser Lys His
 565 570 575
 Thr Thr Gly Phe Asn Ala Gly Arg Glu Gln Leu Ile Ser Asn Asp Leu
 580 585 590
 Gly Ser Leu Ser Tyr Ala Thr Gly Asp Arg Trp Val Gly Ser Ser Asp
 595 600 605
 Asn Ser Trp Ala Thr Arg Ser Gly Phe Phe Arg Ile Asn Tyr Gly Tyr
 610 615 620
 Asp Glu Arg Tyr Leu Leu Glu Val Asn Gly Arg Tyr Asp Leu Ser Ser
 625 630 635 640
 Lys Phe Pro Lys His Asp Arg Ala Val Phe Asn Pro Ser Phe Ser Ala
 645 650 655
 Ala Trp Arg Leu Ser Asn Glu Ser Trp Phe Lys Ser Trp Thr Asn Ser
 660 665 670
 Phe Phe Asp Glu Leu Lys Ile Arg Gly Ser Tyr Gly Ser Leu Gly Asn
 675 680 685
 Gln Ala Leu Asn Asn Gly Trp Tyr Ala Tyr Leu Ser Asn Tyr Ser Thr
 690 695 700
 Gly Gln Ile Ser Trp Ile Met Gly Ser Asn Gln Pro Gln Tyr Val Val
 705 710 715 720
 Pro Gly Gly Leu Val Ser Ser Ser Ile Thr Trp Glu Thr Val Thr Gln
 725 730 735
 Trp Asp Leu Gly Leu Asp Phe Asn Phe Leu Asn Ser Arg Leu Lys Gly
 740 745 750
 Ala Phe Asp Tyr Tyr Gln Arg Arg Thr Ser Asp Ile Leu Ala Ala Gly

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      755              760              765
Lys Ile Leu Pro Gly Val Leu Gly Ala Asn Glu Pro Gln Glu Asn Ala
  770              775              780
Ala Glu Ser Leu Thr Lys Gly Trp Glu Phe Glu Ile Ser Trp Asn Asp
  785              790              795              800
Gln Leu Ala Asn Gly Phe His Tyr Thr Val Gly Phe Asn Leu Ser Asp
      805              810              815
Tyr Gln Ser Glu Val Thr Lys Phe Asp Asn Glu Ser Lys Glu Leu Gly
      820              825              830
Asn Trp Tyr Val Gly Gln Lys Gln Gly Glu Ile Trp Gly Tyr Glu Thr
      835              840              845
Tyr Gly Leu Phe Gln Ser Glu Gln Glu Ile Ala Gly Ala Ala Asn Gln
      850              855              860
Asp Lys Val Ser Gly Gly Ile Lys Leu Met Pro Gly Asp Ile Arg Phe
  865              870              875              880
Val Asp Arg Asn Asn Asp Gly Val Ile Asp Trp Gly Asp Asn Thr Val
      885              890              895
Asp Asn Pro Gly Asp Lys Lys Ile Ile Gly Asn Ser Thr Pro Arg Tyr
      900              905              910
His Tyr Gly Ile Asn Leu Gly Ala Asp Trp Lys Gly Phe Asp Leu Gly
      915              920              925
Ile Phe Phe Gln Gly Val Gly Lys Arg Asp Leu Tyr Leu Pro Gly Thr
      930              935              940
Ser Phe Arg Ser His Tyr Gly Ser Glu Trp Gln Val Pro Ser Ala Tyr
  945              950              955              960
Asn Asn Asp Tyr Trp Thr Glu Glu Asn Thr Gly Ala Tyr Phe Pro Arg
      965              970              975
Ala Arg Phe Asn Gly Gly Ser Ala Ile Asn Gln Ala Gln Thr Arg Tyr
      980              985              990
Met Val Asp Ala Ser Tyr Cys Arg Leu Lys Ser Val Ser Ile Gly Tyr
      995              1000              1005
Thr Leu Pro Lys Val Leu Thr Gln Lys Ala Ser Ile Glu Lys Ile Arg
      1010              1015              1020
Ile Tyr Phe Thr Gly Glu Asn Leu Phe Thr Ile Ser Asp Thr Pro Asp
      1025              1030              1035              1040
Gly Leu Asp Pro Glu Leu Asp Asn Pro Tyr Thr Tyr Pro Met Gln Arg
      1045              1050              1055
Ser Leu Ser Val Gly Leu Ser Leu Thr Phe
      1060              1065

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<210> 8041

<211> 68

<212> PRT

<213> B.fragilis

<400> 8041

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Thr Pro Pro Thr Pro Arg Ala Asn Gln Ser Val Lys Ala Ser Ala Gly
1              5              10              15
Cys Gly Gly Leu Thr Asn Asp Gly Tyr Ser Leu Ile Ser Ser Asp Gly
      20              25              30
Leu Gln Pro Gly Asp Lys Ile Val Ser Ser Gly Val His His Ile Glu
      35              40              45
Asn Gly Glu Thr Val Lys Thr Leu Pro Glu Ile Thr His Thr Asn Ile
      50              55              60
Gly Gly Leu Leu
65

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<210> 8042

<211> 206

<212> PRT

<213> B.fragilis

<400> 8042

```

Lys Glu Thr Ala Asn Ser Phe Ser Cys Cys Thr Pro Ala Gly His Thr
1          5          10          15
Ser Thr Ile Gly Asn Asp Ile Leu Arg Lys Val Arg Phe Ser Asn Tyr
          20          25          30
Asp Ser Pro Ala Asp Gln Asn Leu Arg Tyr Gln His Asn Val Ile Asn
          35          40          45
Ala Tyr Ile Asn Ser Ile Arg Tyr Thr Asp Asp Phe Leu Ser Arg Leu
          50          55          60
Ile Val Val Leu Gln Gln Gln Asp Ala Gly Ser Asp Ile Leu Tyr Thr
65          70          75          80
Ser Asp His Gly Glu Asp Ile Cys Asp Asp His Cys His Leu Phe Val
          85          90          95
His Ala Ser Pro Val His Ser Lys Tyr Gln Leu His Val Pro Phe Ile
          100          105          110
Val Trp Thr Ser Asp Thr Tyr Arg Glu Lys Tyr Pro Glu His Met Asp
          115          120          125
Ala Ile Gln Lys Asn Arg His Lys Ser Val Val Ser Asn Arg Val Val
          130          135          140
Phe His Ser Val Leu Asp Leu Ala Gly Val Thr Thr Tyr Val Asn
145          150          155          160
Asp Ser Leu Ser Val Ala Ser Pro Ser Tyr Thr Glu Phe Pro Arg Phe
          165          170          175
Tyr Leu Asn Asp His Asn Glu Pro Arg Ser Tyr Asp Asp Ile Gly Leu
          180          185          190
Arg Lys Glu Asp Phe Glu Met Phe Gly Lys Met Gly Ile Arg
          195          200          205

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<210> 8043

<211> 66

<212> PRT

<213> B.fragilis

<400> 8043

```

Ile Pro Phe Leu Ile Asp Arg Gly Glu Ser Lys Ile Leu Cys Leu Lys
1          5          10          15
Pro Gln Thr Met Asn Ile Pro Asn Thr Ser Tyr Glu Val Asp Phe Glu
          20          25          30
Arg Gly Asn Pro Ile Phe Leu Lys Ala Leu Arg Ala Arg Leu Pro Phe
          35          40          45
Gly Lys Leu Trp Asp Leu Gly Ile Arg Ile Asn Asn Arg Thr Phe Gln
          50          55          60
Pro Phe
65

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<210> 8044

<211> 282

<212> PRT

<213> B.fragilis

<400> 8044

```

Met Ser Val Tyr Lys Asn Thr Ser Phe Val Leu Pro Leu Gln Lys Lys
1          5          10          15
Ser Thr Lys Lys Ala Leu Leu Thr Ile Lys Ser Pro Ala Lys Glu Ile
          20          25          30
Glu Ser Thr Asn Arg Gly Ile Leu Ser Val Ile Ile Tyr Leu Cys Ser

```

35	40	45
Pro Lys Lys Ile Pro Ile Ser Asn Met Lys Lys Ile Trp Ile Leu Ala		
50	55	60
Val Leu Thr Ile Cys Ser Val Ala Thr Gln Ala Gln Glu Val Phe Ile		
65	70	75
Asn Ala Asp Leu Val Ser Ser Tyr Ile Trp Arg Gly Met Lys Asn Gly		
85	90	95
Asn Ala Ser Val Gln Pro Thr Leu Gly Val Glu Trp Lys Gly Trp Thr		
100	105	110
Leu Ser Ala Trp Gly Ser Thr Glu Phe Arg Asn Glu Asn Asn Glu Ile		
115	120	125
Asp Leu Thr Leu Glu Tyr Glu Tyr Lys Asn Leu Gln Leu Cys Leu Asn		
130	135	140
Asn Tyr Phe Tyr Gln Ser Glu Asn Glu Pro Phe Lys Tyr Phe His Tyr		
145	150	155
Thr Pro Arg Thr Thr Gly His Thr Phe Glu Ala Gly Ala Val Tyr Thr		
165	170	175
Val Ser Glu Arg Phe Pro Leu Ser Ile Gly Trp Tyr Thr Thr Phe Ala		
180	185	190
Gly Asn Asp Tyr Arg Glu Asn Glu Glu Arg Ala Trp Ser Ser Tyr Cys		
195	200	205
Glu Phe Ser Tyr Pro Phe Thr Val Lys Gly Val Asp Leu Ala Val Glu		
210	215	220
Ala Gly Phe Thr Pro Trp Glu Gly Glu Tyr Ala Asp Lys Leu Asn Val		
225	230	235
Val Asn Val Gly Leu Ser Ala Thr Lys Thr Leu Asn Ile Ser Ser Gly		
245	250	255
Phe Thr Pro Ala Ile Phe Gly Lys Leu Ile Ala Asn Pro Tyr Glu Asn		
260	265	270
Arg Phe Tyr Phe Val Phe Gly Ile Ser Leu		
275	280	

<210> 8045

<211> 309

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (22)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8045

Asn Leu Ala Tyr Gly Leu Ile Trp Asn Arg Phe Leu Ile Lys Asn Arg		
1	5	10
Arg Met Ile Asp Thr Xaa Met Pro Phe Arg Arg Ile Leu Leu Thr Ser		
20	25	30
Asp Thr Phe Gln Ile Leu Lys Glu Gly Gln Ile Ile Ser Thr Phe Asn		
35	40	45
Lys Cys Gly Ile Phe Tyr Cys Gln Arg Gly Ser Val Glu Val Ser Leu		
50	55	60
Glu Gly Cys His Tyr His Ile Lys Pro Gly Asp Val Tyr Ile Tyr Met		
65	70	75
Ala Ser Thr Leu Val His Leu Leu His Lys Ser Glu Asp Ala Glu Gly		
85	90	95
Ile Met Val Glu Val Asp Phe Tyr Tyr Ile Leu Pro Ile Val Asn Lys		
100	105	110
Val Ile Asn Val Glu Ser Gln Leu Phe Met Arg Lys Asn Pro Cys Val		
115	120	125

Ser Leu Ser Gly Glu Gln Cys Ala His Phe Glu Tyr Leu Leu Asn Asn
 130 135 140
 Leu Trp Asp Arg Ile Asn Ala Glu Asp Cys Gln Lys Glu Asn Val Gln
 145 150 155 160
 Tyr Gln His Leu Lys Leu Glu Leu Ile Lys Ser Met Gly Gln Thr Ile
 165 170 175
 Cys Tyr Glu Ile Leu Asn Met Tyr Phe Thr Asn Gln Pro Leu Gln Pro
 180 185 190
 Leu Gln Gln Gly Lys Lys Asp Val Val Phe Gln Asn Phe Met Leu Ser
 195 200 205
 Leu Phe Arg Phe Tyr Arg Lys Glu Arg Asp Val Ser Phe Tyr Ala Arg
 210 215 220
 Met Gln His Ile Thr Pro Arg Tyr Phe Ser Ala Ile Ile Lys Glu Lys
 225 230 235 240
 Thr Gly Asp Ser Ala Leu Gln Trp Ile Val Arg Met Val Ile Thr Glu
 245 250 255
 Ala Lys Gln Leu Leu Glu Glu Ser Asp Leu Ser Ile Lys Glu Ile Ala
 260 265 270
 Asp Gln Leu Asn Phe Pro Thr Gln Ser Phe Phe Gly Lys Tyr Phe Lys
 275 280 285
 Gln Tyr Val Gly Val Ser Pro Lys Glu Tyr Arg Asn Asn Thr Ala Thr
 290 295 300
 Thr Arg Ile Lys Arg
 305

<210> 8046

<211> 754

<212> PRT

<213> B.fragilis

<400> 8046

Asn His Ser His Lys Tyr Arg Arg Thr Val Ile Met Asp Ile Ser Lys
 1 5 10 15
 Trp Ala Phe His Asn Arg Asn Leu Ile Tyr Phe Leu Ile Ala Val Leu
 20 25 30
 Met Phe Gly Gly Ala Tyr Ser Cys Tyr Gln Met Ser Lys Leu Glu Asp
 35 40 45
 Pro Glu Ile Lys Val Lys Leu Ala Met Val Val Thr Thr Tyr Pro Gly
 50 55 60
 Ala Ser Ala His Gln Val Glu Leu Glu Val Thr Asp Val Leu Glu Lys
 65 70 75 80
 Asn Ile Arg Thr Met Gly Asn Ile Asp Asn Ile Glu Ser Tyr Ser Tyr
 85 90 95
 Asn Asp Leu Ser Leu Ile Gln Ile Glu Leu Leu Ser Thr Val Pro Asp
 100 105 110
 Asp Asp Val Glu Gln Cys Trp Asp Met Leu Arg Arg Lys Val Asn Asp
 115 120 125
 Ala Arg Ala Ser Leu Pro Glu Gly Val Ser Ala Pro Ile Val Lys Asp
 130 135 140
 Asp Phe Gly Asn Val Tyr Gly Met Phe Tyr Ala Leu Thr Gly Asp Gly
 145 150 155 160
 Leu Ser Asp Arg Glu Leu Ser Asp Tyr Ala Glu Leu Ile Lys Arg Glu
 165 170 175
 Val Gly Glu Leu Glu Gly Val Asp Arg Ile Asp Leu Tyr Gly Lys Arg
 180 185 190
 Pro Glu Cys Ile Asn Ile Ser Leu Leu Gln Asp Arg Met Ala Asn Leu
 195 200 205
 Gly Val Lys Pro Ala Glu Val Leu Ala Thr Leu Asn Gly Gln Asn Lys
 210 215 220

690 695 700
 Cys Leu Ile Thr Thr Asp Trp Glu Pro Gln Ile Pro Val Leu Thr Ile
 705 710 715 720
 Glu Tyr Asp Gln Pro Ala Ala Arg Ala Leu Gly Leu Ser Arg Ser Asp
 725 730 735
 Val Ser Met Ser Leu Leu Thr Ala Cys Arg Gly Ile Pro Ile Gly Ser
 740 745 750
 Phe Tyr

<210> 8047
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8047
 Cys Leu Pro Gln Ala Met Pro Val Lys Val Val Arg Glu Asn Ile Pro
 1 5 10 15
 Glu Glu Asp Ala Gly Pro Ala Ser Ala Tyr Gln Ala Pro Val Ser Ala
 20 25 30
 Lys Gly Ala Val Thr Asn Ala Pro Glu Met Tyr Trp Glu Thr Pro Ser
 35 40 45
 Pro Tyr Pro Val Thr Pro Phe Leu Pro Asp Ser Gly Gly Val Ala Ser
 50 55 60
 Ala Ser Asp Ser Glu Ile Val Tyr Val Glu Glu Asp
 65 70 75

<210> 8048
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 8048
 Cys Phe Thr Asn Tyr Ser Val Ile Met Ile Lys Cys Ile Ala Val Asp
 1 5 10 15
 Asp Glu Pro Leu Ala Leu Glu Gln Leu Thr Gly Tyr Ile Ala Arg Val
 20 25 30
 Pro Phe Leu Gln Leu Ile Ala Ser Cys Gln Asp Ala Phe Ser Ala Met
 35 40 45
 Gln Val Leu Ser Glu Glu Glu Val Asp Leu Met Phe Val Asp Ile His
 50 55 60
 Met Pro Asp Leu Asn Gly Leu Asp Leu Val Arg Ser Leu Val Val Lys
 65 70 75 80
 Pro Leu Ile Val Phe Thr Thr Ala Tyr Pro Glu Tyr Ala Val Glu Gly
 85 90 95
 Phe Lys Val Asp Ala Val Asp Tyr Leu Leu Lys Pro Phe Glu Phe Gln
 100 105 110
 Asp Leu Leu Lys Ala Ala Asp Lys Ala Arg Arg Gln Phe Glu Tyr His
 115 120 125
 Leu Gln Asp Asn Gly Gly Gly Thr Glu Thr Asp Leu Leu Glu Lys Asp
 130 135 140
 Gly Ser Leu Phe Val Lys Ser Glu Tyr Lys Ile Ile Arg Ile Asn Val
 145 150 155 160
 Ala Asp Ile Cys Tyr Ile Glu Gly Met Ser Glu Tyr Val Arg Ile Tyr
 165 170 175
 Thr Asp Thr Ala Asp Lys Pro Val Val Thr Leu Leu Ser Met Arg Lys
 180 185 190
 Leu Glu Glu Arg Leu Pro Gln Glu Met Phe Met Arg Val His Arg Ser
 195 200 205

Tyr Ile Val Asn Leu Arg Lys Ile Thr Glu Val Ser Arg Leu Arg Ile
 210 215 220
 Ile Phe Asn Lys Asn Ile Tyr Ile Pro Val Gly Asp Asn Tyr Lys Glu
 225 230 235 240
 Arg Phe Thr Glu Tyr Ile Asn Lys Ile Cys Val Ser Ser
 245 250

<210> 8049

<211> 568

<212> PRT

<213> B.fragilis

<400> 8049

Glu Met Ala Asn Phe Tyr Leu Asp Thr Pro Glu Leu Lys His His Leu
 1 5 10 15
 Asn His Pro Leu Met Lys Arg Ile Val Glu Leu Lys Glu Arg Asn Tyr
 20 25 30
 Ala Asp Lys Asp Lys Phe Asp Tyr Ala Pro Val Asp Phe Glu Asp Ala
 35 40 45
 Met Asp Ser Tyr Asp Lys Val Leu Glu Ile Val Gly Glu Ile Cys Gly
 50 55 60
 Asp Ile Ile Ala Pro Asn Ala Glu Gly Val Asp His Glu Gly Pro Val
 65 70 75 80
 Cys Ala Asp Asn Arg Val Thr Tyr Ala Ser Gly Thr Thr Arg Asn Leu
 85 90 95
 Asp Ala Cys Arg Lys Ala Gly Leu Met Gly Met Ala Met Pro Arg Arg
 100 105 110
 Phe Gly Gly Leu Asn Phe Pro Ile Thr Pro Tyr Ile Met Ala Ala Asp
 115 120 125
 Ile Val Ser Arg Ser Asp Ala Gly Phe Glu Asn Leu Trp Gly Leu Gln
 130 135 140
 Asp Cys Ala Glu Thr Ile Tyr Glu Phe Ala Asn Glu Glu Gln Lys Gln
 145 150 155 160
 Arg Tyr Ile Thr Arg Val Cys Gln Gly Glu Thr Met Ser Met Asp Leu
 165 170 175
 Thr Glu Pro Asp Ala Gly Ser Asp Leu Gln Ser Val Met Leu Lys Ala
 180 185 190
 Thr Tyr Ser Glu Lys Asp Gln Cys Trp Tyr Leu Asn Gly Val Lys Arg
 195 200 205
 Phe Ile Thr Asn Gly Asp Ala Asp Ile His Leu Val Leu Ala Arg Ser
 210 215 220
 Glu Glu Gly Thr His Asp Gly Arg Gly Leu Ser Met Phe Ile Tyr Asp
 225 230 235 240
 Lys Arg Asn Gly Gly Val Asn Val Arg Arg Ile Glu Asn Lys Met Gly
 245 250 255
 Ile Lys Gly Ser Pro Thr Cys Glu Leu Val Tyr Lys Asn Ala Lys Ala
 260 265 270
 Glu Leu Cys Gly Asp Arg Lys Leu Gly Leu Ile Lys Tyr Val Met Ala
 275 280 285
 Leu Met Asn Gly Ala Arg Leu Gly Ile Ala Ala Gln Ser Val Gly Leu
 290 295 300
 Ser Gln Ala Ala Tyr Asn Glu Ala Leu Ala Tyr Ala Lys Asp Arg Lys
 305 310 315 320
 Gln Phe Gly Lys Ala Ile Ile Glu Phe Pro Ala Val Ala Glu Ile Leu
 325 330 335
 Ser Leu Met Lys Ala Lys Leu Asp Ala Ser Arg Ser Leu Leu Tyr Glu
 340 345 350
 Thr Ala Arg Phe Val Asp Val Tyr Lys Ala Leu Asp Asp Ile Ala Lys
 355 360 365

Glu Arg Lys Leu Thr Pro Glu Glu Arg Ala Glu Gln Lys Thr Phe Ala
 370 375 380
 Lys Leu Ala Asp Ala Phe Thr Pro Leu Gly Lys Gly Met Gly Ser Glu
 385 390 395 400
 Phe Ala Asn Gln Asn Ala Tyr Asp Cys Ile Gln Ile His Gly Gly Ser
 405 410 415
 Gly Phe Met Lys Asp Tyr Ala Cys Glu Arg Ile Tyr Arg Asp Ser Arg
 420 425 430
 Ile Thr Ser Ile Tyr Glu Gly Thr Thr Gln Leu Gln Val Val Ala Ala
 435 440 445
 Ile Arg Tyr Val Thr Thr Gly Ala Tyr Leu Ala Arg Ile Gln Glu Tyr
 450 455 460
 Glu Asn Met Pro Val Ala Pro Glu Leu Glu Gly Leu Gln Asn Arg Leu
 465 470 475 480
 Lys Ser Met Ala Ser Lys Tyr Ala Ala Cys Val Thr Gln Ile Thr Glu
 485 490 495
 Ala Lys Asp Gln Glu Leu Leu Asp Phe Cys Ala Arg Arg Leu Val Glu
 500 505 510
 Met Ala Ala His Ile Ile Met Gly His Leu Met Val Gln Asp Ala Ser
 515 520 525
 Lys Ser Asp Leu Phe Ser Glu Ser Ala Gln Val Tyr Val Arg Tyr Ala
 530 535 540
 Glu Ala Glu Val Glu Lys His Ile Asn Phe Ile Arg Lys Phe Asp Lys
 545 550 555 560
 Asp Asp Leu Ala Tyr Tyr Arg Lys
 565

<210> 8050
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8050
 Tyr Ile Ile Lys Ser Ile Ser Leu Lys Ser Ile Ser Leu Val Ile Val
 1 5 10 15
 Leu Pro Gly Ile Ile Cys Phe Met Ser Phe Asp Leu Tyr Leu Met Cys
 20 25 30
 Cys Asn Ile Met Ile Tyr Gly Phe Lys Ser Asn Val Asn Gln Gly Leu
 35 40 45
 Leu Arg Lys Arg Asp Val Ile Gly Leu Leu Lys Asn Glu Glu Ile Ile
 50 55 60
 Ser Asn Lys Ile Phe Asn Ile Phe Ile Asn Glu Glu Leu Asp Leu Leu
 65 70 75 80
 Tyr

<210> 8051
 <211> 317
 <212> PRT
 <213> B.fragilis

<400> 8051
 Ile Tyr Lys Asn Met Ala Tyr Ile Asp Tyr Tyr Lys Ile Leu Gly Val
 1 5 10 15
 Asp Lys Asn Ala Ser Gln Asp Asp Ile Lys Lys Ala Phe Arg Lys Leu
 20 25 30
 Ala Arg Lys Tyr His Pro Asp Leu Asn Pro Asn Asp Pro Ser Ala Lys
 35 40 45
 Asp Lys Phe Gln Glu Ile Asn Glu Ala Asn Glu Val Leu Ser Asp Pro

50 55 60
 Glu Lys Arg Lys Lys Tyr Asp Glu Tyr Gly Glu His Trp Lys His Ala
 65 70 75 80
 Asp Glu Phe Glu Ala Gln Lys Lys Ala Arg Gln His Thr Gly Gly Gly
 85 90 95
 Gly Gly Gly Phe Ser Gly Phe Gly Gly Asp Gly Gly Ser Tyr Trp Tyr
 100 105 110
 Ser Ser Asp Gly Glu Gly Phe Ser Gly Gly Asp Ala Gly Gly Phe Ser
 115 120 125
 Asp Phe Phe Glu Ser Met Phe Gly His Arg Gly Gly Gly Arg Gly
 130 135 140
 Asn Ala Gly Phe Arg Gly Gln Asp Phe Asn Ala Glu Leu His Leu Ser
 145 150 155 160
 Leu Arg Asp Ala Ala Arg Thr His Lys Gln Val Leu Asn Val Asn Gly
 165 170 175
 Lys Gln Val Arg Ile Thr Ile Pro Ala Gly Val Ala Asp Gly Gln Val
 180 185 190
 Ile Lys Leu Lys Gly Tyr Gly Gly Glu Gly Ile Asn Gly Gly Pro Ala
 195 200 205
 Gly Asp Leu Tyr Ile Thr Phe Lys Ile Ala Glu Asp Ser Val Phe Lys
 210 215 220
 Arg Leu Gly Asp Asp Leu Tyr Val Asp Val Glu Met Asp Leu Tyr Thr
 225 230 235 240
 Ala Val Leu Gly Gly Glu Lys Val Ile Asp Thr Leu Glu Gly Lys Val
 245 250 255
 Lys Leu Lys Ile Lys Pro Glu Thr Gln Asn Gly Thr Lys Val Arg Leu
 260 265 270
 Lys Gly Lys Gly Phe Pro Val Tyr Lys Lys Glu Gly Gln Phe Gly Asp
 275 280 285
 Leu Ile Ile Thr Tyr Ser Val Lys Ile Pro Thr Asn Leu Thr Asp Arg
 290 295 300
 Gln Lys Glu Leu Phe Arg Glu Leu Gln Gln Ser Met Asn
 305 310 315

<210> 8052

<211> 344

<212> PRT

<213> B.fragilis

<400> 8052

Glu Glu Arg Lys Asp Met Asn Asn Leu Phe Val Tyr Cys Glu Ile Glu
 1 5 10 15
 Asp Gly Ile Val Ala Asp Val Ser Leu Glu Leu Leu Thr Lys Gly Arg
 20 25 30
 Ser Leu Ala Asn Gln Leu Gly Cys Gln Leu Glu Ala Val Val Ala Gly
 35 40 45
 Thr Gly Leu Lys Asp Ile Glu Lys Gln Ile Leu Pro Tyr Gly Val Asp
 50 55 60
 Lys Leu His Val Phe Asp Gly Glu Gly Leu Tyr Pro Tyr Thr Ser Leu
 65 70 75 80
 Pro His Ile Ser Ile Leu Val Asn Leu Phe Lys Glu Glu Gln Pro Gln
 85 90 95
 Ile Cys Leu Met Gly Ala Thr Val Ile Gly Arg Asp Leu Gly Pro Arg
 100 105 110
 Val Ser Ser Ala Leu Thr Ser Gly Leu Thr Ala Asp Cys Thr Ser Leu
 115 120 125
 Glu Ile Gly Asp His Glu Asp Lys Lys Glu Gly Lys Val Tyr Lys Asn
 130 135 140
 Leu Leu Tyr Gln Ile Arg Pro Ala Phe Gly Gly Asn Ile Val Ala Thr

145 150 155 160
 Ile Val Asn Pro Glu His Arg Pro Gln Met Ala Thr Val Arg Glu Gly
 165 170 175
 Val Met Lys Lys Ala Ile Leu Ala Ala Asp Tyr Lys Gly Glu Val Ile
 180 185 190
 His His Asp Val Lys Lys Tyr Val Ala Asp Thr Asp Tyr Val Val Lys
 195 200 205
 Val Ile Glu Arg His Val Glu Lys Ala Lys Asn Asn Leu Lys Gly Ser
 210 215 220
 Pro Ile Ile Ile Ala Gly Gly Tyr Gly Val Gly Ser Lys Glu Asn Phe
 225 230 235 240
 Asn Leu Leu Phe Asp Leu Ala Lys Val Leu Asn Ala Glu Val Gly Ala
 245 250 255
 Ser Arg Ala Ala Val Asp Ala Gly Phe Val Glu His Asp Arg Gln Ile
 260 265 270
 Gly Gln Thr Gly Val Thr Val Arg Pro Lys Leu Tyr Ile Ala Cys Gly
 275 280 285
 Ile Ser Gly Gln Ile Gln His Ile Ala Gly Met Gln Glu Ser Gly Ile
 290 295 300
 Ile Ile Ser Ile Asn Asn Asp Pro Ser Ala Pro Ile Asn Thr Ile Ala
 305 310 315 320
 Asp Tyr Val Ile Asn Gly Thr Ile Glu Glu Val Val Pro Lys Met Ile
 325 330 335
 Lys Tyr Tyr Lys Gln Asn Ser Lys
 340

<210> 8053

<211> 628

<212> PRT

<213> B.fragilis

<400> 8053

His Ile Met Lys Ile Asn Lys Leu Leu Tyr Ala Gly Ala Ala Leu Thr
 1 5 10 15
 Leu Leu Gly Ala Cys Ala Pro Ala Val Lys Ala Pro Glu Ala Ile Leu
 20 25 30
 Pro Val Pro Glu Glu Lys Gln Val Asp Trp Gln Lys Met Glu Thr Tyr
 35 40 45
 Ala Phe Val His Phe Gly Leu Asn Thr Phe Asn Asp Arg Glu Trp Gly
 50 55 60
 Tyr Gly Asp Ser Glu Pro Lys Thr Phe Asn Pro Thr Lys Leu Asp Cys
 65 70 75 80
 Glu Gln Trp Val Lys Thr Phe Val Glu Ser Gly Met Lys Gly Val Ile
 85 90 95
 Leu Thr Ala Lys His His Asp Gly Phe Cys Leu Trp Pro Thr Gln Leu
 100 105 110
 Thr Glu Tyr Cys Ile Arg Asn Thr Pro Tyr Lys Asp Gly Lys Gly Asp
 115 120 125
 Ile Val Gly Glu Leu Ala Ala Ala Cys Lys Lys Tyr Gly Ile Lys Phe
 130 135 140
 Ala Val Tyr Leu Ser Pro Trp Asp Arg His Gln Ala Asn Tyr Gly Thr
 145 150 155 160
 Pro Glu Tyr Val Asp Tyr Phe His Lys Gln Leu Thr Glu Leu Met Thr
 165 170 175
 Asn Tyr Gly Glu Val Phe Glu Val Trp Phe Asp Gly Ala Asn Gly Gly
 180 185 190
 Asp Gly Trp Tyr Gly Gly Ala Lys Asp Ser Arg Thr Ile Asp Arg Lys
 195 200 205
 Thr Tyr Tyr Asn Tyr Pro Arg Ile Tyr Glu Ile Leu Asp Lys Leu Gln

210	215	220
Pro Gln Ala Ile Val Phe Ser Asp Gly Gly Pro Gly Cys Arg Trp Val		
225	230	235
Gly Asn Glu Asn Gly Phe Ala Gly Ala Thr Asn Trp Ser Phe Leu Arg		240
	245	250
Ala Gly Glu Val Tyr Pro Gly Tyr Pro Lys Tyr Arg Glu Leu Gln Tyr		255
	260	265
Gly His Ala Asp Gly Asn Gln Trp Val Pro Ala Glu Cys Asp Val Ser		270
	275	280
Ile Arg Pro Gly Trp Phe Tyr His Pro Glu Glu Asp Asp Arg Val Lys		285
	290	300
Thr Val Glu Gln Leu Thr Asp Leu Tyr Tyr Arg Ser Val Gly His Asn		
305	310	315
Ala Thr Leu Leu Leu Asn Phe Pro Val Asp Arg Asp Gly Leu Ile His		320
	325	330
Pro Ile Asp Ser Ala Asn Ala Val Asn Phe His Lys Asn Val Gln Lys		335
	340	345
Gln Leu Ala His Asn Leu Phe Ala Gly Ile Arg Pro Lys Ala Ser Asp		350
	355	360
Glu Arg Gly Gly Gln Phe Ser Ala Lys Ala Ala Thr Asp Glu Ser Trp		365
	370	375
Asp Thr Tyr Trp Ala Thr Asn Asp Gly Val Thr Ala Ala Asp Ile Glu		380
385	390	395
Phe Asp Phe Pro Lys Thr Glu Lys Val Asn Arg Met Met Ile Gln Glu		400
	405	410
Tyr Ile Pro Leu Gly Gln Arg Val Lys Ser Phe Ile Val Glu Tyr Asp		415
	420	425
Lys Asp Gly Lys Trp Leu Pro Val Lys Leu Asn Glu Glu Thr Thr Thr		430
	435	440
Val Gly Tyr Lys Arg Leu Leu Arg Phe Glu Thr Val Ser Thr Asp Lys		445
	450	455
Leu Arg Ile Arg Phe Thr Asp Ala Arg Ala Cys Leu Cys Ile Asn Asn		460
465	470	475
Ile Glu Ala Tyr Tyr Ala Gly Glu Thr Ala Asp Thr Phe Thr Val Glu		480
	485	490
Ala Lys Glu Leu Lys Ser Tyr Pro Phe Thr Leu Val Gly Val Pro Glu		495
	500	505
Glu Glu Thr Lys Lys Cys Met Asp Lys Asp Lys Asn Thr Thr Ala Phe		510
	515	520
Val Glu Gly Asp Ala Leu Val Ile Asp Leu Gly Glu Glu Arg Thr Ile		525
	530	535
Thr Ser Phe His Tyr Leu Pro Asp Gln Ser Glu Tyr Asn Lys Gly Leu		540
545	550	555
Ile Ser Ser Tyr Glu Leu Ser Val Gly Thr Glu Ala Asn Ala Val Asn		560
	565	570
Arg Ile Val Ala Gln Gly Glu Phe Ser Asn Ile Lys Asn Asn Pro Ile		575
	580	585
Leu Gln Ser Val Tyr Phe Thr Pro Val Lys Ala Arg Tyr Leu Ser Leu		590
	595	600
Lys Pro Thr Lys Met Val Thr Glu Gly Glu Thr Met Gly Phe Ala Glu		605
	610	615
Ile Gly Ile Gln		620
625		

<210> 8054

<211> 70

<212> PRT

<213> B.fragilis

<400> 8054

Gly Tyr Thr Leu Thr Gly Asn Arg Asn Pro Cys Ile Ala Leu Tyr Asn
 1 5 10 15
 Leu Phe Ile Cys Asp Lys Leu Pro Ala His Ala Gln Lys Glu Leu His
 20 25 30
 Gln Pro Asn Ile Arg Ser Leu Thr Ala Asp Thr Asn Leu Val Asn Ile
 35 40 45
 Phe Cys Lys Ser Phe Leu Ile Val Ile Ser His Arg Tyr Ile Tyr Ile
 50 55 60
 Leu Ile Glu Asn Asp Ala
 65 70

<210> 8055

<211> 62

<212> PRT

<213> B.fragilis

<400> 8055

Val Lys His Cys Lys Thr Lys Thr Thr Thr Gly Leu Lys Val Ser Phe
 1 5 10 15
 Thr Thr Asp Glu Gln Ile Tyr Lys Asp Ile His Leu Gln Ala Thr Glu
 20 25 30
 Ile Pro Val Leu Pro Tyr Thr Ile Cys Ser Ser Val Ile Asn Phe Arg
 35 40 45
 His Met Leu Lys Lys Ser Phe Thr Asn Leu Thr Ser Gly His
 50 55 60

<210> 8056

<211> 435

<212> PRT

<213> B.fragilis

<400> 8056

Lys Gln Tyr Cys Asp Asn Glu Asn Lys Thr Leu Lys Tyr Ser Ser Lys
 1 5 10 15
 Asp Arg Arg Ser Phe Pro Tyr Leu Gly Ile Phe Ser Tyr Leu Cys Arg
 20 25 30
 Ile Asn Ile Asn Lys Asn Asp Ile Ile Met Lys Lys Thr Ile Leu Leu
 35 40 45
 Ala Ala Leu Gly Leu Ile Ser Leu Ser Ala Leu Gly Gln Asp Lys Pro
 50 55 60
 Gln Glu Glu Gly Phe Val Phe Thr Thr Val Lys Glu Asn Pro Ile Thr
 65 70 75 80
 Ser Ile Lys Asn Gln Asn Arg Ser Ser Thr Cys Trp Ser Phe Ser Ser
 85 90 95
 Leu Gly Phe Leu Glu Ser Glu Leu Leu Arg Thr Gly Lys Gly Glu Tyr
 100 105 110
 Asp Leu Ser Glu Met Phe Val Val His His Thr Met Val Asp Arg Ala
 115 120 125
 Val Asn Tyr Val Arg Tyr His Gly Asp Ser Ser Phe Ser Pro Gly Gly
 130 135 140
 Ser Phe Tyr Asp Ile Met Phe Cys Met Lys Asn Tyr Gly Leu Val Pro
 145 150 155 160
 Gln Asp Ala Met Pro Gly Ile Met Tyr Gly Asp Ser Leu Pro Val His
 165 170 175
 Asn Glu Leu Asp Ala Thr Ala Gly Ala Tyr Val Asn Ala Ile Ala Lys
 180 185 190
 Gly Asn Leu Lys Lys Leu Thr Pro Val Trp Lys Lys Gly Leu Cys Ala
 195 200 205

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Ile Tyr Asp Thr Tyr Leu Gly Gln Cys Pro Glu Lys Phe Thr Tyr Lys
 210                      215                      220
Gly Lys Glu Tyr Thr Pro Met Thr Phe Ala Gln Ser Leu Gly Leu Asn
 225                      230                      235                      240
Pro Asp Asp Tyr Val Ser Leu Thr Ser Tyr Thr His His Pro Phe Tyr
                      245                      250                      255
Ser Gln Phe Ala Ile Glu Ile Gln Asp Asn Trp Arg Asn Gly Leu Ser
 260                      265                      270
Tyr Asn Leu Pro Leu Asp Glu Phe Met Ala Val Met Asp Asn Ala Val
 275                      280                      285
Lys Asn Gly Tyr Thr Phe Ala Trp Gly Ser Asp Val Ser Glu Glu Gly
 290                      295                      300
Phe Thr Arg Asp Gly Ile Ala Val Val Pro Asp Ala Ala Lys Gly Ala
 305                      310                      315                      320
Glu Leu Thr Gly Ser Asp Met Ala Arg Trp Thr Gly Met Thr Ala Ala
                      325                      330                      335
Asp Lys Arg Lys Glu Leu Thr Ser Lys Pro Leu Pro Glu Met Lys Ile
 340                      345                      350
Thr Gln Glu Met Arg Gln Thr Ala Phe Asp Asn Trp Glu Thr Thr Asp
 355                      360                      365
Asp His Gly Met Ile Ile Tyr Gly Ile Ala Lys Asp Gln Asn Gly Lys
 370                      375                      380
Glu Tyr Phe Met Val Lys Asn Ser Trp Gly Thr Asn Asn Lys Tyr Lys
 385                      390                      395                      400
Gly Thr Trp Tyr Ala Ser Lys Ala Phe Val Ala Tyr Lys Thr Met Asn
                      405                      410                      415
Ile Leu Val His Lys Asp Ala Leu Pro Lys Asp Ile Ala Lys Lys Leu
 420                      425                      430
Gly Ile Lys
 435

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<210> 8057
<211> 62
<212> PRT
<213> B.fragilis

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<400> 8057
Ala Gly Lys Leu Asn Ala Pro Ala Ser Lys Ser Arg Val Thr Cys Leu
 1                      5                      10                      15
Val Ile Phe Asn Ile Thr Ile Leu Phe Trp Val Asn Asn Lys Gly Phe
 20                      25                      30
Val Trp Phe Phe Tyr Ile Leu Pro Phe Leu Leu Ile Ile Leu Ser Tyr
 35                      40                      45
Phe Phe Lys Asn Gly Leu Val Leu Ala Glu Leu Gly Glu Met
 50                      55                      60

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<210> 8058
<211> 250
<212> PRT
<213> B.fragilis

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<400> 8058
Lys Pro Leu Arg Thr Leu Val Phe Leu Phe Gly Val Ser Gly Thr Ile
 1                      5                      10                      15
Asn Lys Ile Tyr Val Lys Asp Gly Ala Gln Val Arg Ala Gly Gln Leu
 20                      25                      30
Leu Ala Glu Leu Asp Pro Thr Asp Tyr Gln Val Gln Leu Asp Ala Thr
 35                      40                      45
Glu Ala Glu Tyr Arg Gln Val Lys Ala Glu Ala Glu Arg Val Met Ala

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      50              55              60
Leu Tyr Lys Glu Asn Gly Thr Thr Pro Asn Ala Asn Asp Lys Ala Val
65              70              75              80
Tyr Gly Leu Lys Gln Ile Thr Ala Lys Tyr Lys His His Gln Asp Gln
      85              90              95
Leu Ala Tyr Thr Arg Leu Tyr Ala Pro Phe Ser Gly Tyr Val Gln Lys
      100              105              110
Arg Leu Phe Glu Ala His Glu Thr Ile Gly Ala Gly Met Pro Val Ile
      115              120              125
Ser Met Val Ser Ala Gly Ala Pro Glu Val Glu Ile Asn Leu Pro Ala
      130              135              140
Ala Glu Tyr Ile Arg Arg Asn Arg Phe Asn Arg Tyr His Cys Thr Phe
145              150              155              160
Asp Ile Tyr Pro Gly Glu Thr Tyr Pro Leu Gln Leu Ile Ser Val Thr
      165              170              175
Pro Lys Ala Asn Ala Asn Gln Leu Tyr Thr Met Arg Leu Gln Leu Ile
      180              185              190
Pro Gly Lys Gln Ala Val Pro Ser Pro Gly Met Asn Ala Met Val Thr
      195              200              205
Ile Phe Cys Asp Thr Asp Arg Ser Gly Thr Leu Ser Val Pro Thr Ser
      210              215              220
Ala Ile Leu Gln Lys Asp Gly Lys Ser Tyr Val Phe Ile Tyr Asn Glu
225              230              235              240
Pro His Arg Arg Arg Ala Arg Thr Asn Leu
      245              250

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<210> 8059
 <211> 323
 <212> PRT
 <213> B.fragilis

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<400> 8059
Ile Cys Arg Leu Ile Val Asn Arg Ile Val Asn Ser Lys Asn Leu Thr
1              5              10              15
Thr Asp Tyr Trp Leu Leu Thr Cys Arg Asn Thr Asn Thr Lys Ile Asn
      20              25              30
Asn Met Ser Leu Lys Ile Val Val Leu Ala Lys Gln Val Pro Asp Thr
      35              40              45
Arg Asn Val Gly Lys Asp Ala Met Lys Ala Asp Gly Thr Ile Asn Arg
      50              55              60
Ala Ala Leu Pro Ala Ile Phe Asn Pro Glu Asp Leu Asn Ala Leu Glu
65              70              75              80
Gln Ala Leu Arg Leu Lys Asp Ala His Pro Gly Ser Thr Val Thr Ile
      85              90              95
Leu Thr Met Gly Pro Gly Arg Ala Ala Asp Ile Ile Arg Glu Gly Leu
      100              105              110
Phe Arg Gly Ala Asp Asn Gly Tyr Leu Leu Thr Asp Arg Ala Phe Ala
      115              120              125
Gly Ala Asp Thr Leu Ala Thr Ser Tyr Ala Leu Ala Thr Ala Ile Lys
      130              135              140
Lys Ile Gly Glu Tyr Asp Ile Ile Ile Gly Gly Arg Gln Ala Ile Asp
145              150              155              160
Gly Asp Thr Ala Gln Val Gly Pro Gln Val Ala Glu Lys Leu Gly Leu
      165              170              175
Thr Gln Ile Thr Tyr Ala Glu Glu Ile Leu Lys Val Gly Asp Gly Ser
      180              185              190
Ile Thr Val Lys Arg His Ile Asp Gly Gly Val Glu Thr Val Glu Gly
      195              200              205
Pro Leu Pro Ile Val Ile Thr Val Asn Gly Ser Ala Ala Pro Cys Arg

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      210                      215                      220
Pro Arg Asn Ala Lys Leu Val Gln Lys Tyr Lys His Ala Lys Thr Ile
225                      230                      235                      240
Thr Glu Lys Gln Gln Gly Asn Leu Asp Tyr Thr Asp Leu Tyr Asp Thr
      245                      250                      255
Arg Asp Tyr Leu Asn Leu Val Glu Trp Ser Val Ala Asp Val Asn Gly
      260                      265                      270
Asp Leu Lys Gln Cys Gly Leu Ser Gly Ser Pro Thr Lys Val Lys Ala
      275                      280                      285
Ile Gln Asn Ile Val Phe Gln Ala Lys Glu Ser Lys Thr Ile Ser Gly
      290                      295                      300
Ser Asp Arg Glu Val Glu Glu Leu Ile Val Glu Leu Leu Glu Asn His
305                      310                      315                      320
Thr Ile Gly

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<210> 8060

<211> 1348

<212> PRT

<213> B.fragilis

<400> 8060

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Ser Ile Lys Arg Lys Thr Ile Met Arg Lys Ile Thr Leu Gly Leu Ile
1                      5                      10                      15
Leu Cys Ser Met Val Thr Leu Cys Phe Ala Gly Gln Arg Pro Leu Glu
      20                      25                      30
Gly Phe Lys Tyr Ala Ser Glu Lys Ala Pro Val Gly Asn Glu Trp Glu
      35                      40                      45
Ser Pro Glu Asn Ile Ala Leu Asn Lys Glu Gln Pro Arg Ala Trp Phe
      50                      55                      60
Phe Ser Phe Gln Asp Val Glu Ser Ala Arg Lys Val Leu Pro Glu Asn
      65                      70                      75                      80
Ser Lys Tyr Trp Leu Ser Leu Asn Gly Asp Trp Lys Phe Asn Trp Ala
      85                      90                      95
Pro Asp Pro Asp Ser Arg Pro Lys Asp Phe Tyr Gln Thr Thr Phe Asp
      100                      105                      110
Val Ser Gly Trp Asp Asn Ile Pro Val Pro Ser Ser Trp Asn Ile Tyr
      115                      120                      125
Gly Ile Gln Lys Asp Gly Ser Leu Lys Tyr Gly Val Pro Ile Tyr Val
      130                      135                      140
Asn Gln Pro Val Ile Phe Met His Lys Val Lys Val Asp Asp Trp Arg
      145                      150                      155                      160
Gly Gly Val Met Arg Thr Pro Pro Thr Asn Trp Thr Thr Tyr Lys Tyr
      165                      170                      175
Arg Asn Glu Val Gly Ser Tyr Arg Arg Asp Phe Asp Ile Pro Gln Asp
      180                      185                      190
Trp Asp Gly Arg Glu Val Phe Ile Asn Phe Asp Gly Val Asp Ser Phe
      195                      200                      205
Phe Tyr Leu Trp Ile Asn Gly Gln Tyr Val Gly Phe Ser Lys Asn Ser
      210                      215                      220
Arg Asn Thr Ala Ser Phe Asn Ile Thr Pro Tyr Leu Gln Lys Gly Lys
      225                      230                      235                      240
Asn Thr Val Ala Ala Glu Val Tyr Arg Ser Ser Asp Gly Ser Phe Leu
      245                      250                      255
Glu Ala Gln Asp Met Phe Arg Leu Pro Gly Ile Phe Arg Thr Val Ala
      260                      265                      270
Leu Tyr Ser Thr Pro Lys Val Gln Val Arg Asp Leu Val Val Ile Pro
      275                      280                      285
Asp Leu Asp Glu Thr Tyr Thr Asn Gly Ser Leu Ala Ile Ser Ala Asp

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	290					295					300				
Ile 305	Arg	Asn	Phe	Gly	Lys	Lys	Ala	Ala	Lys	Gly	Tyr	Gln	Met	Ala	Tyr
Thr 310	Leu	Tyr	Ala	Asn	Lys	Leu	Tyr	Ser	Asp	Glu	Asn	Thr	Pro	Val	Ala
				325					330					335	
Asn 340	Ala	Val	Ala	Ser	Ala	Thr	Val	Asn	Leu	Val	Asn	Pro	Asn	Glu	Thr
			340					345					350		
Val 355	Glu	Ala	Glu	Lys	Ala	Ile	Met	Asn	Val	Gln	Ser	Pro	Asn	Lys	Trp
			355				360					365			
Ser 370	Ala	Glu	Phe	Pro	His	Leu	Tyr	Thr	Leu	Val	Ala	Glu	Leu	Lys	Asp
						375					380				
Lys 385	Lys	Gly	Lys	Thr	Ile	Glu	Thr	Val	Ser	Thr	Thr	Val	Gly	Phe	Arg
					390					395					400
Lys 405	Val	Glu	Ile	Lys	Asp	Thr	Pro	Ala	Ser	Ala	Asp	Glu	Phe	Gly	Leu
				405					410					415	
Ala 420	Gly	Arg	Tyr	Tyr	Tyr	Val	Asn	Gly	Lys	Thr	Val	Lys	Leu	Lys	Gly
			420					425					430		
Val 435	Asn	Arg	His	Glu	Ser	Asn	Pro	Ala	Val	Gly	His	Ala	Ile	Thr	Arg
			435				440					445			
Glu 450	Met	Met	Glu	Lys	Glu	Val	Met	Leu	Met	Lys	Arg	Ala	Asn	Ile	Asn
						455					460				
His 465	Val	Arg	Asn	Ser	His	Tyr	Pro	Asp	Asp	Pro	Tyr	Trp	Tyr	Tyr	Leu
					470					475					480
Cys 485	Asn	Lys	Tyr	Gly	Leu	Tyr	Leu	Glu	Asp	Glu	Ala	Asn	Ile	Glu	Ser
				485					490					495	
His 500	Glu	Tyr	Tyr	Tyr	Gly	Ala	Ala	Ser	Leu	Ser	His	Pro	Val	Glu	Trp
			500					505					510		
Lys 515	Asn	Ala	His	Val	Ala	Arg	Val	Met	Glu	Met	Val	His	Ala	Asn	Val
			515				520					525			
Asn 530	Asn	Pro	Ser	Ile	Val	Ile	Trp	Ser	Leu	Gly	Asn	Glu	Ala	Gly	Pro
						535					540				
Gly 545	Lys	Asn	Phe	Val	Ala	Ala	Tyr	Asp	Ala	Leu	Lys	Ala	Phe	Asp	Leu
					550					555					560
Ser 565	Arg	Pro	Val	Gln	Tyr	Glu	Arg	Asn	Asn	Asp	Ile	Val	Asp	Met	Gly
				565					570					575	
Ser 580	Asn	Gln	Tyr	Pro	Ser	Ile	Gly	Trp	Met	Arg	Gly	Ala	Val	Lys	Gly
			580					585					590		
Asn 595	Tyr	Asp	Ile	Lys	Tyr	Pro	Phe	His	Val	Ser	Glu	Tyr	Ala	His	Ser
			595				600					605			
Met 610	Gly	Asn	Ala	Cys	Gly	Asn	Leu	Val	Asp	Tyr	Trp	Glu	Ala	Ile	Glu
					615						620				
Ser 625	Thr	Asn	Phe	Phe	Cys	Gly	Gly	Ala	Ile	Trp	Asp	Trp	Val	Asp	Gln
					630					635					640
Ser 645	Met	Tyr	Asn	Tyr	Asp	Lys	Lys	Thr	Gly	Glu	Arg	Tyr	Leu	Ala	Tyr
				645					650					655	

Val Lys Ile Gln Phe Leu Leu Lys Asp Asn Met Pro Trp Ala Asp Lys
 770 775 780
 Asn Phe Ala Gln Ala Glu Glu Gln Ile Leu Val Lys Glu Ala Thr Ala
 785 790 795 800
 Arg Pro Ser Ile Ala Thr Val Ala Ala Glu Gly Asp Lys Pro Glu Val
 805 810 815
 Met Met Thr Lys Ala Ser Asp Ile Ile Thr Ile Lys Gly Asn Gly Tyr
 820 825 830
 Thr Ala Gln Phe Asp Ile Lys Thr Gly Thr Ile Tyr Ser Leu Thr Tyr
 835 840 845
 Gly Asn Glu Lys Val Ile Thr Asp Gly Asn Gly Pro Lys Leu Asp Ala
 850 855 860
 Leu Arg Ala Phe Thr Asn Asn Asp Asn Trp Phe Tyr Ser Gln Trp Phe
 865 870 875 880
 Asp Asn Gly Leu His Asn Leu Lys His Ser Ala Thr Gly Phe Asn Met
 885 890 895
 Thr Thr Lys Glu Asp Gly Thr Val Val Leu Ser Phe Thr Val Gln Ser
 900 905 910
 Gln Ala Pro Asn Ala Ala Lys Ile Leu Gly Gly Thr Ser Ser Gly Lys
 915 920 925
 Asn Lys Ile Glu Glu Leu Thr Asp Lys Lys Phe Gly Ser Ser Asp Phe
 930 935 940
 Lys Phe Thr Thr Asn Gln Val Trp Thr Val Tyr Lys Asp Gly Ser Ile
 945 950 955 960
 Glu Leu Glu Ala Ser Ile Thr Ser Asn Gln Pro Ser Leu Val Leu Pro
 965 970 975
 Arg Leu Gly Tyr Met Val Arg Val Pro Gln Gln Tyr Ala Asn Phe Thr
 980 985 990
 Tyr Tyr Gly Arg Gly Pro Ile Asp Asn Tyr Ala Asp Arg Lys Val Gly
 995 1000 1005
 Gln Phe Ile Glu Gln His Lys Asn Thr Val Ala Gly Glu Phe Val Asn
 1010 1015 1020
 Phe Pro Lys Pro Gln Asp Met Gly Asn His Glu Asp Val Arg Trp Cys
 1025 1030 1035 1040
 Ala Leu Thr Asn Asn Ala Gly Asn Gly Ala Val Phe Ile Ala Thr Asp
 1045 1050 1055
 Arg Leu Ser Thr Ser Ala Leu Pro Tyr Ser Ala Leu Asp Leu Ile Leu
 1060 1065 1070
 Ala Ser His Pro Tyr Gln Leu Pro Lys Ala Gly Asp Thr Tyr Leu His
 1075 1080 1085
 Leu Asp Ala Ala Val Thr Gly Leu Gly Gly Asn Ser Cys Gly Gln Gly
 1090 1095 1100
 Gly Pro Leu Glu Gln Asp Arg Val Phe Ala Ser His His Asn Thr Gly
 1105 1110 1115 1120
 Phe Ile Ile Arg Pro Ala Gly Lys Asp Leu Thr Val Thr Ala Asn Val
 1125 1130 1135
 Ala Pro Ala Gly Glu Met Pro Leu Ser Ile Thr Arg Asn Arg Ala Gly
 1140 1145 1150
 Val Val Ser Val Ser Ser Gln Lys Lys Asp Ala Val Ile Leu Tyr Thr
 1155 1160 1165
 Val Asp Lys Ser Lys Ser Lys Thr Tyr Thr Glu Pro Ile Ala Leu Arg
 1170 1175 1180
 Asn Gly Gly Thr Val Thr Ala Trp Phe Lys Asp Ala Pro Phe Ile Lys
 1185 1190 1195 1200
 Ala Ser Met Thr Phe Asp Lys Ile Glu Ser Ile Gln Thr Glu Val Ile
 1205 1210 1215
 Tyr Ala Ser Ser Glu Glu Ser Asp Gly Gly Glu Ala Lys Asn Leu Thr
 1220 1225 1230
 Asp Gly Asp Pro Asn Thr Ile Trp His Thr Met Phe Ser Val Thr Val

1235 1240 1245
 Ala Lys His Pro His Trp Val Asp Leu Asp Ala Gly Glu Val Lys Thr
 1250 1255 1260
 Ile Lys Gly Phe Thr Tyr Leu Pro Arg Gln Asp Ser Ser Asn Gly Asn
 1265 1270 1275 1280
 Val Lys Asp Tyr Thr Ile His Val Ser Met Asp Gly Lys Glu Trp Gly
 1285 1290 1295
 Glu Pro Ile Leu Lys Gly Thr Phe Ala Arg Asp Leu Lys Glu Lys Lys
 1300 1305 1310
 Val Met Phe Asp Lys Pro Val Lys Ala Arg Tyr Ile Arg Phe Thr Ala
 1315 1320 1325
 Leu Ser Glu Gln Arg Gly Gln Asp Tyr Ala Ser Gly Ala Glu Leu Thr
 1330 1335 1340
 Ile Leu Ala Glu
 1345

<210> 8061
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 8061
 Glu Val Phe Gly Met Phe Met Val Trp Gly Phe Arg Gln Arg Ile Phe
 1 5 10 15
 Asp Ser Pro Leu Ser Ile Arg Lys Gly Ile Tyr Tyr Pro Leu Ser Lys
 20 25 30
 Glu Ala Gly Phe Lys Thr Ser Cys Leu Ser Pro Asn Lys Cys Thr Asn
 35 40 45
 Asn Ser Ile Ile Tyr Phe Phe Ala Arg Glu Ala Asp Arg Cys Val Phe
 50 55 60
 Ile Lys Glu Asp Ser Leu Thr Pro Gly Gln Asn Leu Trp
 65 70 75

<210> 8062
 <211> 406
 <212> PRT
 <213> B.fragilis

<400> 8062
 Asp Lys Gly Gly Ile Phe Val Asn Arg His Ser Arg Arg Thr Phe Trp
 1 5 10 15
 Ser Met Lys Gln Ile Asn Lys Gln Lys Leu Leu Glu Gln Met Val Tyr
 20 25 30
 Leu Val Ile Trp Leu Thr Val Ile Ser Val Pro Leu Val Gly Asp Tyr
 35 40 45
 Leu Phe Ala Ser Ile Ser Pro Val His Thr Phe Ser Trp Gln Thr Ile
 50 55 60
 Arg Met Ala Trp Leu Leu Thr Leu Pro Phe Ile Leu Leu Phe Val Val
 65 70 75 80
 Asn Asn Tyr Phe Leu Ala Pro Arg Leu Leu Leu Arg Lys Arg Tyr Trp
 85 90 95
 Ala Tyr Ala Leu Ser Leu Ala Gly Val Val Thr Leu Leu Phe Ile Leu
 100 105 110
 Tyr Pro Ser Ile Asn Pro Pro Gln His Lys Gln Phe Gln Asn Leu Met
 115 120 125
 Pro Met Gln Pro Arg Arg Tyr Pro Glu Gly Lys Val Leu Pro Asp Arg
 130 135 140
 Glu Arg Glu Phe Pro Asn Thr Phe Pro Glu His Ser Ser Pro Leu Leu
 145 150 155 160

Leu Pro Lys Gln Glu Leu Asp Met Arg Trp Arg Gly Pro His Pro Leu
 165 170 175
 Pro Gly Tyr Phe Leu Gly Arg Leu Ser Leu Ala Leu Leu Val Val Gly
 180 185 190
 Ile Asn Val Ala Ile Lys Leu Leu Phe Lys Ser Met Arg Asp Glu Glu
 195 200 205
 Ala Leu Lys Glu Leu Glu His Gln His Leu Gln Ser Glu Leu Gln Tyr
 210 215 220
 Leu Lys Tyr Gln Ile Asn Pro His Phe Phe Met Asn Thr Leu Asn Asn
 225 230 235 240
 Ile His Ala Leu Val Asp Met Asp Ala Gly Lys Ala Lys Arg Thr Ile
 245 250 255
 Val Glu Leu Ser Lys Leu Met Arg Tyr Val Leu Tyr Glu Ala Ser Asn
 260 265 270
 Arg Thr Ile Leu Leu Ser Arg Glu Ile Gln Phe Leu Asp Asn Tyr Ile
 275 280 285
 Ala Leu Met Lys Leu Arg Tyr Thr Gly Arg Val Arg Ile Glu Cys Cys
 290 295 300
 Met Pro Asp Glu Val Pro Glu Val Gln Ile Pro Pro Leu Leu Phe Ile
 305 310 315 320
 Ser Phe Val Glu Asn Ala Phe Lys His Gly Val Ser Tyr Gln Glu Glu
 325 330 335
 Ser Phe Ile Arg Val Phe Met Ser Val Glu Asp Gly Arg Leu Val Phe
 340 345 350
 Arg Cys Ser Asn Ser Asn His Gly Arg Ser Val Glu Gln His His Gly
 355 360 365
 Ile Gly Leu Glu Asn Ile Arg Lys Arg Leu Arg Leu Leu Phe Gly Gln
 370 375 380
 Asp Tyr Thr Leu Ser Ile Asn Glu Arg Asp Asp Ser Phe Asn Val Leu
 385 390 395 400
 Leu Ile Ile Pro Leu Leu
 405

<210> 8063
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 8063
 Lys Ser Thr Met Gln Thr Glu Leu Ile Ile Val Ser Glu Tyr Cys His
 1 5 10 15
 Lys Cys His Ile Glu Pro Ser Phe Ile Asp Leu Leu Glu Glu Gly Gly
 20 25 30
 Leu Ile Glu Val Arg Thr Glu Gly Gly Glu His Tyr Leu Leu Ala Ser
 35 40 45
 Gln Leu Pro Asp Val Glu Arg Tyr Ser Arg Met Tyr Tyr Asp Leu Ser
 50 55 60
 Ile Asn Met Glu Gly Ile Asp Ala Ile His His Leu Leu Glu Arg Met
 65 70 75 80
 Glu Ile Met Arg Arg Glu Ile Ser Ser Leu Arg Asn Gln Leu Ile Val
 85 90 95
 Phe Lys Arg Glu Gly Ile Met Glu Asp Trp
 100 105

<210> 8064
 <211> 587
 <212> PRT
 <213> B.fragilis

<400> 8064

Pro Ile His Ile Ser Asp Ala Lys Ile Ile Ile Cys Trp Phe Lys Ser
 1 5 10 15
 His Ile Leu Asn Thr Lys His Leu Met Lys Ile Lys Tyr Leu Phe Tyr
 20 25 30
 Ile Gly Val Ala Thr Leu Ala Leu Ser Gly Cys Asn Asp Gly Phe Leu
 35 40 45
 Glu Arg Ala Pro Glu Ala Ile Asn Asp Lys Thr Phe Trp Asn Thr Thr
 50 55 60
 Gly Asp Leu Glu Thr Tyr Ala Asn Gln Phe Tyr Ser Tyr Leu Pro Gly
 65 70 75 80
 Gly Val Thr Ser Ile Ala Asp Gly Glu Ser Asp Asn Gln Val Pro Asn
 85 90 95
 Ser Ile Pro Gln Phe Phe Trp Asn Gln Leu Ser Thr Pro Ala Glu Ala
 100 105 110
 Ala Ser Trp Cys Asn Trp Ser Lys Gly Gly Trp Gln Pro Ile Arg Leu
 115 120 125
 Val Asn Tyr Phe Leu Thr His Tyr Gln Thr Val Ser Gly Lys Glu Ser
 130 135 140
 Glu Ile Asn Gln Tyr Val Ala Glu Val Arg Phe Phe Lys Ala Met Gln
 145 150 155 160
 Tyr Ala Gly Leu Met Arg Thr Phe Gly Asp Ile Pro Trp Leu Asp Lys
 165 170 175
 Asp Leu Gly Thr Gly Asp Thr Asp Ile Leu Tyr Gly Pro Lys Leu Lys
 180 185 190
 Arg Tyr Glu Val Met Asp Lys Ile Ile Glu Glu Phe Asp Phe Ala Ile
 195 200 205
 Gln Trp Leu Pro Glu Lys Pro Ala Thr Gly Arg Ile Gly Lys Asp Val
 210 215 220
 Ala Arg Gln Leu Lys Ala Arg Thr Cys Leu His Glu Gly Thr Tyr Tyr
 225 230 235 240
 Lys Tyr His Thr Glu Leu Gly Trp Ala Asp Lys Ala Asp Arg Leu Leu
 245 250 255
 Lys Met Ala Ala Asp Glu Thr Asp Ala Ile Met Ala Thr Gly Lys Tyr
 260 265 270
 Glu Ile Tyr Asn Thr Gly His Pro Glu Lys Asp Tyr Tyr Asp Val Phe
 275 280 285
 Val Met Glu Asp Lys Thr Asn Leu Lys Glu Ala Ile Leu Pro Val Thr
 290 295 300
 Tyr Leu Asp Gly Lys Arg Lys His Gly Met Ser Arg Thr Leu Ala Glu
 305 310 315 320
 Ala Asn Thr Gly Phe Ser Lys Asp Phe Val Glu Ser Tyr Leu Cys Leu
 325 330 335
 Asn Gly Lys Pro Ile Thr Gly Asn Asp Gln Tyr Lys Gly Asp Thr Asn
 340 345 350
 Met Lys Asp Glu Thr Thr Asp Arg Asp Pro Arg Leu Lys Gln Thr Ile
 355 360 365
 Leu Thr Trp Asp Phe Pro Thr Arg Val Thr Val Ala Thr Asn Asp Ser
 370 375 380
 Thr Tyr Ile Glu Lys Glu Glu Asp Phe Ile Ser Gln Tyr Cys Leu Thr
 385 390 395 400
 Gly Tyr Lys Ser Ile Lys Tyr Phe Ile Pro Thr Asp Lys Ala Phe Glu
 405 410 415
 Ala Asn Asn Asn Thr Tyr Asp Gly Ile Ala Tyr Arg Tyr Ala Glu Thr
 420 425 430
 Leu Leu Ile Asn Ala Glu Ala Lys Ala Glu Leu Gly Thr Ile Thr Gln
 435 440 445
 Ala Asp Leu Asn Lys Thr Ile Asn Val Leu Arg Asp Arg Ala Gly Met
 450 455 460

Pro His Leu Thr Leu Glu Val Gly Phe Thr Asp Pro Asn Trp Pro Ala
 465 470 475 480
 Trp Gly Tyr Ser Leu Thr Pro Leu Leu Gln Glu Ile Arg Arg Glu Arg
 485 490 495
 Arg Ile Glu Leu Ala Gly Glu Gly Phe Arg Trp Asp Asp Leu Ala Arg
 500 505 510
 Trp Lys Ala Gly Ala Ile Cys Asn Asn Val Lys Thr Tyr Ile Gly Lys
 515 520 525
 Arg Glu Pro Tyr Lys Glu Gly Gln Tyr Ala Ile Val Tyr Pro Ala Tyr
 530 535 540
 Thr Asn Asp Asn Tyr Ser Tyr Glu Ala Gly Lys Ser Arg Thr Trp Asn
 545 550 555 560
 Asp Arg Leu Tyr Leu Arg Pro Ile Pro Thr Gly Glu Leu Gln Arg Asn
 565 570 575
 Asp Asn Leu Leu Pro Gln Asn Pro Gly Trp Glu
 580 585

<210> 8065
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8065
 Gln Pro Val Val Ser Ser Lys Val Leu Ala Ile His Tyr Pro Val Asn
 1 5 10 15
 Tyr Gln Pro Ala Asn Leu Ser Lys Arg Leu Val Leu Thr Arg Asn Leu
 20 25 30
 Ser Glu Lys Cys Thr Ser Leu Arg Ile Leu Ser Asn Leu Ser Asp Ser
 35 40 45
 Tyr Asp His Glu Tyr Arg Val Ile Val Asn Phe Gln Ile Phe
 50 55 60

<210> 8066
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 8066
 Met Gly Phe Ala Pro Met Asn Asn Pro Lys Ile Ala Ile Ala Val Tyr
 1 5 10 15
 Val Glu Asn Gly Gly Phe Gly Ala Val Tyr Gly Val Pro Ile Gly Ala
 20 25 30
 Leu Met Met Glu Gln Tyr Leu Lys Gly Lys Leu Ser Pro Glu Asn Glu
 35 40 45
 Ile Arg Ala Glu Glu Tyr Ser Asn Arg Val Ile Met Tyr Gly Asn Glu
 50 55 60
 Glu Arg
 65

<210> 8067
 <211> 437
 <212> PRT
 <213> B.fragilis

<400> 8067
 Leu Cys Met Glu Thr Arg Ser Val Ser Leu Trp Lys Thr Leu Asp Trp
 1 5 10 15
 Val Thr Ile Val Ile Tyr Leu Leu Leu Ile Ile Gly Gly Trp Phe Ser
 20 25 30

Val Cys Gly Ala Ser Tyr Asp Tyr Gly Asp Arg Asp Phe Leu Asp Phe
 35 40 45
 Ser Thr Arg Ala Gly Arg Gln Phe Val Trp Ile Ile Cys Ser Phe Gly
 50 55 60
 Leu Gly Phe Ile Leu Leu Met Leu Glu Glu Arg Met Tyr Asp Met Phe
 65 70 75 80
 Ala Tyr Leu Ile Tyr Ile Gly Met Ile Leu Leu Leu Ile Val Thr Ile
 85 90 95
 Phe Ile Ala Pro Asp Thr Lys Gly Ser Arg Ser Trp Leu Ile Leu Gly
 100 105 110
 Pro Val Ser Leu Gln Pro Ala Glu Phe Ala Lys Phe Ala Thr Ala Leu
 115 120 125
 Ala Leu Ala Lys Phe Met Asn Ala Tyr Ser Phe Asn Ile Lys Lys Trp
 130 135 140
 Lys Cys Phe Leu Pro Leu Val Ala Phe Ile Leu Leu Pro Met Leu Leu
 145 150 155 160
 Ile Ile Leu Gln Lys Glu Thr Gly Ser Ala Leu Val Tyr Leu Ala Phe
 165 170 175
 Phe Leu Val Leu Tyr Arg Glu Gly Met Pro Gly Val Val Leu Phe Ser
 180 185 190
 Gly Val Cys Ala Val Val Tyr Phe Val Val Gly Ile Arg Phe Asp Gln
 195 200 205
 Val Phe Ile Ala Asp Thr Pro Thr Pro Ile Gly Glu Phe Ala Val Leu
 210 215 220
 Leu Met Ile Leu Leu Phe Ala Gly Ser Met Val Trp Val Tyr Arg Lys
 225 230 235 240
 Lys Trp Glu Pro Val Arg Asn Met Ile Gly Gly Ser Leu Leu Val Leu
 245 250 255
 Leu Ile Ala Tyr Leu Val Ser Glu Tyr Leu Ser Pro Phe Asn Leu Val
 260 265 270
 Trp Val Glu Trp Gly Leu Cys Val Val Thr Ile Gly Tyr Leu Leu Tyr
 275 280 285
 Leu Ser Leu Ser Glu Arg Gln Arg Ala Tyr Leu Leu Ile Gly Leu Phe
 290 295 300
 Ala Leu Gly Ser Ile Gly Phe Leu Tyr Ser Ser Asp Tyr Val Phe Asp
 305 310 315 320
 Asn Ile Leu Glu Pro His Gln Gln Ile Arg Leu Lys Val Val Leu Gly
 325 330 335
 Met Glu Glu Asp Leu Ala Gly Pro Gly Ser Asn Leu Asn Gln Ser Lys
 340 345 350
 Ile Ala Ile Gly Ser Gly Gly Leu Thr Gly Lys Gly Phe Leu Asn Gly
 355 360 365
 Thr Gln Thr Arg Leu Lys Tyr Gly Pro Lys Gln Asn Thr Asp Phe Phe
 370 375 380
 Phe Trp Thr Gly Gly Glu Glu Gln Gly Phe Val Val Arg Asp Pro Phe
 385 390 395 400
 Phe Val Phe Leu Gly Val Ile Leu Arg Phe Ile Ala Thr Glu Asn Gly
 405 410 415
 Lys Ile Phe Phe Trp Gly Gly Val Met Val Phe Arg Val Arg Thr Ile
 420 425 430
 Pro Cys Pro Ile Gly
 435

<210> 8068

<211> 346

<212> PRT

<213> B.fragilis

<400> 8068

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Phe Ile Leu Thr Ala Pro Ser Ala Met Arg Cys Asn Thr Gly Pro Leu
1           5           10           15
Lys Asp Leu Met Ile Asp Gly Ile Ile Gly Gly Val Gly Gly Val Ile
          20           25           30
Val Phe Leu Pro Asn Ile Leu Ile Leu Tyr Phe Cys Ile Ser Leu Met
          35           40           45
Glu Asp Ser Gly Tyr Met Ala Arg Ala Ala Phe Ile Met Asp Lys Ile
          50           55           60
Met His Lys Met Gly Leu His Gly Lys Ser Phe Ile Pro Leu Ile Met
65           70           75           80
Gly Phe Gly Cys Asn Val Pro Ala Ile Met Ala Ser Arg Thr Ile Glu
          85           90           95
Asn Arg Lys Ser Arg Leu Ile Thr Met Leu Val Asn Pro Leu Met Ser
          100          105          110
Cys Ser Ala Arg Leu Pro Ile Tyr Leu Leu Leu Val Gly Ala Phe Phe
          115          120          125
Pro Lys Asn Gly Ser Leu Val Leu Leu Ala Ile Tyr Ala Ile Gly Ile
          130          135          140
Ala Leu Ala Val Ile Met Ala Arg Leu Phe Ser Arg Phe Leu Val Lys
145          150          155          160
Gly Asp Asp Thr Pro Phe Val Met Glu Leu Pro Pro Tyr Arg Met Pro
          165          170          175
Thr Met Lys Ser Ile Phe Arg His Thr Trp Glu Lys Gly Ala Gln Tyr
          180          185          190
Leu Lys Lys Met Gly Gly Ile Ile Met Ile Ala Ser Ile Ile Ile Trp
          195          200          205
Phe Leu Gly Tyr Tyr Pro Asp His Asp Ala Tyr Pro Thr Gln Ala Glu
          210          215          220
Gln Gln Glu Asn Ser Tyr Ile Gly Gln Ile Gly Gln Ala Val Glu Pro
225          230          235          240
Val Leu Lys Pro Leu Gly Phe Asp Trp Lys Leu Ser Ile Gly Leu Leu
          245          250          255
Ser Gly Val Gly Ala Lys Glu Leu Val Val Ser Thr Leu Gly Val Leu
          260          265          270
Tyr Thr Asn Asp Ala Asp Ala Asp Val Val Ser Leu Ala Glu Arg Ile
          275          280          285
Pro Ile Thr Pro Leu Ala Ala Phe Ser Tyr Met Leu Phe Val Leu Ile
          290          295          300
Tyr Phe Pro Cys Ile Ala Thr Leu Val Ala Ile Lys Gln Glu Ser Gly
305          310          315          320
Ser Trp Lys Trp Ala Ile Phe Thr Ala Gly Tyr Thr Thr Ala Leu Ala
          325          330          335
Trp Leu Val Ser Phe Ala Val Tyr Gln Ile
          340          345

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<210> 8069

<211> 94

<212> PRT

<213> B.fragilis

<400> 8069

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Leu Glu Val Gly Tyr Leu His Gly Arg Ile Tyr His Gly Val Gly Met
1           5           10           15
Ala Cys Phe Ile Cys Arg Leu Ser Asp Met Arg Asn Val Phe Met Asn
          20           25           30
Trp Gln Glu Trp Val Val Gly Leu Leu Ile Val Leu Cys Val Thr Arg
          35           40           45
Ile Leu Tyr Gly Ile Tyr Leu Phe Phe Arg Arg Val Lys Glu Asn Asp
          50           55           60

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Asn Pro Cys Ala Ser Cys Ala Ser Gly Cys Glu Leu Lys Asp Met Met
 65 70 75 80
 Glu Lys Asn Gln Lys Glu Cys Ser Phe Lys Lys Lys Ile Thr
 85 90

<210> 8070

<211> 830

<212> PRT

<213> B.fragilis

<400> 8070

Tyr Ile Lys Ser Ile Cys Tyr Leu Tyr Ile Cys Val Tyr Lys Tyr Gly
 1 5 10 15
 Ile Thr Met Asn Arg His Lys Leu Ala Phe Ser Leu Ile Gly Ile Phe
 20 25 30
 Ile Val Gln Leu Ser Tyr Ala Gly Tyr Phe Lys His Ile Gly Arg Glu
 35 40 45
 Glu Gly Leu Ser Gln Ser Ser Val Met Ala Ile Tyr Gln Asp Lys Leu
 50 55 60
 Gly Arg Met Trp Phe Gly Thr Arg Glu Gly Val Asn Ile Tyr Asn Ser
 65 70 75 80
 Asn Lys Met Ala Val Tyr Lys Ala Trp Ile Gln Asn Gly Asn Arg Pro
 85 90 95
 Asp Gln Lys Ile Leu Ile Gly Asn Glu Val Ser Ala Ile Thr Gly Ser
 100 105 110
 Gln Asn Gly Asp Val Phe Leu Ile Val Asp His Ala Leu Leu Lys Tyr
 115 120 125
 Asp Ile Arg Lys Glu Thr Phe Glu Arg Leu Arg Gln Gly Ser Val Tyr
 130 135 140
 Ala Leu Thr Ser His Ala Gly Glu Ile Trp Cys Ala Gly His Asp Ser
 145 150 155 160
 Ile Phe Arg Tyr Asn Pro Gln Asn Asn Gln Leu Asp Phe Gln Leu Lys
 165 170 175
 Thr Gly Ile Ser Ser Ile Asn Tyr Leu Thr Ile Asn Gly Asn Arg Phe
 180 185 190
 Tyr Ile Gly Ala Lys Glu Gly Leu Tyr Thr Thr Glu Asn Lys Gly Arg
 195 200 205
 Val Gln Cys Leu Ile Pro Lys Val Asp Val Tyr Arg Ile Phe Gln Ser
 210 215 220
 Ser Cys Gln Glu Leu Trp Val Gly Cys Arg Thr Gln Gly Leu Tyr Arg
 225 230 235 240
 Ile Asn Arg Asn Gly Arg Ile Asn Arg Ile Pro Tyr Asp Pro Ser Ser
 245 250 255
 Pro Asn Gly Ile Ser Ser Glu Gln Ile Arg Glu Phe Val Glu Asp Gln
 260 265 270
 Gln Gly Asn Ile Trp Phe Gly Thr Phe Asp Gly Leu Gln Lys Tyr Asp
 275 280 285
 Pro Ser Thr Gln Thr Tyr Ser Leu Ile Lys Gln Glu Gln Arg Pro Gly
 290 295 300
 Gly Leu Ser His Ser Ser Ile Phe Ser Leu Tyr Gln Asp Val Gln Gly
 305 310 315 320
 Thr Ile Trp Ile Gly Ser Tyr Tyr Gly Gly Val Asn Tyr Phe Asn Pro
 325 330 335
 Asp Asn Asn Ala Phe Asn Tyr Tyr Thr Tyr Asn Pro Asp Arg Ser Asp
 340 345 350
 Cys Leu Asn Tyr Pro Phe Ala Gly Ala Met Thr Glu Asp Lys Asp His
 355 360 365
 His Leu Trp Ile Cys Thr Asp Gly Gly Gly Leu Ala Cys Leu Asp Arg
 370 375 380

Gln Ala Gly His Phe Thr Thr Tyr Thr Ala Gly Gly Pro Asn Ser Leu
 385 390 395 400
 Pro His Asn Asn Leu Lys Ser Ile Cys Tyr Asp Pro Lys Arg Asp Cys
 405 410 415
 Leu Tyr Ile Gly Thr His Met Gly Gly Leu Ser Arg Phe Asp Arg Lys
 420 425 430
 Thr Gly Arg Phe Tyr Asn Tyr Leu Asn His Ser Thr Lys Gly Leu Lys
 435 440 445
 Glu Pro Asn Asp Val Ile Phe Gln Val Ser Phe Tyr Asn Asp Gln Leu
 450 455 460
 Ile Val Ser Ala Arg Asn Gly Val Phe Ser Met Asn Pro Asp Thr Asn
 465 470 475 480
 Glu Phe Arg Leu Leu Tyr Asp Gly Tyr Tyr Tyr Gln Thr Phe Thr Ile
 485 490 495
 Asp Pro Lys Gly Phe Leu Trp Leu Ser Ala Gly Thr Asn Leu Tyr Ser
 500 505 510
 Ile Asn Leu Lys His Pro Glu Glu Val Lys Ser Phe Ser Leu Pro Ala
 515 520 525
 Ser Ile Gly Gln Phe Gly Ile Ser Lys Ile Leu Lys Gly Asn Asn Gln
 530 535 540
 Tyr Leu Tyr Ile Ala Thr Leu Gly Ser Gly Leu Phe Cys Tyr Asn Glu
 545 550 555 560
 Gln Thr Gln Thr Cys Ile Asn Tyr Thr Pro Glu Gln Asn Gln Leu Leu
 565 570 575
 Ser Asn Tyr Cys Tyr Asn Leu Leu Gln Thr Ser Thr Asp Asn Ile Leu
 580 585 590
 Ile Thr Ser Asp Arg Gly Ile Thr Leu Phe Asn Pro Thr Thr Glu Ser
 595 600 605
 Phe Arg Ser Ile Glu Leu Asp Asn Gly Leu Ser Leu Ser Ser Ile Ile
 610 615 620
 Asn Gly Cys Gly Val Trp Met Cys Ser Asp His Thr Ile Phe Ile Gly
 625 630 635 640
 Gly Thr Gly Gly Leu Ser Ser Phe Leu Glu Lys Asp Leu Asn Lys Glu
 645 650 655
 Tyr Pro Lys Pro Lys Leu Tyr Phe Ser Ser Leu Ser Val Asn Asn Ala
 660 665 670
 Arg Ile Ser Pro Asp Asp Lys Ser Arg Ile Leu Thr Glu Gly Leu Pro
 675 680 685
 Phe Val Arg Glu Ile Asn Leu Asn Ala Thr Gln Asn Asn Leu Thr Val
 690 695 700
 Glu Phe Ala Ser Ser Asn Tyr Val Asp Ile Leu Asn Asn Thr Trp Tyr
 705 710 715 720
 Glu Tyr Gln Leu Glu Gly Phe Asp Lys Gln Trp Ser Leu Thr Ser Gln
 725 730 735
 Thr Ser Leu Lys Tyr Thr Asn Leu Asp Pro Gly Asp Tyr Val Leu His
 740 745 750
 Val Arg Gln Lys Gly Asn Ser Leu Lys Met Arg Lys Ala Gln Glu Ile
 755 760 765
 Leu Leu Gln Ile His Ile Asn Thr Pro Trp Tyr Leu Thr Trp Trp Ala
 770 775 780
 Trp Leu Ser Tyr Ile Thr Ile Ser Ile Ser Val Thr Tyr Phe Ile Trp
 785 790 795 800
 Arg Glu Lys Ser Ser Arg Arg Thr Leu Ala Ile Leu Arg Gln Ser Leu
 805 810 815
 Ser Ser Leu Thr Tyr His Gln Ile Leu Phe Asn Pro Ala Ile
 820 825 830

<210> 8071

<211> 247

<212> PRT

<213> B.fragilis

<400> 8071

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Met Ile Lys Ser Ile Leu Ile Ala Leu Cys Thr Val Leu Leu Cys Trp
1           5           10           15
Asn Ser Ile Pro Ala Glu Ala Gln Thr Pro Gln Asp Ser Val Arg Phe
          20           25           30
Ile Gly Tyr Leu Pro Val Arg His Thr Asp Pro Thr Lys Trp Ile Thr
          35           40           45
Arg Tyr Gln Ser Glu Ile Asp Arg Tyr Gln Thr Glu Asn Gln Met Leu
          50           55           60
Lys Asp Thr Ser Cys Asp Val Leu Phe Leu Gly Ser Ser Ser Ile Asn
65           70           75           80
Leu Trp Asp Asn Ile Tyr Arg Asp Met Ala Pro Leu Lys Ile Leu Arg
          85           90           95
Arg Ser Tyr Gly Gly Ala Ala Leu Arg Asp Met Leu Tyr Asn Tyr Asp
          100          105          110
Val Ile Ala Arg Gly Tyr His Pro Arg Ser Ile Val Ile Tyr Val Glu
          115          120          125
Asn Asp Leu Ala Gly Thr Pro Glu Asp Leu Thr Val Gly Glu Thr Phe
          130          135          140
Asp Phe Phe Arg Leu Leu Thr Asn Arg Leu Gln Arg Asp Tyr Pro Asp
145          150          155          160
Ile Pro Ile Phe Ile Leu Ser Tyr Lys Pro Ser Leu Ala Arg Lys Glu
          165          170          175
Met Ile Pro Lys His Glu Ile Ile Asn Ala Leu Leu Gln Glu Tyr Ala
          180          185          190
Ser Lys Arg Gly Gly Leu Thr Tyr Ile Asp Val Ala Ser Cys Leu Tyr
          195          200          205
Asp Asn Asn Gly Lys Leu Arg Lys Asp Ile Phe Lys Gln Asp Gly Leu
          210          215          220
His Met Asn Gln Asn Gly Tyr Asp Leu Trp Thr Ala Ile Leu Lys Pro
225          230          235          240
Lys Ile Leu Glu Ser Ile Arg
          245

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<210> 8072

<211> 189

<212> PRT

<213> B.fragilis

<400> 8072

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Lys Ala Ser Asn Cys Thr Ser Ala Ile Arg Val Glu Lys Arg Val Arg
1           5           10           15
Tyr Phe Gly His Asn Thr Leu Ser Ser Asp Ser Ile Pro Trp Gly Leu
          20           25           30
Lys Asp Glu Tyr Cys Pro Ser Tyr Phe Asn Glu Met Arg Asn Leu Thr
          35           40           45
Leu Val Asn Arg Glu Tyr Cys Ile Arg Asn Pro Lys His Tyr Lys Gly
          50           55           60
Tyr Gly Pro Asp Cys Trp Gly Leu Thr Ala Ser Tyr Ser Val Asp Gly
65           70           75           80
Tyr Ala Ala His Gly Pro Leu Glu Arg Asp Asp Arg Gly Val Ile Ser
          85           90           95
Pro Thr Ala Ala Leu Ser Ser Ile Val Tyr Thr Pro Asp Gln Ser Leu
          100          105          110
Gln Val Met His His Leu Tyr Glu Met Gly Asp Lys Val Phe Gly Pro
          115          120          125

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Tyr Gly Phe Tyr Asp Ala Phe Ser Glu Thr Ala Asp Trp Tyr Pro Lys
 130 135 140
 Arg Tyr Leu Ala Ile Asp Gln Gly Pro Ile Ala Val Met Ile Glu Asn
 145 150 155 160
 Tyr Arg Thr Gly Leu Leu Trp Lys Leu Phe Met Ser His Pro Asp Val
 165 170 175
 Gln Asn Gly Leu Lys Lys Leu Gly Phe Asn Val Lys Lys
 180 185

<210> 8073
 <211> 559
 <212> PRT
 <213> B.fragilis

<400> 8073
 Leu Ser Arg Ser Ser Arg Arg Thr Leu Ala Met Ser Leu Glu Lys Glu
 1 5 10 15
 Arg Ile Glu Lys Glu His Ile Glu Glu Met Asn Gln Ala Lys Leu Arg
 20 25 30
 Phe Phe Thr Asn Val Ser His Glu Phe Arg Thr Pro Leu Thr Leu Ile
 35 40 45
 Ile Ser Gln Val Glu Leu Met Leu Gln Lys Asn Thr Ile Pro Pro Ser
 50 55 60
 Leu His Asn Ser Ile Phe Arg Ile Arg Lys His Ala Gln Gln Met Lys
 65 70 75 80
 Leu Leu Ile Ser Glu Leu Leu Asp Phe Arg Lys Phe Asp Gln Asn Tyr
 85 90 95
 Ile Gln Leu Lys Leu Ser Glu Gln Ser Leu Asn Thr Phe Leu Glu Glu
 100 105 110
 Val Tyr Leu Ser Phe Ser Ala Tyr Ala Ser Gln Lys Ser Ile Ser Tyr
 115 120 125
 His Leu Lys Leu Leu Glu Gln Asp Ile Ser Ile Trp Ile Asp Asp Trp
 130 135 140
 Gln Met Arg Lys Val Leu Phe Asn Leu Leu Ser Asn Ala Phe Lys His
 145 150 155 160
 Val Pro Asp Lys Gly Glu Ile Ser Ile Leu Thr Ser Thr Thr Pro Asp
 165 170 175
 Gln Val Val Ile Ala Val Lys Asp Ser Gly Asn Gly Ile Ser Lys Glu
 180 185 190
 Glu Gln Glu Arg Ile Phe Asp Arg Phe Tyr Gln Ala Asp Asn Arg Asn
 195 200 205
 Lys Ala Ile His Val Gly Thr Gly Ile Gly Leu Ala Leu Thr Lys Ser
 210 215 220
 Ile Ile Gln Leu His His Gly Thr Ile Glu Val Glu Ser Glu Leu Asn
 225 230 235 240
 Glu Gly Ser Cys Phe Ile Val Lys Leu Pro Lys Thr Arg Asp Cys Phe
 245 250 255
 Glu Lys Asp Thr Glu Val Val Phe Leu Glu Ser Pro Glu Lys Glu Pro
 260 265 270
 Met Val Gln Glu Asn Thr Ile Pro Asp Glu Asn Phe Met Lys Lys Asp
 275 280 285
 Asp Ser Thr Phe Glu Thr Pro Leu Ile Asp Glu Arg Glu Gly Lys Arg
 290 295 300
 Lys Val Leu Leu Val Glu Asp Asn Val Glu Leu Leu Gln Val Leu Lys
 305 310 315 320
 Glu Ile Phe Ser Ser Leu Tyr Gln Val Val Thr Ala Ala Asn Gly Glu
 325 330 335
 Glu Gly Leu Lys Gln Ala Phe Ala Glu Val Pro Asp Leu Ile Val Ser
 340 345 350


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Asp Val Met Met Pro Val Met Thr Gly Thr Glu Met Cys Leu Lys Ile
    355                      360                      365
Lys Asn Asn Ile Asn Leu Cys His Ile Pro Val Val Leu Leu Thr Ala
    370                      375                      380
Leu Asp Thr Val Asp Gln Asn Ile Glu Gly Leu Arg Arg Gly Ala Asp
    385                      390                      395                      400
Asp Tyr Ile Thr Lys Pro Phe Asn Ala Lys Ile Leu Ile Thr Arg Cys
    405                      410                      415
Asn Asn Leu Ile Arg Asn Arg Leu Leu Met Gln Ser Arg Phe Ala Lys
    420                      425                      430
Asp Gln Ile Leu Glu Ile Asn Leu Leu Ala Ala Asn Pro Ile Asp Lys
    435                      440                      445
Gly Phe Leu Asp Arg Val Ile Lys Val Val Asp Lys His Ile Asp Asn
    450                      455                      460
Glu Asp Phe Asp Ile Gly Met Leu Cys Gln Glu Leu Gly Met Gly Arg
    465                      470                      475                      480
Thr Leu Leu His Thr Lys Phe Lys Ala Leu Thr Gly Met Thr Pro Asn
    485                      490                      495
Glu Phe Ile Leu Asn His Arg Leu Lys Ile Ala Ser Leu Met Leu Lys
    500                      505                      510
Asn Glu Pro Tyr Leu Gln Val Ala Glu Ile Ser Asp Arg Leu Gly Phe
    515                      520                      525
Gly Ser Pro Arg Tyr Phe Ser Arg Cys Phe Lys Asn Gln Tyr Asn Val
    530                      535                      540
Thr Pro Met Glu Tyr Arg Lys Gly Ala Lys Gln Glu Asn Leu Lys
    545                      550                      555

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<210> 8074
<211> 1008
<212> PRT
<213> B.fragilis

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<400> 8074
Ser Ile Met Arg Lys Ser Lys Leu His Leu Leu Pro Leu Ser Ser Lys
1      5      10      15
Arg Val Leu Val Ser Thr Ser Leu Ile Met Leu Leu Ser Gly Ser Ala
20     25     30
Trp Ala Val Ser Ser Gln Glu Thr Val Glu Asn Gly Asp Ala Ile Thr
35     40     45
Ala Val Pro Gln Gln Arg Arg Thr Val Lys Gly Ile Val Lys Asp Ala
50     55     60
Asn Gly Glu Pro Ile Ile Gly Ala Asn Val Ile Val Lys Gly Asn Lys
65     70     75     80
Thr Ile Gly Val Ile Thr Asn Leu Asn Gly Glu Phe Ser Leu Glu Val
85     90     95
Pro Ser Asn Ala Thr Leu Gln Ile Ser Tyr Ile Gly Tyr Leu Asn Lys
100    105    110
Glu Val Lys Val Ser Gly Asn Gln Val Ser Phe Asn Ile Gln Leu Glu
115    120    125
Glu Asp Ser Lys Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Thr
130    135    140
Gln Lys Lys Ala Asn Leu Thr Gly Ala Val Ser Ser Val Asp Phe Glu
145    150    155    160
Glu Gln Thr Lys Ser Arg Pro Ile Thr Thr Val Ser Ser Ala Leu Ala
165    170    175
Gly Leu Ser Pro Gly Leu Gln Ala Ser Ser Gly Ser Ala Met Pro Gly
180    185    190
Glu Asp Asn Thr Thr Leu Arg Val Arg Gly Asn Gly Thr Met Asn Asn
195    200    205

```

Ala Ser Pro Leu Ile Ile Ile Asp Gly Met Glu Gly Ser Leu Asn Ala
 210 215 220
 Ile Asn Pro Gln Asp Ile Glu Asn Ile Ser Ile Leu Lys Asp Ala Ala
 225 230 235 240
 Ser Cys Ala Ile Tyr Gly Ala Arg Ala Ala Asn Gly Val Ile Leu Val
 245 250 255
 Thr Thr Lys Ser Gly Asp Arg Asp Lys Ile Gln Val Asn Tyr Ser Gly
 260 265 270
 Arg Ile Ser Phe Asn Ser Pro Thr Arg Met Ile Glu Thr Met Ser Asn
 275 280 285
 Tyr Ala Asp Tyr Met Glu Leu Met Asn Glu Ser Cys Glu Asn Val Gly
 290 295 300
 Ser Gly Thr Leu Phe Asp Gln Lys Tyr Ile Asp Leu Trp Arg Glu Lys
 305 310 315 320
 Ser Lys Asp Pro Asn Gly Val Asn Glu Asn Gly Val Pro Asn Tyr Ile
 325 330 335
 Ala Tyr Pro Asn Thr Asn Trp Leu Lys Glu Leu Tyr Ser Gly Gly Met
 340 345 350
 Ile His Glu His Asn Leu Ser Val Ser Gly Gly Ser Asn Lys Ile Arg
 355 360 365
 Phe Leu Leu Ser Ala Arg Tyr Gln Asp Asn Glu Gly Ile Val Asp Asn
 370 375 380
 Thr Ala Asn Lys Thr Tyr Ser Val Arg Ala Asn Ile Glu Ala Asn Pro
 385 390 395 400
 Thr Gln Trp Leu Thr Leu Gly Thr Arg Thr Tyr Ala Ser Gln Met Asp
 405 410 415
 Arg Glu Val Gly Asp Phe Ser Asn Ala Asn Thr Phe Leu Arg Gln Ser
 420 425 430
 Thr Ala Gly Thr Tyr Pro Glu Trp Asn Gly Ser Phe Gly Tyr Pro Glu
 435 440 445
 Cys Pro Asp Glu Arg Ala Thr Ala Asn Asn Pro Leu Tyr Lys Leu Ala
 450 455 460
 Arg Asn Asp Gly Phe Lys Arg Tyr Asn Arg Phe Asn Thr Thr Leu Phe
 465 470 475 480
 Ser Lys Val Lys Phe Phe Lys Asp Leu Ser Trp Asp Phe Asn Phe Asn
 485 490 495
 Tyr Asn Arg Tyr Ile Tyr Glu Thr Arg Gln Trp Gly Val Pro Ala Tyr
 500 505 510
 Gln Thr Arg Phe Ser Asp Gly Val Ile Val Asp Gly Ile Thr Pro Pro
 515 520 525
 Ser Gln Leu Ser Thr Ser Phe Gly Tyr Glu Ser Asn Tyr Ser Tyr Thr
 530 535 540
 Leu Glu Asn Leu Leu Asn Tyr His His Thr Phe Ala Gln Lys His Asp
 545 550 555 560
 Val Ser Ala Leu Leu Gly Tyr Gln Glu Phe Tyr Lys Asn Tyr Tyr Thr
 565 570 575
 Val Asp Ala Ala Lys Lys Gly Leu Ile Asp Glu Ser Leu Asn Gln Phe
 580 585 590
 Asp Glu Ala Thr Glu Met Thr Ser Thr Lys Gly Ala Thr Gln Asp Tyr
 595 600 605
 Ala Thr Arg Ser Val Phe Gly Arg Val Asn Tyr Ala Tyr Asn Ser Arg
 610 615 620
 Tyr Leu Phe Glu Ala Asn Phe Arg Tyr Asp Gly Ser Ser Arg Phe His
 625 630 635 640
 Lys Asp His Arg Trp Gly Phe Phe Pro Ser Leu Ser Gly Ala Trp Arg
 645 650 655
 Ile Ser Glu Glu Ser Phe Met Glu Asn Thr Arg Thr Trp Leu Asp Asn
 660 665 670
 Leu Lys Val Arg Ala Ser Trp Gly Lys Leu Gly Asn Ser Glu Ile Gly

675	680	685
Asn Tyr Glu Tyr Met Trp Val Tyr Ser Thr Thr Asn Ala Val Phe Gly		
690	695	700
Asn Ala Leu Asn Ser Ala Leu Tyr Met Gly Ala Ile Ala Asn Ser Leu		
705	710	715
Leu Lys Trp Glu Ser Thr Thr Ser Val Asn Phe Gly Ile Asp Val Asn		
725	730	735
Leu Leu Lys Asn Arg Leu Ser Ile Ser Ala Asp Leu Tyr Gln Lys Lys		
740	745	750
Thr Asp Gly Ile Leu Tyr Arg Pro Thr Ile Pro Tyr Val Phe Gly Thr		
755	760	765
Met Thr Ala Pro Arg Gln Asn Leu Ala Lys Val Ser Asn Lys Gly Val		
770	775	780
Glu Leu Ser Leu Gly Trp Arg Asp Asn Ile Gly Gly Val Ser Tyr Ser		
785	790	795
Ile Asn Gly Asn Phe Ser Tyr Asn Lys Ser Asn Ile Asp Ala Tyr Asn		
805	810	815
Gly Thr Tyr Glu Arg Thr Trp Val Glu Asp Pro Asn Asn Lys Leu Thr		
820	825	830
Gly Gly Lys Trp Glu Asp Asn Ile Gly Lys Val Ser Ser Gly Gly Thr		
835	840	845
Thr Pro Ile Val Glu Gly Arg Met Met Asn Glu Tyr Tyr Leu Arg Asn		
850	855	860
Val Tyr His Gly Asn Gly Ser Tyr Tyr Asn Ala Asp Gly Ser Val Asn		
865	870	875
Pro Gln Gly Gly Pro Lys Thr Gly Met Ile Arg Thr Glu Lys Asp Met		
885	890	895
Ala Trp Val Lys Asp Met Ile Ala Ala Gly Tyr Glu Phe Gln Pro Gly		
900	905	910
Lys Thr Val Ala Lys Asn Lys Ile Trp Tyr Gly Glu Tyr Ile Tyr Ala		
915	920	925
Asp Ser Lys Tyr Asn Gly Val Tyr Gly Asp Asp Asn Asp Tyr Thr Phe		
930	935	940
Gln Lys Thr Ser Asn Lys Pro Lys Tyr Asn Phe Arg Phe Gln Ala Phe		
945	950	955
Cys Arg Met Glu Arg Ile Arg Pro Ser Leu Trp Tyr Gly Arg Asn Leu		
965	970	975
Pro Asp Leu Thr Tyr Phe Gly Gly Pro Pro Gln Asp Thr Thr Pro Asn		
980	985	990
Leu Leu Lys Trp Gly Arg Pro Phe Ala Pro Pro Val Ala Gly Glu Tyr		
995	1000	1005

<210> 8075
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 8075

Leu Lys Phe Val Arg Pro Arg Pro Phe Gln Pro Arg Gly Glu Asp His	
1 5 10 15	
Asn Ser Lys Leu Phe Val Leu Phe Ala Leu Phe Leu Phe Val Ala	
20 25 30	
Cys Lys Pro Lys Glu Lys Pro Ser Pro Ala Thr Ser Leu Thr Asp Asp	
35 40 45	
Ala Leu Met Asp Thr Val Gln Arg Arg Thr Phe Asn Tyr Phe Trp Asp	
50 55 60	
Ala Ala Glu Pro Asn Ser Gly Leu Ala Arg Glu Arg Tyr His Met Asp	
65 70 75 80	
Gly Glu Tyr Pro Ala Gly Gly Pro Glu Ile Val Thr Ser Gly Gly Ser	

85 90 95
 Gly Phe Gly Ile Met Ala Ile Leu Ala Gly Ile Asp Arg Gly Tyr Val
 100 105 110
 Ser Arg Glu Gly Leu Gln Arg Met Glu Lys Ile Val Gly Phe Leu
 115 120 125
 Glu Lys Ala Asp Arg Phe Lys Gly Ala Tyr Pro His Trp Trp Asn Gly
 130 135 140
 Glu Thr Gly His Val Gln Pro Phe Gly Gln Lys Asp Asn Gly Gly Asp
 145 150 155 160
 Leu Val Glu Thr Ala Phe Leu Met Gln Gly Leu Leu Ala Val His Gln
 165 170 175
 Tyr Tyr Ala Glu Gly Ser Ala Glu Glu Lys Lys Leu Ala Gly Arg Ile
 180 185 190
 Asp Lys Leu Trp Arg Glu Val Asp Trp Asn Trp Tyr Arg His Gly Gly
 195 200 205
 Gln Asn Val Leu Tyr Trp His Trp Ser Pro Glu Tyr Gly Trp Glu Met
 210 215 220
 Asn Phe Pro Val His Gly Tyr Asn Glu Cys Leu Ile Met Tyr Ile Leu
 225 230 235 240
 Ala Ala Ala Ser Pro Thr His Gly Val Pro Ala Ala Val Tyr His Glu
 245 250 255
 Arg Trp Ala Gln Asn Gly Ala Ile Val Ser Pro His Lys Val Glu Gly
 260 265 270
 Ile Glu Leu His Leu Arg Tyr Gln Gly Gly Glu Ala Gly Pro Leu Phe
 275 280 285
 Trp Ala Gln Tyr Ser Phe Leu Gly Leu Asp Pro Val Gly Ala Glu Arg
 290 295 300
 Arg Val Leu Ser Glu Leu Phe
 305 310

<210> 8076

<211> 90

<212> PRT

<213> B.fragilis

<400> 8076

Tyr Ile Asp Pro Cys Thr Val Arg Thr Glu Asp Phe Tyr Asn Phe Asp
 1 5 10 15
 Leu Ile Ile Gly Met Asp Asp Arg Asn Met Asp Asp Leu Lys Glu Lys
 20 25 30
 Ala Pro Ser Pro Ala Glu Trp Lys Lys Ile His Arg Met Thr Glu Tyr
 35 40 45
 Cys Thr Arg Ile Pro Ala Asp His Val Pro Asp Pro Tyr Tyr Gly Gly
 50 55 60
 Ala Glu Gly Phe Glu Tyr Val Leu Asp Ile Leu Glu Asp Ala Cys Ala
 65 70 75 80
 Gly Leu Leu Thr Ser Leu Thr Gln Asp Ser
 85 90

<210> 8077

<211> 112

<212> PRT

<213> B.fragilis

<400> 8077

Leu Gly Asp Pro Cys Gly Thr Leu Val His Ala Asp Phe Tyr Ile Phe
 1 5 10 15
 Ile Phe Arg Leu Thr His Ser Val Ile Tyr Ser Leu Leu Cys Leu Cys
 20 25 30

Leu Cys Asn Ile Cys Arg Phe Tyr Thr Ala Glu Gly Val Met Leu His
 35 40 45
 Pro Ile Asn Asp Ala Gly Leu Glu Arg Glu Leu Val Ile Asp Ser Thr
 50 55 60
 Gly Ile Leu Ala Tyr His Gln Val Glu Leu Thr Asp Ser Arg Met His
 65 70 75 80
 Ala His Ala Val Leu Arg Gly Tyr Glu Leu Ile His Arg Ser Val Tyr
 85 90 95
 Cys Pro Tyr Gly Arg Phe Leu Gln Leu Arg Ser Tyr Asn Arg Tyr Gly
 100 105 110

<210> 8078
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 8078
 Leu Pro Phe Gln Ala Gly Val Val Asn Arg Met Glu His His Ser Phe
 1 5 10 15
 Arg Arg Val Lys Ala Ala Asn Val Ala Glu Ala Lys Ala Lys Lys Ala
 20 25 30
 Val Tyr His Ala Met Gly Gln Ser Lys Tyr Lys Asp Ile Lys Ile Arg
 35 40 45
 Met His Gln Arg Ala Ala Trp Ile Ser Gln Leu Arg Val Ser Ala Cys
 50 55 60
 Gly Ile Ile
 65

<210> 8079
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8079
 Ser Val Cys Leu Thr Cys Ile Val Ala Ala Ser Arg Val Gln Lys Leu
 1 5 10 15
 Ile Ile Lys Lys Val Ser Gly Ser Ile Ile Leu Thr Phe Asn Arg Asn
 20 25 30
 Leu Thr Lys Lys Met Pro Glu Leu Phe Val Pro Val Leu Lys Glu His
 35 40 45
 Gly Val Lys Ser Ser Phe Ser Lys Ser Gly Asp Arg Gly Trp Val
 50 55 60

<210> 8080
 <211> 494
 <212> PRT
 <213> B.fragilis

<400> 8080
 Pro Asp Leu Asn Gly Leu Asn Tyr Ser Leu Ser Glu Phe Lys Asn Ser
 1 5 10 15
 Lys Gly Asp Val Leu Pro Ala Asp Ala Phe Ser Gly Gly Phe Val Arg
 20 25 30
 Tyr Val Met Thr Asp Glu Leu Asn Lys Asp Gly Arg Gly Gly Cys Gly
 35 40 45
 Tyr Arg Pro Asp His Ser Ile Tyr Asp Ser Leu Leu Val Ala Asp Pro
 50 55 60
 Ile Asp His Leu Leu Thr Ser Met Pro Met Glu Ala Lys Ser Thr Gln
 65 70 75 80

Ala Ile Trp Ile Asn Cys Gln Val Pro Gln Thr Val Ser Pro Gly Val
 85 90 95
 Tyr Arg Gly Thr Val Glu Val Lys Asp Gly Asp Asn Arg Leu Ser Thr
 100 105 110
 Leu Lys Met Asp Ile Lys Val Ser Ser Arg Val Leu Pro Ala Pro Ser
 115 120 125
 Gln Trp Ala Phe His Leu Asp Leu Trp Gln Ser Pro Phe Ala Val Ala
 130 135 140
 Arg Tyr Tyr Gln Val Pro Leu Trp Ser Gln Ala His Ile Asp Ala Met
 145 150 155 160
 Arg Pro Val Met Lys Met Leu Ala Asp Ala Gly Gln Lys Ile Ile Thr
 165 170 175
 Ala Ser Ile Met His Lys Pro Trp Asn Gly Gln Thr Tyr Asp Tyr Phe
 180 185 190
 Glu Ser Met Val Thr Trp Thr Lys Lys Val Asn Gly Thr Trp Ala Phe
 195 200 205
 Asp Tyr Asp Val Phe Asp Lys Trp Val Glu Met Met Met Ser Val Gly
 210 215 220
 Ile Asp Lys Gln Ile Asn Cys Tyr Ser Met Val Pro Trp Lys Leu Ser
 225 230 235 240
 Phe Gln Tyr Phe Asp Gln Ala Thr Asn Ser Met Gln Tyr Val Lys Thr
 245 250 255
 Ala Pro Gly Glu Lys Ala Tyr Glu Glu Met Trp Val Ala Met Leu Lys
 260 265 270
 Ser Phe Ser Lys His Leu Arg Glu Lys Ser Trp Phe Asp Ile Cys Thr
 275 280 285
 Ile Ala Met Asp Glu Arg Pro Met Glu Val Met Gln Lys Thr Leu Gln
 290 295 300
 Val Ile Arg Lys Ala Asp Pro Glu Phe Lys Val Ser Leu Ala Gly Asn
 305 310 315 320
 Phe His Lys Glu Leu Glu Ala Asp Ile Tyr Asp Tyr Cys Ile Pro Ile
 325 330 335
 Gly Ala Ser Tyr Pro Ala Glu Val Leu Ala Arg Arg Ala Gln Asn Asn
 340 345 350
 Leu Pro Thr Thr Tyr Tyr Thr Cys Cys Thr Glu Ala Phe Pro Asn Thr
 355 360 365
 Phe Thr Phe Ser Asp Pro Ala Glu Ala Ala Trp Met Ser Tyr Tyr Ser
 370 375 380
 Ala Lys Asp His Leu Asp Gly Tyr Leu Arg Trp Ala Tyr Asn Ser Trp
 385 390 395 400
 Pro Lys Glu Pro Leu Leu Asp Ser Arg Phe Glu Ala Trp Ala Gly Gly
 405 410 415
 Asp Thr Tyr Leu Val Tyr Pro Gly Ala Arg Ser Ser Ile Arg Phe Glu
 420 425 430
 Lys Leu Ile Glu Gly Val Gln Ala His Glu Lys Ile Thr Ile Leu Arg
 435 440 445
 Lys Glu Phe Thr Asp Lys Lys Asn Lys Thr Gly Phe Lys Lys Leu Glu
 450 455 460
 Lys Met Leu Ser Thr Phe Asn Leu Arg Asp Phe Pro Glu Val Pro Ala
 465 470 475 480
 Ala Glu Thr Val Asn Lys Ala Asn Lys Ile Leu Asn Ser Leu
 485 490

<210> 8081

<211> 392

<212> PRT

<213> B.fragilis

<400> 8081

Phe Cys His Asp Leu Pro Ile Leu Thr Gln Ile Met Ala Glu Arg Lys
 1 5 10 15
 Val Arg Val Arg Phe Ala Pro Ser Pro Thr Gly Ala Leu His Ile Gly
 20 25 30
 Gly Val Arg Thr Ala Leu Tyr Asn Tyr Leu Phe Ala Arg Gln His Gly
 35 40 45
 Gly Asp Leu Ile Phe Arg Ile Glu Asp Thr Asp Ser Asn Arg Phe Val
 50 55 60
 Pro Gly Ala Glu Glu Tyr Ile Leu Glu Ser Phe Lys Trp Leu Gly Ile
 65 70 75 80
 Gln Phe Asp Glu Gly Val Ser Phe Gly Gly Glu Tyr Gly Pro Tyr Arg
 85 90 95
 Gln Ser Glu Arg Arg Glu Ile Tyr Lys Lys Tyr Val Gln Val Leu Leu
 100 105 110
 Asp Asn Gly Lys Ala Tyr Ile Ala Phe Asp Thr Pro Glu Glu Leu Tyr
 115 120 125
 Val Lys Arg Ala Glu Met Ala Tyr Leu His Tyr Asp Ala Ser Thr Arg
 130 135 140
 Val Gly Met Arg Asn Ser Met Thr Leu Pro Lys Glu Glu Val Glu Ala
 145 150 155 160
 Leu Ile Ala Asp Gly Lys Gln Tyr Val Val Arg Phe Lys Ile Glu Pro
 165 170 175
 Asn Glu Asp Ile His Val Asn Asp Leu Ile Arg Gly Glu Val Val Ile
 180 185 190
 Asn Ser Ser Ile Leu Asp Asp Lys Val Leu Tyr Lys Ser Ala Asp Glu
 195 200 205
 Leu Pro Thr Tyr His Leu Ala Asn Ile Val Asp Asp His Leu Met Glu
 210 215 220
 Val Ser His Val Ile Arg Gly Glu Glu Trp Leu Pro Ser Ala Pro Leu
 225 230 235 240
 His Val Leu Leu Tyr Arg Ala Phe Gly Trp Glu Asp Thr Met Pro Ala
 245 250 255
 Phe Ala His Leu Pro Leu Leu Leu Lys Pro Glu Gly Asn Gly Lys Leu
 260 265 270
 Ser Lys Arg Asp Gly Asp Arg Leu Gly Phe Pro Val Phe Pro Leu Glu
 275 280 285
 Trp His Asp Pro Lys Ser Gly Glu Ile Ser Ser Gly Tyr Arg Glu Ser
 290 295 300
 Gly Tyr Leu Pro Glu Ala Val Ile Asn Phe Leu Ala Leu Leu Gly Trp
 305 310 315 320
 Asn Pro Gly Asn Asp Gln Glu Val Met Ser Met Asp Glu Leu Ile Arg
 325 330 335
 Leu Phe Asp Leu His Arg Cys Ser Lys Ser Gly Ala Lys Ile Asp Tyr
 340 345 350
 Lys Lys Gly Ile Trp Phe Asn His Thr Tyr Ile Gln Gln Lys Ser Asp
 355 360 365
 Lys Lys Asn Ala Arg Thr Val Cys Thr Gly Ala Glu Arg Ala Trp Ser
 370 375 380
 Lys Lys Phe Leu Phe Lys Lys Trp
 385 390

<210> 8082

<211> 704

<212> PRT

<213> B.fragilis

<400> 8082

Thr Phe Phe Ser Thr Leu Leu Phe Phe Phe Val Leu Phe Ala Lys Asn
 1 5 10 15

Ser	Arg	Val	Met	Glu	His	Trp	Lys	Lys	Lys	Asn	Ser	Phe	Ser	Tyr	Lys
		20						25					30		
Asp	Leu	Leu	Tyr	Lys	Ala	Leu	Ile	Phe	Val	Gly	Thr	Val	Ala	Phe	Ile
		35					40					45			
Val	Tyr	Phe	Leu	Pro	Arg	Asp	Gly	Lys	Phe	Asn	Tyr	Gln	Phe	Asp	Ile
	50					55					60				
Asn	Lys	Pro	Trp	Lys	Tyr	Gly	Gln	Leu	Met	Ala	Thr	Phe	Asp	Phe	Pro
65					70					75					80
Ile	Tyr	Lys	Asp	Glu	Ala	Val	Val	Lys	Arg	Glu	Gln	Asp	Ser	Leu	Leu
			85						90					95	
Ala	Ser	Phe	Gln	Pro	Tyr	Phe	Glu	Leu	Asp	Lys	Glu	Val	Glu	Lys	Ser
			100					105					110		
Ala	Leu	Ala	Lys	Leu	Lys	Glu	Asn	Tyr	His	Ala	His	Leu	Lys	Gly	Ile
		115					120					125			
Leu	Pro	Ser	Thr	Asp	Tyr	Ile	Arg	Tyr	Ile	Glu	Arg	Gly	Leu	Lys	Ala
	130					135						140			
Ile	Tyr	Gln	Ser	Gly	Val	Val	Ser	Thr	Glu	Glu	Met	Arg	Thr	Leu	Leu
145					150					155					160
His	Asp	Ser	Ile	Phe	Ser	Val	Met	Val	Ile	Glu	Asp	Lys	Leu	Ala	Asn
			165						170					175	
Gln	Arg	Thr	Thr	Asp	Gly	Ile	Tyr	Thr	Val	Lys	Arg	Ala	Tyr	Glu	Asn
		180						185					190		
Leu	Ile	Ser	Gly	Asp	Thr	Ala	His	Tyr	Asn	Arg	Asp	Ile	Leu	Arg	Gln
	195					200						205			
Cys	Ala	Leu	Asn	Asp	Tyr	Ile	Thr	Pro	Asn	Leu	Ile	Tyr	Asp	Ser	Val
	210					215					220				
Arg	Thr	Glu	Thr	Ala	Arg	Lys	Glu	Leu	Leu	Asp	Asn	Tyr	Ser	Trp	Ala
225					230					235					240
Asn	Gly	Val	Val	Gln	Ser	Gly	Gln	Lys	Ile	Ile	Asp	Arg	Gly	Glu	Ile
			245						250					255	
Val	Asn	Lys	Gln	Thr	Tyr	Asn	Ile	Leu	Glu	Ser	Leu	Arg	Lys	Glu	Ser
			260					265					270		
Ile	Lys	Arg	Ser	Glu	Ser	Ile	Gly	Gln	Lys	Arg	Leu	Ile	Leu	Gly	Gly
	275						280					285			
Gln	Ile	Leu	Phe	Val	Gly	Ile	Leu	Ile	Leu	Cys	Phe	Met	Leu	Tyr	Leu
	290					295					300				
Glu	Leu	Phe	Arg	Lys	Asp	Tyr	Tyr	Glu	Arg	Lys	Gly	Ser	Leu	Ser	Leu
305					310					315					320
Leu	Phe	Ala	Leu	Ile	Val	Phe	Tyr	Cys	Val	Ile	Thr	Ala	Leu	Met	Val
			325						330					335	
Thr	Asn	Asn	Ile	Phe	Asn	Val	Tyr	Ile	Leu	Pro	Tyr	Ala	Met	Leu	Pro
			340					345					350		
Ile	Ile	Ile	Arg	Val	Phe	Leu	Asp	Ser	Arg	Thr	Ala	Phe	Leu	Thr	His
	355						360					365			
Val	Ile	Thr	Ile	Leu	Ile	Cys	Ser	Ile	Thr	Leu	Arg	Tyr	Pro	His	Glu
	370					375					380				
Phe	Ile	Leu	Thr	Gln	Ile	Ala	Ala	Gly	Leu	Val	Ala	Ile	Phe	Ser	Leu
385					390					395					400
Arg	Glu	Leu	Ser	Gln	Arg	Ser	Gln	Leu	Phe	Arg	Thr	Ala	Leu	Leu	Val
			405						410				415		
Ile	Leu	Thr	Tyr	Ala	Ala	Ile	Tyr	Phe	Ala	Phe	Glu	Leu	Ile	Ser	Glu
		420						425					430		
Asn	Asp	Leu	Ser	Lys	Leu	Asn	Val	Ser	Met	Tyr	Ile	Tyr	Phe	Ile	Ile
	435					440						445			
Asn	Gly	Val	Leu	Leu	Leu	Phe	Ala	Tyr	Pro	Leu	Leu	Phe	Leu	Leu	Glu
	450					455					460				
Lys	Thr	Ile	Gly	Phe	Thr	Ser	Asn	Val	Thr	Leu	Val	Glu	Leu	Ser	Asn
465					470					475					480
Ile	Asn	Asn	Asp	Leu	Leu	Lys	Lys	Met	Ser	Glu	Thr	Gly	Pro	Gly	Thr

485 490 495
 Phe Gln His Ser Met Gln Val Ala Asn Leu Ala Ala Glu Ala Ala Ile
 500 505 510
 Arg Ile Gly Ala Lys Arg Gln Leu Val Arg Thr Gly Ala Leu Tyr His
 515 520 525
 Asp Ile Gly Lys Met Glu Asn Pro Ala Phe Phe Thr Glu Asn Gln Ser
 530 535 540
 Gly Val Asn Pro His Lys Asn Leu Ser Tyr Glu Gln Ser Ala Gln Val
 545 550 555 560
 Val Ile Ser His Val Thr Asp Gly Leu Lys Leu Ala Asp Lys His Asn
 565 570 575
 Leu Pro Lys Val Ile Lys Asp Phe Ile Ser Thr His His Gly Arg Gly
 580 585 590
 Lys Thr Lys Phe Phe Tyr Ile Ser Trp Lys Asn Glu His Pro Gly Glu
 595 600 605
 Glu Pro Asn Glu Glu Val Phe Thr Tyr Pro Gly Pro Asn Pro Phe Ser
 610 615 620
 Lys Glu Thr Ala Ile Leu Met Met Ala Asp Ser Val Glu Ala Ala Ser
 625 630 635 640
 Arg Ser Leu Pro Glu Tyr Thr Glu Glu Ser Ile Ser Asn Leu Val Asp
 645 650 655
 Lys Ile Ile Asp Ser Gln Val Gln Glu Gly Tyr Phe Lys Glu Cys Pro
 660 665 670
 Ile Thr Phe Lys Asp Ile Ala Thr Ile Lys Ala Val Phe Lys Glu Lys
 675 680 685
 Leu Lys Thr Ile Tyr His Thr Arg Ile Ser Tyr Pro Glu Leu Lys Lys
 690 695 700

<210> 8083
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 8083
 Ser Leu Ile Pro Ser Leu Phe Thr Glu His Ser Cys Ala Cys Ser Val
 1 5 10 15
 Pro Ile Ser Lys Gln Tyr Lys Ser Ser Ile Met Asn Phe Ile Trp Tyr
 20 25 30
 Ile Leu Ile Gly Ile Leu Ala Gly Tyr Phe Ala Gly Lys Ile Met Arg
 35 40 45
 Gly Gly Gly Phe Gly Leu Leu Val Asn Leu Leu Leu Gly Ile Ile Gly
 50 55 60
 Gly Val Leu Gly Gly Trp Val Phe Ala Leu Leu Gly Leu Ala Ala Thr
 65 70 75 80
 Gly Ile Ile Gly Ser Leu Ile Thr Ser Val Val Gly Ala Ile Leu Phe
 85 90 95
 Leu Trp Ile Ala Ser Phe Phe Ser Arg Ser Arg
 100 105

<210> 8084
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 8084
 Val Asn Ser Pro Glu Gly Glu Leu Lys Thr Ser Arg Asn Arg Gln Pro
 1 5 10 15
 Arg Thr Lys Thr Leu Phe Phe Glu Gln Met Arg Lys Ala Lys Pro Lys
 20 25 30

Lys Arg Val Ile Leu Pro Asp Pro Val Phe Asn Asp Gln Lys Val Ser
 35 40 45
 Lys Phe Val Asn His Leu Met Tyr Asp Gly Lys Lys Asn Thr Ser Tyr
 50 55 60
 Glu Ile Phe Tyr Ala Ala Leu Glu Thr Val Lys Ala Lys Leu Pro Asn
 65 70 75 80
 Glu Glu Lys Thr Ala Leu Glu Ile Trp Lys Lys Ala Leu Asp Asn Val
 85 90 95
 Thr Pro Gln Val Glu Val Lys Ser Arg Arg Val Gly Gly Ala Thr Phe
 100 105 110
 Gln Val Pro Thr Glu Ile Arg Pro Asp Arg Lys Glu Ser Ile Ser Met
 115 120 125
 Lys Asn Leu Ile Leu Phe Ala Arg Lys Arg Gly Gly Lys Ser Met Ala
 130 135 140
 Asp Lys Leu Ala Ala Glu Ile Met Asp Ala Phe Asn Glu Gln Gly Gly
 145 150 155 160
 Ala Phe Lys Arg Lys Glu Asp Met His Arg Met Ala Glu Ala Asn Arg
 165 170 175
 Ala Phe Ala His Phe Arg Phe
 180

<210> 8085
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 8085
 Lys Ser Asn Leu Lys Tyr Arg Thr Lys Glu Ser Val Cys Cys Pro Cys
 1 5 10 15
 Ser Leu Glu Arg Ser Val Gly Leu Leu Lys Lys Gln Leu Leu Leu Leu
 20 25 30
 Glu Glu Ile Tyr Ser Asn Tyr Ser Ser Ser Thr Glu Gly Glu Ile Ile
 35 40 45
 Thr Gln Ser His Arg Thr Val Asn Ala Lys Arg Ile Pro Ile Ser Phe
 50 55 60
 Ser Tyr Glu Gly Gly Ile Thr Leu Asp Thr Glu Thr Leu His Tyr Ser
 65 70 75 80
 Ser Pro Ser Glu Lys Phe Ala Thr Thr Trp Lys Asn Ile Leu Phe His
 85 90 95
 Thr Ile Ser Ile Arg Ile Ile Ile Gly Leu His Lys Ser Asn Met Glu
 100 105 110
 Pro Ser Glu Trp Arg Glu Ile Ile His Gln Asn Thr Tyr Gln Lys Phe
 115 120 125
 His Arg Lys His Arg Arg Arg Leu Pro Leu Ser Phe Arg Glu Arg Tyr
 130 135 140
 Thr Gln Tyr Lys Asn Lys Ala Ser Asp Ala Phe Asn Gln Asp Ala Pro
 145 150 155 160
 Lys

<210> 8086
 <211> 147
 <212> PRT
 <213> B.fragilis

<400> 8086
 Phe Thr Gly Leu Arg Met Asn Asn Ile Val Tyr Gly Tyr Thr Ser Glu
 1 5 10 15
 Asp Thr Phe Val Gln Ser Ser Asn Asn Phe Val Ile Val Leu Glu Val

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      20      25      30
Ser Thr Asn Gln Ser Ala Lys Arg Thr Ala Val Phe Phe Ile Asn Asn
      35      40      45
His Ile Met Arg Asn Val Asn Gln Thr Thr Ser Gln Val Ser Arg Ile
      50      55      60
Gly Ser Leu Gln Ser Ser Ile Arg Gln Thr Phe Thr Gly Thr Val Ser
      65      70      75      80
Arg Asp Lys Val Leu Gln His Arg Lys Ser Leu Phe Lys Val Arg Gln
      85      90      95
Asp Arg Ile Leu Asp Asp Leu Thr Thr Phe Ser Thr Cys Leu Leu Arg
      100      105      110
Phe Cys His Gln Thr Thr His Thr Gly Glu Leu Thr Asp Leu Leu Phe
      115      120      125
Arg Thr Thr Gly Thr Gly Ile Lys His His Val His Arg Val Glu Thr
      130      135      140
Leu Ile Ile
      145

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<210> 8087

<211> 167

<212> PRT

<213> B.fragilis

<400> 8087

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Arg Thr Ala Gln His Arg Asn Tyr Ser His Leu Asn Ser Cys Ile Ala
1      5      10      15
Lys Ser Ser Gln Tyr Phe Phe Phe Cys Asn Ser Arg Arg Ile Ile Lys
      20      25      30
Val Phe Phe His Gln Arg Ile Ile Lys Phe Ser Tyr Phe Phe Lys His
      35      40      45
Phe Ile Ser Pro Phe Val Gly Phe Val Asn Glu Ile Ser Arg Asn Phe
      50      55      60
Phe Tyr Gly Ile Val Ser Thr His Cys Phe Ile Val Pro Val Asp Ser
      65      70      75      80
Phe His Phe Asp Gln Ile Asn Gln Ser Phe Glu Val Phe Phe Cys Thr
      85      90      95
Asp Arg Asn Asn Asn Arg Thr Arg Ile Cys Thr Gln Asn Ser Leu His
      100      105      110
Leu Ala Asn Asn Phe Lys Glu Val Ser Thr Arg Thr Val His Phe Val
      115      120      125
Asn Val Ser Asp Thr Arg Tyr Val Ile Phe Val Ser Leu Thr Pro Tyr
      130      135      140
Ser Phe Arg Leu Arg Phe Tyr Thr Thr Tyr Ser Thr Val Ser Ser Asn
      145      150      155      160
Ser Thr Ile Lys Asp Thr Lys
      165

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<210> 8088

<211> 139

<212> PRT

<213> B.fragilis

<400> 8088

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Ile Lys Lys Gln Phe Lys Met Pro Thr Ile Gln Gln Leu Val Arg Lys
1      5      10      15
Gly Arg Glu Val Leu Val Glu Lys Ser Lys Ser Pro Ala Leu Asp Ser
      20      25      30
Cys Pro Gln Arg Arg Gly Val Cys Val Arg Val Tyr Thr Thr Pro
      35      40      45

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Lys Lys Pro Asn Ser Ala Met Arg Lys Val Ala Arg Val Arg Leu Thr
 50 55 60
 Asn Gln Lys Glu Val Asn Ser Tyr Ile Pro Gly Glu Gly His Asn Leu
 65 70 75 80
 Gln Glu His Ser Ile Val Leu Val Arg Gly Gly Arg Val Lys Asp Leu
 85 90 95
 Pro Gly Val Arg Tyr His Ile Val Arg Gly Thr Leu Asp Thr Ala Gly
 100 105 110
 Val Ala Gly Arg Thr Gln Arg Arg Ser Lys Tyr Gly Ala Lys Arg Pro
 115 120 125
 Lys Pro Gly Gln Ala Ala Pro Ala Lys Lys Lys
 130 135

<210> 8089
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 8089
 His Leu Val Lys Glu Ile Ile Phe Val Gln Lys Lys Ile Leu Arg Pro
 1 5 10 15
 Met Lys Asn Ile Asn Tyr Ser Ile Lys Lys Gln Phe Lys Ile Ser Asp
 20 25 30
 Glu Gly Ile Cys Leu Leu Pro Met Leu Leu Arg Ala Leu Cys Arg Leu
 35 40 45
 Thr Lys Lys Thr Ala Val Thr Thr Gly Arg Asn Leu Phe Gln Leu Leu
 50 55 60
 Leu Val His Arg Arg Gly Asn His His Thr Ile Ser Pro Asp Gly Glu
 65 70 75 80
 Cys Lys Lys Asp Pro Asp Phe Phe Phe Val
 85 90

<210> 8090
 <211> 709
 <212> PRT
 <213> B.fragilis

<400> 8090
 Arg Lys Lys Lys Met Ala Lys Asn Asp Leu His Leu Thr Arg Asn Ile
 1 5 10 15
 Gly Ile Met Ala His Ile Asp Ala Gly Lys Thr Thr Thr Ser Glu Arg
 20 25 30
 Ile Leu Phe Tyr Thr Gly Leu Thr His Lys Ile Gly Glu Val His Asp
 35 40 45
 Gly Ala Ala Thr Met Asp Trp Met Glu Gln Glu Gln Glu Arg Gly Ile
 50 55 60
 Thr Ile Thr Ser Ala Ala Thr Thr Thr Arg Trp Lys Tyr Ala Gly Asp
 65 70 75 80
 Thr Tyr Lys Ile Asn Leu Ile Asp Thr Pro Gly His Val Asp Phe Thr
 85 90 95
 Ala Glu Val Glu Arg Ser Leu Arg Ile Leu Asp Gly Ala Val Ala Ala
 100 105 110
 Tyr Cys Ala Val Gly Gly Val Glu Pro Gln Ser Glu Thr Val Trp Arg
 115 120 125
 Gln Ala Asp Lys Tyr Asn Val Pro Arg Ile Ala Tyr Val Asn Lys Met
 130 135 140
 Asp Arg Ser Gly Ala Asp Phe Phe Glu Val Val Arg Gln Met Lys Ala
 145 150 155 160
 Val Leu Gly Ala Asn Pro Cys Pro Val Val Ile Pro Ile Gly Ala Glu

			165				170				175				
Glu	Asn	Phe	Lys	Gly	Leu	Val	Asp	Leu	Ile	Lys	Met	Lys	Ala	Ile	Tyr
			180						185				190		
Trp	His	Asp	Glu	Thr	Met	Gly	Ala	Asp	Tyr	Thr	Ile	Glu	Glu	Ile	Pro
			195					200					205		
Ala	Asn	Leu	Val	Asp	Glu	Ala	Asn	Glu	Trp	Arg	Asp	Lys	Met	Leu	Glu
			210				215				220				
Lys	Val	Ala	Glu	Phe	Asp	Asp	Ala	Leu	Met	Glu	Lys	Tyr	Phe	Asp	Asp
225					230					235				240	
Pro	Ser	Thr	Ile	Thr	Glu	Glu	Glu	Val	Leu	Arg	Ala	Leu	Arg	Asn	Ala
				245					250					255	
Thr	Val	Gln	Met	Ala	Val	Val	Pro	Met	Leu	Cys	Gly	Ser	Ser	Phe	Lys
			260					265					270		
Asn	Lys	Gly	Val	Gln	Thr	Leu	Leu	Asp	Tyr	Val	Cys	Ala	Phe	Leu	Pro
		275					280					285			
Ser	Pro	Leu	Asp	Ala	Glu	Asn	Val	Val	Gly	Thr	Asn	Pro	Asp	Thr	Gly
	290					295					300				
Ala	Glu	Glu	Asp	Arg	Lys	Pro	Ser	Glu	Asp	Asp	Lys	Thr	Ser	Ala	Leu
305					310					315					320
Ala	Phe	Lys	Ile	Ala	Thr	Asp	Pro	Tyr	Val	Gly	Arg	Leu	Thr	Phe	Phe
			325						330					335	
Arg	Val	Tyr	Ser	Gly	Lys	Ile	Glu	Ala	Gly	Ser	Tyr	Ile	Tyr	Asn	Ser
			340					345					350		
Arg	Ser	Gly	Lys	Lys	Glu	Arg	Val	Ser	Arg	Leu	Phe	Gln	Met	His	Ser
		355					360					365			
Asn	Lys	Gln	Asn	Pro	Val	Glu	Val	Ile	Gly	Ala	Gly	Asp	Ile	Gly	Ala
	370					375					380				
Gly	Val	Gly	Phe	Lys	Asp	Ile	His	Thr	Gly	Asp	Thr	Leu	Cys	Asp	Glu
385					390					395					400
Thr	Ala	Pro	Ile	Val	Leu	Glu	Ser	Met	Asp	Phe	Pro	Glu	Pro	Val	Ile
			405						410					415	
Gly	Ile	Ala	Val	Glu	Pro	Lys	Thr	Gln	Lys	Asp	Met	Asp	Lys	Leu	Ser
			420					425					430		
Asn	Gly	Leu	Ala	Lys	Leu	Ala	Glu	Glu	Asp	Pro	Thr	Phe	Thr	Val	Lys
		435					440					445			
Thr	Asp	Glu	Gln	Thr	Gly	Gln	Thr	Val	Ile	Ser	Gly	Met	Gly	Glu	Leu
	450					455					460				
His	Leu	Asp	Ile	Ile	Ile	Asp	Arg	Leu	Lys	Arg	Glu	Phe	Lys	Val	Glu
465					470					475					480
Cys	Asn	Gln	Gly	Lys	Pro	Gln	Val	Asn	Tyr	Lys	Glu	Ala	Ile	Thr	Lys
			485						490					495	
Thr	Val	Asn	Leu	Arg	Glu	Val	Tyr	Lys	Lys	Gln	Ser	Gly	Gly	Arg	Gly
		500						505					510		
Lys	Phe	Ala	Asp	Ile	Ile	Val	Asn	Ile	Gly	Pro	Val	Asp	Glu	Asp	Phe
		515					520					525			
Thr	Gln	Gly	Gly	Leu	Gln	Phe	Val	Asp	Glu	Val	Lys	Gly	Gly	Asn	Ile
	530					535					540				
Pro	Lys	Glu	Phe	Ile	Pro	Ser	Val	Gln	Lys	Gly	Phe	Gln	Thr	Ala	Met
545					550				555						560
Lys	Asn	Gly	Val	Leu	Ala	Gly	Tyr	Pro	Leu	Asp	Ser	Leu	Lys	Val	Thr
			565						570					575	
Leu	Val	Asp	Gly	Ser	Phe	His	Pro	Gly	Asp	Ser	Asp	Gln	Leu	Ser	Phe
		580						585					590		
Glu	Ile	Cys	Ala	Ile	Gln	Ala	Tyr	Lys	Asn	Ala	Cys	Ala	Lys	Ala	Gly
		595					600					605			
Pro	Val	Leu	Met	Glu	Pro	Ile	Met	Lys	Leu	Glu	Val	Val	Thr	Pro	Glu
	610					615						620			
Glu	Asn	Met	Gly	Asp	Val	Ile	Gly	Asp	Leu	Asn	Lys	Arg	Arg	Gly	Gln
625					630					635					640

Val Glu Gly Met Glu Ser Ser Arg Ser Gly Ala Arg Ile Val Lys Ala
 645 650 655
 Met Val Pro Leu Ala Glu Met Phe Gly Tyr Val Thr Ala Leu Arg Thr
 660 665 670
 Ile Thr Ser Gly Arg Ala Thr Ser Ser Met Val Tyr Ser His His Ala
 675 680 685
 Gln Val Ser Ser Ser Ile Ala Lys Ala Val Leu Glu Glu Val Lys Gly
 690 695 700
 Arg Ala Asp Leu Leu
 705

<210> 8091
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8091
 Leu Lys Glu Leu Met Ser Gln Lys Ile Arg Ile Lys Leu Lys Ser Tyr
 1 5 10 15
 Asp His Asn Leu Val Asp Lys Ser Ala Glu Lys Ile Val Arg Thr Val
 20 25 30
 Lys Ala Thr Gly Ala Ile Val Ser Gly Pro Ile Pro Leu Pro Thr His
 35 40 45
 Lys Arg Ile Phe Thr Val Asn Arg Ser Thr Phe Val Asn Lys Lys Ser
 50 55 60
 Arg Glu Gln Phe Glu Leu Ser Ser Phe Lys Arg Leu Ile Asp Ile Tyr
 65 70 75 80
 Ser Ser Thr Ala Lys Thr Val Asp Ala Leu Met Lys Leu Glu Leu Pro
 85 90 95
 Ser Gly Val Glu Val Glu Ile Lys Val
 100 105

<210> 8092
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 8092
 Phe Met Gly Ser Gly Asn Ala Lys Phe Leu Val Gly Leu Gly Ile Gly
 1 5 10 15
 Ser Ala Ile Gly Ala Leu Val Tyr His Phe Ser Arg Thr Ala Lys Ala
 20 25 30
 Lys Lys Leu Lys Asn Asp Val Phe Asn Ala Leu His Glu Ile Glu Ala
 35 40 45
 Asp Ala Glu Leu Ala Val Val Glu Ala Lys Asp Lys Ala Val Lys Ala
 50 55 60
 Gly Ala Lys Val Ala Gly Lys Val Ala Asp Lys Ala Thr Glu Val Lys
 65 70 75 80
 Glu Lys Leu Thr Pro Asn Ser
 85

<210> 8093
 <211> 382
 <212> PRT
 <213> B.fragilis

<400> 8093
 Ile Asn Tyr Ile Met Glu Leu Lys Lys Lys Glu Asn Ile Gly Trp Ile
 1 5 10 15

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Asp Leu Leu Arg Val Leu Ala Cys Phe Phe Val Val Phe Ser His Ser
      20                      25                      30
Cys Asp Ala Phe Ile Gly Gln Phe Asp Ala Asn Arg Glu Ser Phe Leu
      35                      40                      45
Thr Gly Val Phe Leu Gly Ser Leu Met Arg Pro Cys Val Pro Ile Phe
      50                      55                      60
Val Met Met Thr Gly Val Leu Leu Leu Pro Val Gln Thr Asp Met Ala
      65                      70                      75                      80
Ala Phe Tyr Lys Lys Arg Ile Gly Arg Leu Ile Pro Pro Met Ile Phe
      85                      90                      95
Trp Ser Leu Val Leu Pro Val Leu Tyr Phe Ile Tyr Leu Asn Tyr Ile
      100                     105                     110
Asn Pro Asp Thr Gln Asn Pro Leu Ile Ser Met Pro Asp His Ser Leu
      115                     120                     125
Glu Ala Leu Trp Phe Lys Leu Tyr Thr Phe Ile Phe Asn Phe Asn Phe
      130                     135                     140
Asp Thr Val Pro Leu Trp Tyr Leu Tyr Met Leu Ile Gly Leu Tyr Leu
      145                     150                     155                     160
Ile Met Pro Ile Ile Ser Gly Trp Leu Glu Lys Val Ser Lys Lys Glu
      165                     170                     175
Leu Lys Leu Phe Leu Gly Ile Trp Gly Ile Ser Leu Ile Ala Pro Tyr
      180                     185                     190
Val Lys Met Phe Ala Pro Ala Leu Gly Tyr Gln Gly Asn Tyr Gly Asn
      195                     200                     205
Met Gly Leu Trp Gly Val Cys Asp Trp Asn Asp Tyr Gly Thr Phe Tyr
      210                     215                     220
Tyr Phe Ser Gly Phe Ile Gly Tyr Leu Leu Leu Ala Tyr Tyr Leu Thr
      225                     230                     235                     240
Lys Tyr Pro Leu Lys Trp Ser Trp Lys Lys Leu Leu Ser Ile Thr Ile
      245                     250                     255
Pro Met Phe Leu Thr Gly Tyr Leu Ile Thr Ser Tyr Gly Tyr Val Ile
      260                     265                     270
Thr Gln Asn Tyr Phe Pro Gly Asn Tyr Ala Tyr Leu Glu Ile Val Trp
      275                     280                     285
Tyr Phe Ala Gly Ile Asn Val Phe Met Met Thr Phe Pro Val Phe Val
      290                     295                     300
Ile Val Gln Lys Ile Lys Val Pro Ser Asn His Arg Leu Ser His Met
      305                     310                     315                     320
Ala Ser Leu Ala Phe Gly Ile Tyr Leu Ser His Tyr Val Phe Val Phe
      325                     330                     335
Ile Ala Tyr Asp Leu Leu Asp Thr Glu Leu Leu Pro Tyr Thr Val Arg
      340                     345                     350
Ile Ile Cys Met Ala Cys Ile Val Phe Leu Thr Cys Tyr Ala Ile Val
      355                     360                     365
Trp Leu Met Ser Lys Ser Lys Leu Thr Asn Arg Phe Ile Arg
      370                     375                     380

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<210> 8094

<211> 1437

<212> PRT

<213> B.fragilis

<400> 8094

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Leu Ile Ser Ile Leu Tyr Asn Tyr Lys Ser Met Ala Phe Arg Lys Glu
1                      5                      10                      15
Asn Lys Ile Lys Ser Asn Phe Ser Lys Ile Ser Ile Gly Leu Ala Ser
      20                      25                      30
Pro Glu Glu Ile Leu Glu Asn Ser Ser Gly Glu Val Leu Lys Pro Glu
      35                      40                      45

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Thr Ile Asn Tyr Arg Thr Tyr Lys Pro Glu Arg Asp Gly Leu Phe Cys
 50 55 60
 Glu Arg Ile Phe Gly Pro Ile Lys Asp Tyr Glu Cys His Cys Gly Lys
 65 70 75 80
 Tyr Lys Arg Ile Arg Tyr Lys Gly Ile Val Cys Asp Arg Cys Gly Val
 85 90 95
 Glu Val Thr Glu Lys Lys Val Arg Arg Glu Arg Met Gly His Ile Gln
 100 105 110
 Leu Val Val Pro Val Ala His Ile Trp Tyr Phe Arg Ser Leu Pro Asn
 115 120 125
 Lys Ile Gly Tyr Leu Leu Gly Leu Pro Thr Lys Lys Leu Asp Ser Ile
 130 135 140
 Ile Tyr Tyr Glu Arg Tyr Val Val Ile Gln Pro Gly Val Lys Ala Glu
 145 150 155 160
 Asp Gly Ile Ala Glu Phe Asp Leu Leu Ser Glu Glu Glu Tyr Leu Asp
 165 170 175
 Ile Leu Asp Thr Leu Pro Lys Asp Asn Gln Tyr Leu Glu Asp Thr Asp
 180 185 190
 Pro Asn Lys Phe Ile Ala Lys Met Gly Ala Glu Ala Ile Tyr Asp Leu
 195 200 205
 Leu Ala Arg Leu Asp Leu Asp Ala Leu Ser Tyr Glu Leu Arg His Arg
 210 215 220
 Ala Gly Asn Asp Ala Ser Gln Gln Arg Lys Asn Glu Ala Leu Lys Arg
 225 230 235 240
 Leu Gln Val Val Glu Ser Phe Arg Ala Ser Arg Gly Arg Asn Lys Pro
 245 250 255
 Glu Trp Met Ile Val Arg Ile Val Pro Val Ile Pro Pro Glu Leu Arg
 260 265 270
 Pro Leu Val Pro Leu Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu Asn
 275 280 285
 Asp Leu Tyr Arg Arg Val Ile Ile Arg Asn Asn Arg Leu Lys Arg Leu
 290 295 300
 Ile Glu Ile Lys Ala Pro Glu Val Ile Leu Arg Asn Glu Lys Arg Met
 305 310 315 320
 Leu Gln Glu Ser Val Asp Ser Leu Phe Asp Asn Ser Arg Lys Ser Ser
 325 330 335
 Ala Val Lys Thr Asp Ala Asn Arg Pro Leu Lys Ser Leu Ser Asp Ser
 340 345 350
 Leu Lys Gly Lys Gln Gly Arg Phe Arg Gln Asn Leu Leu Gly Lys Arg
 355 360 365
 Val Asp Tyr Ser Ala Arg Ser Val Ile Val Val Gly Pro Glu Leu Arg
 370 375 380
 Met His Glu Cys Gly Ile Pro Lys Leu Met Ala Ala Glu Leu Tyr Lys
 385 390 395 400
 Pro Phe Ile Ile Arg Lys Leu Ile Glu Arg Gly Ile Val Lys Thr Val
 405 410 415
 Lys Ser Ala Lys Lys Ile Val Asp Arg Lys Glu Pro Val Ile Trp Asp
 420 425 430
 Ile Leu Glu His Val Met Lys Gly His Pro Val Leu Leu Asn Arg Ala
 435 440 445
 Pro Thr Leu His Arg Leu Gly Ile Gln Ala Phe Gln Pro Lys Met Ile
 450 455 460
 Glu Gly Lys Ala Ile Gln Leu His Pro Leu Ala Cys Thr Ala Phe Asn
 465 470 475 480
 Ala Asp Phe Asp Gly Asp Gln Met Ala Val His Leu Pro Leu Ser Asn
 485 490 495
 Glu Ala Val Leu Glu Ala Gln Met Leu Met Leu Ala Ser His Asn Ile
 500 505 510
 Leu Asn Pro Ala Asn Gly Ala Pro Ile Thr Val Pro Ser Gln Asp Met

Arg Leu Ala Glu Val Arg Phe Ile Asp Val Asn Thr Gly Ile Val Leu
 995 1000 1005
 Ser Thr His Asn Val Pro Tyr Gly Ser Thr Leu Tyr Val Ala Asp Gly
 1010 1015 1020
 Glu Val Val Glu Lys Gly Lys Leu Ile Ala Lys Trp Asp Pro Phe Asn
 1025 1030 1035 1040
 Ala Val Ile Ile Thr Glu Ala Thr Gly Lys Ile Glu Phe Glu Gly Val
 1045 1050 1055
 Ile Glu Asn Val Thr Tyr Lys Ile Glu Ser Asp Glu Ala Thr Gly Leu
 1060 1065 1070
 Arg Glu Ile Ile Ile Ile Glu Ser Lys Asp Lys Thr Lys Val Pro Ser
 1075 1080 1085
 Ala His Ile Leu Thr Glu Asp Gly Asp Leu Ile Arg Thr Tyr Asn Leu
 1090 1095 1100
 Pro Val Gly Gly His Val Val Ile Glu Asn Gly Gln Lys Val Lys Ala
 1105 1110 1115 1120
 Gly Glu Val Ile Val Lys Ile Pro Arg Ala Val Gly Lys Ala Gly Asp
 1125 1130 1135
 Ile Thr Gly Gly Leu Pro Arg Val Thr Glu Leu Phe Glu Ala Arg Asn
 1140 1145 1150
 Pro Ser Asn Pro Ala Val Val Ser Glu Ile Asp Gly Glu Val Thr Met
 1155 1160 1165
 Gly Lys Val Lys Arg Gly Asn Arg Glu Ile Ile Val Thr Ser Lys Thr
 1170 1175 1180
 Gly Glu Val Lys Lys Tyr Leu Val Pro Leu Ser Lys Gln Ile Leu Val
 1185 1190 1195 1200
 Gln Glu Asn Asp Tyr Val Arg Ala Gly Thr Pro Leu Ser Asp Gly Ala
 1205 1210 1215
 Thr Thr Pro Ala Asp Ile Leu Ala Ile Lys Gly Pro Thr Ala Val Gln
 1220 1225 1230
 Glu Tyr Ile Val Asn Glu Val Gln Asp Val Tyr Arg Leu Gln Gly Val
 1235 1240 1245
 Lys Ile Asn Asp Lys His Phe Glu Ile Ile Val Arg Gln Met Met Arg
 1250 1255 1260
 Lys Val Thr Ile Asp Glu Pro Gly Asp Thr Arg Phe Leu Glu Gln Gln
 1265 1270 1275 1280
 Val Val Asp Lys Leu Glu Phe Met Glu Glu Asn Asp Arg Ile Trp Gly
 1285 1290 1295
 Lys Lys Val Val Val Asp Ala Gly Asp Ser Glu Asn Leu Lys Ala Gly
 1300 1305 1310
 Gln Ile Val Thr Ala Arg Lys Leu Arg Asp Glu Asn Ser Met Leu Lys
 1315 1320 1325
 Arg Arg Asp Leu Lys Pro Val Glu Val Arg Asp Ala Val Ala Ala Thr
 1330 1335 1340
 Ser Thr Gln Ile Leu Gln Gly Ile Thr Arg Ala Ala Leu Gln Thr Ser
 1345 1350 1355 1360
 Ser Phe Met Ser Ala Ala Ser Phe Gln Glu Thr Thr Lys Val Leu Asn
 1365 1370 1375
 Glu Ala Ala Ile Asn Gly Lys Ile Asp Lys Leu Glu Gly Met Lys Glu
 1380 1385 1390
 Asn Val Ile Cys Gly His Leu Ile Pro Ala Gly Thr Gly Leu Arg Glu
 1395 1400 1405
 Phe Asp Lys Ile Ile Val Gly Ser Lys Glu Glu Tyr Asp Arg Ile Leu
 1410 1415 1420
 Ala Asn Lys Lys Thr Val Leu Asp Tyr Asn Glu Val Glu
 1425 1430 1435

<210> 8095

<211> 110

<212> PRT

<213> B.fragilis

<400> 8095

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Asn Gln Ser Ile Ile Lys Asp Met Glu Asn Gln Asn Pro Asp Asn Gln
1           5           10           15
Leu Gln Ile Glu Leu Lys Glu Glu Val Ala Gln Gly Thr Tyr Ala Asn
          20           25           30
Leu Ala Ile Ile Thr His Ser Ser Ser Glu Phe Val Leu Asp Phe Val
          35           40           45
Arg Val Leu Pro Gly Leu Pro Lys Ala Gly Val Gln Ser Arg Val Ile
          50           55           60
Leu Ala Pro Glu His Ala Lys Arg Leu Gln Arg Ala Leu Glu Glu Asn
65           70           75           80
Ile Ala Lys Tyr Glu Arg Ala Phe Gly Pro Ile Arg Leu Gln Glu Asp
          85           90           95
Gly Val Asp Thr Pro Pro Ile Leu Asp Ile Lys Gly Glu Ala
          100           105           110

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<210> 8096

<211> 125

<212> PRT

<213> B.fragilis

<400> 8096

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Tyr Leu Lys Ile Ser Glu Met Pro Gly Leu Leu Gly Lys Lys Ile Gly
1           5           10           15
Met Thr Ser Val Phe Ser Ala Asp Gly Lys Asn Val Pro Cys Thr Val
          20           25           30
Ile Glu Ala Gly Pro Cys Val Val Thr Gln Val Lys Thr Val Glu Lys
          35           40           45
Asp Gly Tyr Ala Ala Val Gln Leu Gly Phe Gln Asp Lys Lys Glu Lys
          50           55           60
His Thr Thr Lys Pro Leu Met Gly His Phe Lys Lys Ala Gly Val Thr
65           70           75           80
Pro Lys Arg His Leu Ala Glu Phe Lys Glu Phe Glu Asn Glu Leu Asn
          85           90           95
Leu Gly Asp Thr Val Thr Val Glu Leu Phe Asp Gly Ala Asp Tyr Val
          100           105           110
Asp Val Val Gly Leu Leu Lys Val Lys Ala Phe Arg Val
          115           120           125

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<210> 8097

<211> 64

<212> PRT

<213> B.fragilis

<400> 8097

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Leu His Thr Phe Asn Leu Ala Thr Ala Phe Val Gln Val Thr Asp Asn
1           5           10           15
Val Thr His Val Phe Phe Arg Ser Asn Asp Phe Gln Leu His Asp Arg
          20           25           30
Leu His Gln Tyr Arg Thr Cys Leu Ser Thr Ser Ile Leu Ile Cys Leu
          35           40           45
Asp Ser Thr Asp Phe Glu Arg Gln Leu Val Arg Val Thr Arg Val Glu
          50           55           60

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<210> 8098

<211> 276

<212> PRT

<213> B.fragilis

<400> 8098

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Phe Val Ser Leu Ile Leu Asn Phe Ile Lys Lys Tyr Lys Glu Leu Asp
1           5           10           15
Ala Glu Leu Lys Arg Lys Lys Phe Ala Ile Thr Ile Gly Asp Glu Leu
          20           25           30
Pro Ala Gly Ile Ile Gln Met Ala Lys Val Tyr Ile Ala Lys Lys Arg
          35           40           45
Lys Ile Gly Val Gly Asp Lys Met Ala Gly Arg His Gly Asn Lys Gly
          50           55           60
Ile Val Ser Arg Val Val Arg Gln Glu Asp Met Pro Phe Leu Glu Asp
65           70           75           80
Gly Thr Pro Val Asp Ile Val Leu Asn Pro Leu Gly Val Pro Ser Arg
          85           90           95
Met Asn Ile Gly Gln Ile Phe Glu Ala Val Leu Gly Arg Ala Gly Lys
          100          105          110
Asn Leu Gly Val Lys Phe Ala Thr Pro Ile Phe Asp Gly Ala Thr Leu
          115          120          125
Asp Asp Leu Asn Glu Trp Thr Asp Lys Ala Gly Leu Pro Arg Tyr Cys
          130          135          140
Lys Thr Tyr Leu Cys Asp Gly Gly Thr Gly Glu Arg Phe Asp Gln Pro
145           150           155           160
Ala Thr Val Gly Val Thr Tyr Met Leu Lys Leu Gly His Met Val Glu
          165          170          175
Asp Lys Met His Ala Arg Ser Ile Gly Pro Tyr Ser Leu Ile Thr Gln
          180          185          190
Gln Pro Leu Gly Gly Lys Ala Gln Phe Gly Gly Gln Arg Phe Gly Glu
          195          200          205
Met Glu Val Trp Ala Leu Glu Gly Phe Gly Ala Ser His Ile Leu Gln
          210          215          220
Glu Ile Leu Thr Ile Lys Ser Asp Asp Val Val Gly Arg Ser Lys Ala
225           230           235           240
Tyr Glu Ala Ile Val Lys Gly Glu Pro Met Pro Gln Pro Gly Ile Pro
          245          250          255
Glu Ser Leu Asn Val Leu Leu His Glu Leu Arg Gly Leu Gly Leu Ser
          260          265          270
Ile Asn Leu Glu
          275

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<210> 8099

<211> 142

<212> PRT

<213> B.fragilis

<400> 8099

```

Arg Asn Glu Phe Leu Arg Asn Val Thr Thr Leu His Phe Ile Asn Glu
1           5           10           15
Leu Gln Thr Thr Leu Ser Lys Val Phe Ile Asn Arg Ala Asp Val His
          20           25           30
Asn Asn Ile Ser Glu Leu Thr Thr Thr Arg Leu Phe Leu Ile Asn
          35           40           45
Leu Thr Gln Val Asn Cys Leu Ser Asp Ser Leu Phe Val Val Asn Leu
          50           55           60
Arg Phe Thr Leu Val Thr Phe Tyr Phe Glu Phe Thr Phe Gln Thr Val
65           70           75           80
Asp Asn Asp Ile Gln Val Lys Leu Thr His Thr Gly Asn Asn Cys Leu
          85           90           95

```

Thr Cys Leu Phe Val Ser Phe His Cys Glu Cys Arg Val Phe Phe Ser
 100 105 110
 Gln Phe Ser Gln Thr Val Arg Gln Phe Val His Ile Leu Leu Ser Phe
 115 120 125
 Arg Phe His Ser Asn Thr Asp Tyr Arg Phe Arg Glu Val His
 130 135 140

<210> 8100
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8100
 Ile Arg Ser Ser Ile Thr Lys Glu Val Leu Gly Ser Ser Pro Glu Phe
 1 5 10 15
 Gly Ser Ser Gln Lys Arg Tyr Cys Gly Phe Ser Ala Met Ala Arg Ala
 20 25 30
 Met Ala Thr Arg Phe Cys Ile Pro Pro Leu Ile Ser Pro Gly Asn Leu
 35 40 45
 Ser Leu Ala Ser Val Arg Leu Thr Arg Ser Arg Gln Asn Ile Ala Arg
 50 55 60
 Leu Val Cys Ser Arg Lys Val Ser Val Pro Asn Met Leu Ser Gly Asn
 65 70 75 80
 Ile Thr Leu Ser Lys Thr Asp Met Glu Ser Asn Asn Ala Ala Leu
 85 90 95

<210> 8101
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 8101
 Gln Arg Leu Leu Lys Cys Leu Asn Leu Phe Gly Met Ala Lys Ile Lys
 1 5 10 15
 Thr Glu Lys Gln Tyr Lys Ala Ala Cys Ser Arg Ile Glu Glu Leu Leu
 20 25 30
 Lys Val Val Ser Asn Asp Thr Pro Thr Asp Asp Lys Asn Phe Leu Glu
 35 40 45
 Leu Asp Leu Ile Ser Asp Leu Val Ala Asp Tyr Glu Glu Glu His Phe
 50 55 60
 Pro Ile Glu Ala Pro Ser Leu Val Asp Val Ile Lys Leu Arg Met Tyr
 65 70 75 80
 Glu Met Gly Leu Thr Gln Thr Lys Leu Ser Glu Leu Leu Asn Val Ser
 85 90 95
 Pro Ser Arg Ile Ser Glu Tyr Leu Ser Gly Lys Cys Glu Pro Thr Leu
 100 105 110
 Lys Val Ala Arg Glu Ile Ser Arg Lys Leu Asn Ile Asp Ala Asn Ile
 115 120 125
 Val Leu Gly Val
 130

<210> 8102
 <211> 495
 <212> PRT
 <213> B.fragilis

<400> 8102
 Thr His Ser Pro Met Ser Phe Ile Ala Asp Lys Ile Val Met Asp Gly
 1 5 10 15

Leu Thr Tyr Asp Asp Val Leu Leu Ile Pro Ala Tyr Ser Glu Val Leu
 20 25 30
 Pro Arg Thr Val Asp Leu Ser Thr Lys Phe Ser Arg Asn Ile Glu Leu
 35 40 45
 Lys Ile Pro Phe Val Thr Ala Ala Met Asp Thr Val Thr Glu Ala Lys
 50 55 60
 Met Ala Ile Ala Ile Ala Arg Glu Gly Gly Ile Gly Val Ile His Lys
 65 70 75 80
 Asn Met Ser Ile Lys Glu Gln Ala Lys Gln Val Ala Thr Val Lys Arg
 85 90 95
 Ala Glu Asn Gly Met Ile Tyr Asp Pro Val Thr Ile Lys Gln Gly Ser
 100 105 110
 Thr Val Arg Asp Ala Leu Ala Leu Met Ala Glu Tyr Lys Ile Gly Gly
 115 120 125
 Ile Pro Val Val Asp Asp Asn Arg Tyr Leu Val Gly Ile Val Thr Asn
 130 135 140
 Arg Asp Leu Arg Phe Glu Arg Asn Met Asp Lys Arg Ile Asp Glu Val
 145 150 155 160
 Met Thr Lys Glu Asn Leu Val Thr Thr Asn Gln Ser Thr Asp Leu Glu
 165 170 175
 Ala Ala Ser Gln Ile Leu Gln Tyr His Lys Ile Glu Lys Leu Pro Val
 180 185 190
 Val Asp Lys Glu Gly Lys Leu Ile Gly Leu Val Thr Tyr Lys Asp Ile
 195 200 205
 Thr Lys Ala Lys Asp Lys Pro Met Ala Cys Lys Asp Ser Lys Gly Arg
 210 215 220
 Leu Arg Val Ala Ala Gly Val Gly Val Thr Ala Asp Thr Phe Asp Arg
 225 230 235 240
 Met Gln Ala Leu Val Asp Ala Gly Ala Asp Ala Ile Val Ile Asp Thr
 245 250 255
 Ala His Gly His Ser Lys Gly Val Ile Asp Thr Leu Arg Glu Ala Lys
 260 265 270
 Lys Arg Tyr Pro Asp Ile Asp Ile Val Val Gly Asn Ile Ala Thr Gly
 275 280 285
 Asp Ala Ala Lys Ala Leu Val Glu Ala Gly Ala Asp Gly Val Lys Val
 290 295 300
 Gly Ile Gly Pro Gly Ser Ile Cys Thr Thr Arg Val Val Ala Gly Val
 305 310 315 320
 Gly Val Pro Gln Leu Ser Ala Val Tyr Asp Val Ala Lys Ala Leu Lys
 325 330 335
 Gly Thr Gly Ile Pro Leu Ile Ala Asp Gly Gly Leu Arg Tyr Ser Gly
 340 345 350
 Asp Val Val Lys Ala Leu Ala Ala Gly Gly Tyr Ser Val Met Ile Gly
 355 360 365
 Ser Leu Val Ala Gly Thr Glu Glu Ser Pro Gly Glu Thr Ile Ile Phe
 370 375 380
 Asn Gly Arg Lys Phe Lys Ser Tyr Arg Gly Met Gly Ser Leu Glu Ala
 385 390 395 400
 Met Glu Asn Gly Ser Lys Asp Arg Tyr Phe Gln Ser Gly Glu Met Asp
 405 410 415
 Val Lys Lys Leu Val Pro Glu Gly Ile Ala Ala Arg Val Pro Tyr Lys
 420 425 430
 Gly Thr Leu Tyr Glu Val Ile Tyr Gln Leu Thr Gly Gly Leu Arg Ala
 435 440 445
 Gly Met Gly Tyr Cys Gly Ala Pro Asp Ile Glu Lys Leu His Asp Ala
 450 455 460
 Lys Phe Thr Arg Ile Thr Asn Ala Gly Val Met Glu Ser His Pro His
 465 470 475 480
 Asp Val Thr Ile Thr Ser Glu Ser Pro Asn Tyr Ser Arg Pro Glu

<210> 8103
 <211> 788
 <212> PRT
 <213> B.fragilis

<400> 8103

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Asn Arg Ala Leu Ile Lys Lys Asp Met Asp Arg Arg Asp Tyr Tyr Val
1      5      10      15
Glu Tyr Tyr Glu Val Leu Asp Arg Val Leu Ser Asp Tyr Val Asn Gln
20      25      30
Leu Arg Glu Lys Arg Glu His Trp Leu Lys Met Gly Arg His Asp Val
35      40      45
Gly Val Pro Leu Ile Asn Leu Leu Phe Trp Gln Phe Thr Trp His Arg
50      55      60
Glu Glu Tyr Asp Arg Leu Arg Lys Glu Gly Lys Ser Cys Gly Glu Ala
65      70      75      80
Leu Gly Ser Val Lys Glu Ile Leu Ala Asp Lys Gln Val Glu Glu Trp
85      90      95
Glu Arg Gln Glu Glu Tyr Lys Ile Tyr Asp His Glu Trp Tyr Glu
100     105     110
Ala Leu Ala Pro Tyr Gly Gly Gln Leu Val Ile Tyr Ile Tyr Asn Ala
115     120     125
Arg Gln Leu Val Tyr Leu Thr Pro Leu Ile Glu Arg Leu Glu Glu Pro
130     135     140
Val Leu Leu Leu Ser Glu Tyr Glu Ile Pro Asp Glu Thr Glu Leu Pro
145     150     155     160
Asp Phe Val Thr Ala Ile Thr Leu Glu Phe Thr Lys Thr Ala Pro Leu
165     170     175
Val Asn Pro Phe Leu Lys Glu Trp Phe Pro Leu Ile Phe Gln Tyr Ala
180     185     190
Asn Thr Phe Asp Ile Leu Met Arg Ile Leu Gln Pro Lys Gly Leu Ile
195     200     205
Phe Leu Glu Gly Cys His Tyr Gln Gln Leu Leu Leu Ala Thr Ile Gly
210     215     220
Arg Asp Tyr Gly Val Pro Thr Leu Cys Ile Gln Gln Gly Trp Pro Ser
225     230     235     240
Leu Met His Thr Ala Phe Arg Arg Met Pro Tyr Arg Tyr Tyr Leu Met
245     250     255
Trp Gly Glu Gly Phe Arg Thr Leu Trp Glu Lys His Asn Pro Leu Pro
260     265     270
Asp Phe Val Pro Thr Gly Tyr Met Tyr Gln Val Glu Pro Arg Asn Glu
275     280     285
Thr Lys Lys Glu Cys Val Thr Phe Phe Leu Gln Gly Pro Phe Phe Leu
290     295     300
Ser Asp Lys Arg Tyr Leu Gln Glu Met Ile Arg Leu Ile Gly Thr Val
305     310     315     320
Ala Val Glu Phe Pro Ala Arg Arg Phe Leu Val Arg Glu His Pro Glu
325     330     335
Phe Arg Ile Gly Glu Glu Val Arg Met Glu Trp Glu Gln Ile Pro Asn
340     345     350
Ile Glu Met Val Thr Asp Gly Lys Leu Ala Glu Val Phe Ala Arg Thr
355     360     365
Arg Val Gly Val Ala His Tyr Ser Ser Ser Leu Met Glu Gly Val Ala
370     375     380
His Gly Ala Val Pro Leu Val Tyr Asp Pro Thr Glu Gly Ser Arg Tyr
385     390     395     400
Ser Pro Asp Val Glu Ala Glu Gly Leu Gly Met Ile Ala Lys Thr Lys

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				405					410				415
Glu	Glu	Leu	Thr	Gly	Gly	Leu	Ser	Arg	Ile	Leu	Gly	Asn	Tyr
				420					425				430
Phe	Lys	Gln	Arg	Ile	Glu	Lys	Glu	Gln	Pro	Leu	Trp	Leu	Gln
				435					440				445
Gly	Glu	Glu	Thr	Leu	Arg	Asn	Met	Val	Gly	Phe	Ile	Lys	Glu
				450					455				460
Pro	Pro	Val	Thr	Leu	Lys	Glu	Ile	Tyr	Val	Val	Asp	Thr	Asp
				465					470				475
Thr	Arg	Glu	Arg	Pro	Val	Gly	Val	Ser	Gly	Val	Leu	Arg	Cys
				485					490				495
Cys	Glu	Asp	Phe	Leu	Glu	Met	Cys	Ile	Asp	Ser	Cys	Ile	Asp
				500					505				510
Asp	Glu	Leu	Ile	Ala	Val	Tyr	His	Asp	Cys	Thr	Asp	Arg	Thr
				515					520				525
Ile	Leu	Arg	Gln	Lys	Ala	Ala	Gln	Tyr	Pro	Asp	Lys	Ile	Arg
				530					535				540
Glu	Tyr	Arg	Pro	Ser	Val	Tyr	Pro	Ile	Asp	Leu	Asp	Glu	Glu
				545					550				555
Glu	Lys	Ala	Lys	Leu	Leu	Pro	Pro	Asp	Ser	Ile	His	Thr	Leu
				565					570				575
Tyr	Cys	Asn	Tyr	Ala	Leu	Ser	Lys	Ala	Ser	Tyr	Arg	Tyr	Ala
				580					585				590
Ile	Asp	Ala	Asp	Gln	Val	Tyr	Phe	Thr	Asp	Arg	Leu	Lys	His
				595					600				605
Asp	Ala	Tyr	Arg	Ser	Asp	Lys	Lys	Val	Arg	Phe	Asn	Val	Ala
				610					615				620
Ile	Ser	Tyr	Asn	Leu	Tyr	Arg	Ala	Tyr	Val	Asp	Ser	Phe	Asn
				625					630				635
Glu	Met	Arg	Pro	Phe	Arg	Trp	Leu	Glu	Arg	Ile	Ala	Leu	Trp
				645					650				655
Ala	Ser	Tyr	Ala	Ser	Tyr	Leu	Glu	Lys	Met	Ile	Ile	Arg	Tyr
				660					665				670
Pro	Val	Ser	Met	Ser	Gly	Ile	Asn	Leu	Phe	Arg	Lys	Asp	Arg
				675					680				685
Met	Val	Gly	Leu	Gly	Gln	Glu	His	Pro	Glu	Pro	Asp	Ser	Lys
				690					695				700
Leu	Pro	Pro	Phe	Asn	Gly	Val	Arg	Asp	Thr	Phe	Phe	Glu	Val
				705					710				715
Ala	Asp	Arg	Ile	Phe	Arg	Tyr	Val	Thr	Glu	Thr	Lys	Pro	Asp
				725					730				735
His	Arg	Gly	Val	Glu	Val	Met	Arg	Cys	Pro	Asn	Glu	Ile	Leu
				740					745				750
Gly	Phe	Cys	Trp	Phe	His	Leu	Arg	Ala	Leu	Met	Lys	Glu	His
				755					760				765
Gly	Tyr	Arg	Gln	Ser	Tyr	Arg	Lys	His	Pro	Glu	Val	Phe	Thr
				770					775				780
Gln	Glu	Ile	Ser										
				785									

<210> 8104

<211> 60

<212> PRT

<213> B.fragilis

<400> 8104

Ser	Thr	Ser	Thr	Pro	Phe	Asn	Gly	Leu	Phe	Arg	Gln	Ser	Ala	Ala	Leu
1				5				10					15		
Ser	Leu	Leu	Arg	Leu	His	Ile	Thr	Pro	Thr	Gly	Ser	Thr	Gly	Ile	Leu

20 25 30
 Thr Cys Ser Ala Ile Gly Leu Thr Val Arg Leu Ser Leu Arg Thr Arg
 35 40 45
 Leu Thr Leu Ile Arg Leu Ala Leu Ile Arg Lys Pro
 50 55 60

<210> 8105
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 8105
 Thr Tyr Ala Thr Lys Leu Gln Val Pro Lys Met Lys Ser Lys Phe Glu
 1 5 10 15
 Asp Gly Gln Tyr Leu Asn Ile Tyr His Ile Lys Ser Ala Thr Tyr Ile
 20 25 30
 Asn Ser Phe Leu Phe Asp Gly Gln Thr Gly Leu Thr Thr Arg Pro Thr
 35 40 45
 Glu Ala Ile Ser Gly Thr Pro Ser Ser Ile Leu Ser Leu Cys Leu Arg
 50 55 60
 Leu Leu Lys Ala
 65

<210> 8106
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 8106
 Asn Phe Val Thr Met Lys Lys Leu Ser Lys Ile Lys Leu Thr Asn Leu
 1 5 10 15
 Ser Gln Glu Asp Leu Ala Asp Arg Glu Met Asn Ala Leu Arg Gly Gly
 20 25 30
 His Asn Cys Gly Cys Ala Cys Ser Ser Thr Ser Lys Ala Thr Asn His
 35 40 45
 Ser Ser Asn Glu Asp Arg Asp Leu His Ser Pro Glu Gly Asn Val Ile
 50 55 60
 Cys Thr Trp Val Gly Gly Ala Gly Ser Asp Ile Ser Val Tyr Gly Gly
 65 70 75 80
 Ser Lys Ala Pro Gly Met Pro
 85

<210> 8107
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 8107
 Asn Phe Val Thr Met Lys Lys Leu Ser Lys Ile Lys Leu Thr Asn Leu
 1 5 10 15
 Ser Gln Glu Asp Leu Ala Asp Arg Glu Met Asn Ala Leu Arg Gly Gly
 20 25 30
 His Thr Cys Gly Cys Ala Cys Ile Lys Gly Ala Glu Phe Lys Ala Thr
 35 40 45
 Asn Tyr Ser Ala Asn Val Ala Asp Asp Lys Tyr Ser Pro Glu Gly Asn
 50 55 60
 Ile Ile Cys Asn Trp Val Gly Gly Ser Gly Ser Asp Met Ala Val Tyr
 65 70 75 80
 Gly Gly Ser Lys Val Pro Gly Met Pro

85

<210> 8108
 <211> 259
 <212> PRT
 <213> B.fragilis

<400> 8108

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Pro Gln Arg Thr Asp Ser Phe Gly Arg Gly Arg Trp Lys Leu Phe Val
1      5      10      15
Gln Arg Arg Pro Ser Gly Pro Val Leu Pro Ala Gly Leu Ser Lys Asp
      20      25      30
Asp Ser Leu Leu Phe Ala Glu His Tyr Val Arg Ser Trp Val Glu Asp
      35      40      45
Val Leu Leu Phe Asn Gln Ala Gln Ser Asn Ile Pro Asp Asn Gly Glu
      50      55      60
Ile Asp Lys Leu Val Glu Asn Tyr Arg Lys Ala Leu Ile Met His Thr
65      70      75      80
Tyr Gln Gln Glu Leu Ile Ser Gln Lys Leu Ser Gly Glu Ile Pro Glu
      85      90      95
Gln Glu Ile Ala Asp Tyr Tyr Glu Lys Asn Lys Glu Leu Phe Lys Leu
      100     105     110
Asp Arg Pro Leu Met Lys Gly Leu Phe Ile Lys Val Pro Leu Thr Ala
      115     120     125
Pro Gln Leu Gly Asn Val Arg Lys Trp Tyr Lys Thr Glu Thr Gln Asp
      130     135     140
Ala Val Glu His Leu Glu Lys Tyr Ser Leu Gln Asn Ala Val Lys Tyr
145     150     155     160
Glu Tyr Phe Tyr Asp Lys Trp Val Arg Val Ala Asp Val Leu Asp Met
      165     170     175
Ile Pro Leu Lys Ala Glu Ser Pro Glu Ala Tyr Met Asp Lys Asn Arg
      180     185     190
His Ile Glu Leu Lys Asp Thr Ala Phe Tyr Tyr Phe Leu Asn Ile Ser
      195     200     205
Asp Phe Arg Val Ala Gly Glu Gln Glu Pro Tyr Glu Phe Ala Gln Pro
      210     215     220
Lys Val Lys Asp Met Leu Val Asn Ile Lys Arg Val Asp Phe Met Lys
225     230     235     240
Gln Val Lys Asp Asp Leu Tyr Glu Arg Ala Val Lys Arg Lys Lys Ile
      245     250     255
Ile Asn Tyr

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<210> 8109
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 8109

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Tyr Glu Ile Ala Met Gly Met Phe Asn Val Arg Lys Pro Arg Gly Phe
1      5      10      15
Asn His Gln Tyr Ile Tyr Val Asp Glu Arg Lys Glu Lys Leu Ala Lys
      20      25      30
Met Glu Glu Asp Ala Lys Arg Asp Leu Gly Ile Leu Pro Glu Lys Glu
      35      40      45
Phe Ser Pro Glu Asp Ile Arg Gly Lys Phe Ile Glu Gly Thr Thr His
      50      55      60
Leu Lys Arg Arg Lys Glu Ser Gly Arg Lys Pro Ala His Leu Gly Val
65      70      75      80

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Ile Leu Ala Ile Ile Ala Leu Leu Ile Phe Leu Trp His Tyr Leu Gln
 85 90 95
 Thr Gly Ser Trp Ser Phe
 100

<210> 8110
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 8110
 Lys Arg Glu Ala Leu Gly Lys Phe Asp Lys Tyr Lys Ile Asp Leu Lys
 1 5 10 15
 Gly Met Gln Ala Asp Ser Cys Lys Tyr Glu Phe Leu Leu Asp Asn Leu
 20 25 30
 Phe Phe Ala His Ile Asp Gly Pro Glu Val Gln Lys Gly Lys Val Asn
 35 40 45
 Val Glu Leu Thr Val Lys Lys Thr Ser Arg Ala Phe Glu Leu Ser Phe
 50 55 60
 Arg Thr Glu Gly Ile Val Trp Val Pro Cys Asp Arg Cys Leu Asp Glu
 65 70 75 80
 Met Glu Gln Pro Val Thr Ser Ser Asp Lys Leu Met Val Lys Phe Gly
 85 90 95
 His Glu Tyr Ala Glu Glu Gly Asp Asn Leu Ile Val Ile Pro Glu Glu
 100 105 110
 Glu Gly Glu Ile Asn Val Ala Trp Phe Met Tyr Glu Phe Ile Ala Leu
 115 120 125
 Ala Ile Pro Met Lys His Val His Ala Pro Gly Lys Cys Asn Lys Ala
 130 135 140
 Val Thr Ser Lys Leu Asn Lys His Leu Arg Thr Ser Gly Asp Asp Asp
 145 150 155 160
 Ala Glu Glu Ser Phe Gly Ala Gly Glu Asp Ile Val Val Glu Asp Glu
 165 170 175
 Ala Glu Glu Gln Ile Asp Pro Arg Trp Asn Glu Leu Lys Lys Ile Leu
 180 185 190
 Asp Asn Asn
 195

<210> 8111
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 8111
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile

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      115              120              125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
      130              135              140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
      145              150              155              160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
      165              170              175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
      180              185              190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
      195              200              205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
      210              215              220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
      225              230              235              240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
      245              250              255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
      260              265              270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
      275              280              285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
      290              295              300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
      305              310              315              320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
      325              330              335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
      340              345              350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
      355              360              365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
      370              375              380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
      385              390              395              400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
      405              410              415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
      420              425              430

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<210> 8112

<211> 63

<212> PRT

<213> B.fragilis

<400> 8112

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Lys Lys Met Ala His Pro Lys Arg Arg Gln Ser Lys Thr Arg Thr Ala
1          5          10          15
Lys Arg Arg Thr His Asp Lys Ala Val Ala Pro Thr Leu Ala Ile Cys
20          25          30
Pro Asn Cys Gly Glu Trp His Val Tyr His Thr Val Cys Gly Ala Cys
35          40          45
Gly Tyr Tyr Arg Gly Lys Leu Ala Ile Glu Lys Glu Ala Ala Val
50          55          60

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<210> 8113

<211> 728

<212> PRT

<213> B.fragilis

<400> 8113

Ile Lys Met Ala Gly Lys Ile Asn Leu Thr Asp Gln Leu Lys Lys Tyr
 1 5 10 15
 Phe Gly Phe Asp Asn Phe Lys Gly Asn Gln Glu Pro Ile Ile Gln Asn
 20 25 30
 Leu Leu Asp Gly Asn Asp Thr Phe Val Leu Met Pro Thr Gly Gly Gly
 35 40 45
 Lys Ser Leu Cys Tyr Gln Leu Pro Ser Leu Leu Met Glu Gly Thr Ala
 50 55 60
 Ile Val Ile Ser Pro Leu Ile Ala Leu Met Lys Asn Gln Val Asp Ala
 65 70 75 80
 Met Arg Asn Phe Ser Glu Glu Asp Gly Val Ala His Phe Ile Asn Ser
 85 90 95
 Ser Leu Asn Lys Gly Ala Ile Asp Gln Val Arg Ser Asp Ile Leu Ala
 100 105 110
 Gly Lys Thr Lys Leu Leu Tyr Val Ala Pro Glu Ser Leu Thr Lys Glu
 115 120 125
 Glu Asn Val Glu Phe Leu Arg Ser Val Lys Ile Ser Phe Tyr Ala Val
 130 135 140
 Asp Glu Ala His Cys Ile Ser Glu Trp Gly His Asp Phe Arg Pro Glu
 145 150 155 160
 Tyr Arg Arg Ile Arg Pro Ile Ile Asn Glu Ile Gly Lys Ala Pro Leu
 165 170 175
 Ile Ala Leu Thr Ala Thr Ala Thr Pro Lys Val Gln His Asp Ile Gln
 180 185 190
 Lys Asn Leu Gly Met Val Asp Ala His Val Phe Lys Ser Ser Phe Asn
 195 200 205
 Arg Pro Asn Leu Tyr Tyr Glu Val Arg Pro Lys Thr Gln Asn Val Asp
 210 215 220
 Lys Asp Ile Ile Lys Phe Ile Lys Asn Asn Pro Glu Lys Ser Gly Ile
 225 230 235 240
 Ile Tyr Cys Leu Ser Arg Lys Lys Val Glu Glu Leu Ala Glu Ile Leu
 245 250 255
 Gln Ala Asn Gly Ile Asn Ala Arg Ala Tyr His Ala Gly Met Asp Ser
 260 265 270
 Ala Thr Arg Thr Gln Asn Gln Asp Phe Leu Met Glu Lys Ile Asp
 275 280 285
 Val Ile Val Ala Thr Ile Ala Phe Gly Met Gly Ile Asp Lys Pro Asp
 290 295 300
 Val Arg Tyr Val Ile His Tyr Asp Ile Pro Lys Ser Leu Glu Gly Tyr
 305 310 315 320
 Tyr Gln Glu Thr Gly Arg Ala Gly Arg Asp Gly Gly Glu Gly Gln Cys
 325 330 335
 Ile Thr Phe Tyr Thr Asn Lys Asp Leu Gln Lys Leu Glu Lys Phe Met
 340 345 350
 Gln Gly Lys Pro Val Ala Glu Gln Glu Ile Gly Lys Gln Leu Leu Leu
 355 360 365
 Glu Thr Ala Ala Tyr Ala Glu Ser Ser Val Cys Arg Arg Lys Thr Leu
 370 375 380
 Leu His Tyr Phe Gly Glu Glu Tyr Thr Glu Glu Asn Cys Gly Asn Cys
 385 390 395 400
 Asp Asn Cys Leu Asn Pro Lys Lys Gln Val Glu Ala Gln Glu Leu Leu
 405 410 415
 Cys Ala Val Ile Glu Thr Ile Ile Ala Val Lys Glu Asn Phe Lys Ala
 420 425 430
 Asp Tyr Ile Ile Asp Val Leu Gln Gly Arg Glu Thr Ser Glu Val Gln
 435 440 445
 Ala His Leu His Glu Asp Leu Glu Val Phe Gly Ser Gly Met Gly Glu

450 455 460
 Glu Asp Lys Thr Trp Asn Ala Val Ile Arg Gln Ala Leu Ile Ala Gly
 465 470 475 480
 Tyr Leu Ser Lys Asp Val Glu Asn Tyr Gly Leu Leu Lys Val Thr Asp
 485 490 495
 Ala Gly Lys Lys Phe Leu Lys His Pro Lys Ser Phe Lys Ile Thr Glu
 500 505 510
 Asp Asn Asp Phe Glu Glu Val Glu Glu Glu Thr Pro Ala Arg Gly Gly
 515 520 525
 Gly Ser Cys Ala Val Asp Pro Val Leu Tyr Ser Met Leu Lys Asp Leu
 530 535 540
 Arg Lys Lys Leu Ser Lys Lys Leu Glu Val Pro Pro Tyr Val Ile Phe
 545 550 555 560
 Gln Asp Pro Ser Leu Glu Ala Met Ala Thr Ile Tyr Pro Val Thr Leu
 565 570 575
 Glu Glu Leu Gln Asn Ile Pro Gly Val Gly Ala Gly Lys Ala Lys Arg
 580 585 590
 Tyr Gly Glu Glu Phe Cys Lys Leu Ile Lys Arg His Cys Glu Glu Asn
 595 600 605
 Glu Ile Glu Arg Pro Glu Asp Leu Arg Val Arg Thr Val Ala Asn Lys
 610 615 620
 Ser Lys Met Lys Val Ala Ile Ile Gln Ala Ile Asp Arg Lys Val Ala
 625 630 635 640
 Leu Asp Asp Ile Ala Leu Ser Lys Gly Ile Glu Phe Ser Glu Leu Leu
 645 650 655
 Asp Glu Val Glu Ala Ile Val Tyr Ser Gly Thr Lys Leu Asn Ile Asp
 660 665 670
 Tyr Phe Leu Asp Glu Ile Met Asp Glu Asp His Met Leu Asp Ile Tyr
 675 680 685
 Asp Tyr Phe Lys Glu Ser Thr Thr Asp Lys Ile Asp Asp Ala Leu Asp
 690 695 700
 Glu Leu Gly Asp Glu Phe Thr Glu Glu Glu Val Arg Leu Val Arg Ile
 705 710 715 720
 Lys Phe Ile Ser Glu Met Ala Asn
 725

<210> 8114

<211> 398

<212> PRT

<213> B.fragilis

<400> 8114

Asn Leu Phe Tyr Met Lys Ala Arg His Phe Phe Tyr Pro Phe Leu Ser
 1 5 10 15
 Leu Phe Ser Val Ala Met Phe Ala Ser Cys Ser Ser Ser Val Pro Lys
 20 25 30
 Ser Pro Glu Gln Arg Val Glu Tyr Asn Glu Asp Phe Phe Ser Ile Ala
 35 40 45
 Val Ser Asp Val Lys Asp Thr Ile Lys Val Tyr Ile Glu Asp Leu Val
 50 55 60
 Asp Ser Leu Val Ile Leu Pro Leu Asp Asn Asp Lys Lys Ala Leu Cys
 65 70 75 80
 Ala Pro Leu Thr Val Tyr Ile Thr Glu Gln His Ile Gly Leu Thr Pro
 85 90 95
 Ser Glu Arg Gly Gly Thr Tyr Lys Leu Phe Ser Arg Asp Gly Ser Phe
 100 105 110
 Leu Cys Asn Val Gly Gly Phe Gly Gln Gly Pro Gly Glu Tyr Thr Ala
 115 120 125
 Leu Leu Tyr His Gln Ile Asp Glu Lys Ala Lys Arg Ile Tyr Leu Asn

130 135 140
 Thr Phe Glu Ala Ser Gln Ile Met Val Tyr Asp Phe Lys Gly Gln Tyr
 145 150 155 160
 Leu His Asp Ile Pro Leu Ala Ser Ile Leu His Lys Gly Ser Phe Lys
 165 170 175
 Val Asp Ser Glu His Lys Met Ile Tyr Cys Phe Asp Val Pro Ala Gly
 180 185 190
 Gln Ser Pro Phe Val Trp Lys Gln Asp Phe Glu Gly Asn Ile Lys Gly
 195 200 205
 Lys Ile His Ser Tyr Pro Tyr Thr Leu Lys Pro Asp Phe Gly Asn Asp
 210 215 220
 Val Gln Thr Met Phe Asn Thr Glu Ala Phe Tyr Thr Ser Val Ser Ala
 225 230 235 240
 Gly Phe Glu Gln Leu Glu Gly Met Asn Asp Thr Leu Tyr His Tyr Tyr
 245 250 255
 Pro Glu Thr Asp Val Leu Thr Pro Val Phe Tyr Ala Asp Phe Gly Lys
 260 265 270
 Glu Gly His Gln His Arg Tyr Leu Asn Thr Pro Leu Asn Tyr Tyr Val
 275 280 285
 Gly Leu Ser Ser Gly Tyr Thr Asn Asp Arg Gly Pro Phe Thr Thr Leu
 290 295 300
 Asp Tyr Thr Val Ile Lys Val Asp Lys Lys Thr His Glu Ala Ser Tyr
 305 310 315 320
 Ile Lys Leu Phe Ser Arg Gly Tyr Gly Gly Leu Ser Leu Asp Leu Tyr
 325 330 335
 Tyr Ala Gln Phe Arg Phe Gly Tyr Phe Tyr Leu Trp Met Glu Pro Ile
 340 345 350
 Glu Leu Lys Glu Gln Leu Ser Gln Ile Leu Lys Leu Ser Glu Met Asp
 355 360 365
 Thr Ala Met Arg Gly Lys Val Glu Lys Leu Tyr Asn Gly Leu Ser Glu
 370 375 380
 Asn Gly Asn Ser Val Leu Leu Phe Gly Arg Leu Lys Gln Lys
 385 390 395

<210> 8115

<211> 424

<212> PRT

<213> B.fragilis

<400> 8115

Pro Ile Asn Tyr Arg Pro Met Lys Leu Asp Tyr Ile Ala Leu Phe Leu
 1 5 10 15
 Val Leu Phe Phe Leu Ala Ala Cys Gly Ser Lys Ser Ser Ser Pro Asp
 20 25 30
 Met Met Asp Asp Asn Ala Leu Pro Thr Glu Glu Thr Phe Lys Glu Ile
 35 40 45
 Asp Leu Ala Asn Asn Leu Glu Asp Cys Gly Lys Pro Leu Leu Leu Ser
 50 55 60
 Asp Ile Val Lys Asp Val Glu Tyr Val Lys Leu Glu Thr Gln Asp Asn
 65 70 75 80
 Ile Leu Val Gly Asp Ile Lys Gln Leu Lys Arg Thr Glu Gln Tyr Ile
 85 90 95
 Phe Ile Tyr Ser Arg Arg Gln Asn His Ile Met Met Phe Asp Lys Ser
 100 105 110
 Gly Lys Phe Ile Arg Arg Ile Gly Arg Val Gly Gln Gly Pro Gly Glu
 115 120 125
 Met Ser Asn Ile Gln Ser Phe Thr Thr Asn Asp Asn Arg Val Phe Ile
 130 135 140
 Tyr Pro Leu Ser Arg Ser Ser Ser Phe Met Ile Tyr Asp Thr Gln Asn

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145          150          155          160
Asn Asp Phe Ile Lys Glu Val Ser Leu Lys Tyr Pro Val Ser Val Asn
          165          170          175
Asp Lys Ile Asp Ile Met Asp Asn Cys Leu Ile Tyr Tyr Pro Gly Ile
          180          185          190
Ile Tyr Phe Pro Gly Asn Lys Glu Gly Phe Ile Ser Ala Cys Val Ile
          195          200          205
Asn Thr Asp Gly Gln Ile Val Arg Glu Gln Val Pro Glu Met Pro Val
          210          215          220
Glu Ala Lys Lys Ile Asp Met Ala Ile Asp Pro Asp Ile Ser Trp Asn
225          230          235          240
Tyr Gln Gly Lys Ser Asn Ile Tyr Ser Leu Ile Asn Asp Thr Ile Tyr
          245          250          255
Gly Ile Thr Cys Asp Ser Ile Phe Pro Arg Tyr His Leu Ser Leu Gly
          260          265          270
Lys Tyr Lys Leu Pro Pro Glu Lys Tyr Asn Phe Cys Asn Asn Leu Asp
          275          280          285
Leu Gly Asp Phe Ile Leu Ile Lys Ser Val Cys Glu Thr Lys Asp Tyr
          290          295          300
Leu Leu Phe Ser Tyr Trp Phe Asn Cys Lys Met Trp Phe Ser Arg Tyr
305          310          315          320
Asp Lys Asn Lys Asp Lys Ile Asp Ser Trp Glu Gln Val Pro Phe Glu
          325          330          335
Val Arg Tyr Trp Met Ile Arg Asp Ala Pro Gly Val Thr Asn Asp Ile
          340          345          350
Asp Gly Thr Gln Ser Phe Arg Gly Asn Asn Asn Met Lys Asp Val Gly
          355          360          365
Glu Asn Cys Phe Cys Phe Val Ile Thr Pro Asp Asn Leu Asp Gln Val
          370          375          380
Arg Arg Asn Val Ala Glu Ala Lys Val Lys Phe Pro Glu Lys Gln Ala
385          390          395          400
Glu Leu Leu Lys Leu Leu Asp Glu Met Gly Glu Asp Asp Asn Pro Ile
          405          410          415
Ile Ala Phe Tyr Lys Leu Lys Asp
          420

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<210> 8116
<211> 312
<212> PRT
<213> B.fragilis

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<400> 8116
Asn Ala Ser Tyr Phe Asp Ser Met Arg Phe Phe Val Ser Ile Asn Lys
1          5          10          15
Trp Lys Thr Met His Lys Ala Gly Phe Val Asn Ile Val Gly Asn Pro
          20          25          30
Asn Val Gly Lys Ser Thr Leu Met Asn Val Leu Val Gly Glu Arg Ile
          35          40          45
Ser Ile Ala Thr Phe Lys Ala Gln Thr Thr Arg His Arg Ile Met Gly
          50          55          60
Ile Tyr Asn Thr Asp Asp Met Gln Ile Val Phe Ser Asp Thr Pro Gly
65          70          75          80
Val Leu Lys Pro Asn Tyr Lys Leu Gln Glu Ser Met Leu Asn Phe Ser
          85          90          95
Thr Ser Ala Leu Ala Asp Ala Asp Val Leu Leu Tyr Val Thr Asp Val
          100          105          110
Ile Glu Thr Pro Asp Lys Asn Asn Glu Phe Ile Gln Lys Val Arg Gln
          115          120          125
Gln Ser Ala Pro Ile Leu Leu Leu Ile Asn Lys Ile Asp Leu Thr Asp

```


130		135		140
Gln Glu Lys Leu Val	Lys Leu Val Glu Glu Trp Lys Glu Leu Leu Pro			
145	150	155	160	
Gln Ala Glu Ile Ile	Pro Ile Ser Ala Ala Thr Lys Phe Asn Val Asp			
	165	170	175	
Tyr Val Met Lys Arg Ile	Lys Asp Leu Leu Pro Asp Ser Pro Pro Tyr			
	180	185	190	
Phe Asp Lys Asp Gln Trp Thr	Asp Lys Pro Ala Arg Phe Phe Val Asn			
	195	200	205	
Glu Ile Ile Arg Glu Lys Ile	Leu Leu Tyr Tyr Asp Lys Glu Ile Pro			
	210	215	220	
Tyr Ser Val Glu Val Val Val	Glu Glu Phe Lys Glu Asp Ala Lys Lys			
225	230	235	240	
Ile His Ile His Ala Val Ile	Tyr Val Glu Arg Asp Ser Gln Lys Gly			
	245	250	255	
Ile Ile Ile Gly Lys Gln Gly	Lys Ala Leu Lys Lys Val Ala Thr Glu			
	260	265	270	
Ala Arg Arg Asp Leu Glu Arg	Phe Phe Gly Lys Thr Val Phe Leu Glu			
	275	280	285	
Thr Tyr Val Lys Val Asp Lys	Asp Trp Arg Ser Ser Asp Lys Glu Leu			
	290	295	300	
Arg Asn Phe Gly Tyr Gln Leu	Asp			
305	310			

<210> 8117
 <211> 423
 <212> PRT
 <213> B.fragilis

<400> 8117
Tyr Arg Glu Tyr Arg Arg Arg Ser Ile Leu Glu Ile Trp Ile Lys Asp
1 5 10 15
Asp Ser Phe Met Lys His Ile Tyr Leu Ile Gly Asn Gly Ser Arg Ala
20 25 30
Ala Gln Tyr Gly Val Gly Thr Tyr Ile Arg Gln Met Leu Glu Phe Phe
35 40 45
Arg Gln Thr Ser Ser Val Arg Leu Thr Ile Val Glu Leu Asn Ser Glu
50 55 60
Val Lys Glu Val Thr Glu Glu Cys Asp Asn Ser Gly Lys Val Cys Tyr
65 70 75 80
Leu Lys Ile Pro Ala Gln Lys Ser Glu Gly Arg Lys Gly Asp Val Ala
85 90 95
His Cys Tyr Arg Asn Ile Ala Tyr Leu Leu Ala Leu His Phe Leu Lys
100 105 110
Asp Glu Gln Asn Val Leu His Leu Asn Tyr Leu His His Ala Pro Leu
115 120 125
Ala Asp Trp Leu Lys Lys Ile Gly Val Glu Phe Tyr Leu Leu Val Thr
130 135 140
Ile His Tyr Leu Asp Trp Cys Phe Met Leu Lys Gly Asn Thr Arg Leu
145 150 155 160
Phe Arg Ser Ile Ile His Lys Glu Glu Gln Ser Asn Glu Trp Gly Lys
165 170 175
Lys Ile Arg Asn Ser Tyr Glu Arg Asp Lys Arg Leu Phe Gln His Ser
180 185 190
Asp Lys Val Ile Cys Leu Ser Gln Tyr Thr Gln Asn Leu Leu Arg Glu
195 200 205
Asp Tyr Gly Val Glu Lys Glu Lys Leu Val Val Val Tyr Asn Gly Leu
210 215 220
Lys Asp Glu Ala Ile Lys Leu Ser Lys Glu Glu Arg Leu Glu Lys Arg

```

225          230          235          240
Ser Ala Leu Gly Phe Arg Glu Thr Asp Lys Ile Ile Leu Phe Val Gly
          245          250          255
Arg Leu Asp Arg Ile Lys Gly Val Gln Tyr Leu Ile Glu Ala Phe Arg
          260          265          270
Gln Val Ile Arg Lys Asn Pro Asn Ser Arg Leu Val Ile Val Gly Asp
          275          280          285
Gly Asp Tyr Asp Lys Tyr Leu Lys Gln Cys Ala Gly Ile Trp Ser Tyr
          290          295          300
Val Val Leu Thr Gly Lys Val Glu Lys Glu Val Leu Tyr Thr Phe Tyr
305          310          315          320
Gln Ile Ala Asp Val Gly Val Leu Pro Ser Phe His Glu Gln Cys Ser
          325          330          335
Tyr Val Ala Ile Glu Met Leu Met His Gly Leu Pro Leu Ile Gly Thr
          340          345          350
Gly Ser Thr Gly Leu Lys Glu Met Val Glu Gly Met His Cys Leu Pro
          355          360          365
Leu Lys Glu Glu Asp Asp Ser Val Asp Leu Pro Ile Asp Leu Leu Val
          370          375          380
Gln Trp Leu Ile Glu Asp Gln Glu His Leu Arg Ser Glu Lys Tyr Arg
385          390          395          400
Arg Arg Phe Glu Glu Arg Tyr Thr Leu Arg Lys Met Ser Glu Asn Met
          405          410          415
Phe Ser Ile Tyr Leu Asn Leu
          420

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<210> 8118

<211> 495

<212> PRT

<213> B.fragilis

<400> 8118

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Ile His Arg Tyr Met Lys Asn Asp Ile Ala Phe Ser Thr Pro Phe His
1          5          10          15
Ala Tyr Val Tyr Ser Phe Arg His Lys Glu Tyr Leu Pro Leu His Pro
          20          25          30
Ile Leu Lys Arg Ile Tyr Thr Val Val Glu Glu Lys Lys Asn Ile Glu
          35          40          45
Glu Asp Glu Glu Leu Lys Cys Tyr Pro Lys Glu Gln Ile Leu His Tyr
          50          55          60
Leu Gln Lys Tyr Lys Phe Leu Lys Glu Asn Glu Phe Ile Gly Glu Lys
65          70          75          80
Val Lys Thr Glu Phe Gly Glu Ile Thr Glu Thr Met Val Arg Arg Glu
          85          90          95
Val Glu Asn Leu Thr Val Leu Thr Phe Glu Val Thr Glu Arg Cys Asn
          100          105          110
Leu Arg Cys Arg Tyr Cys Ala Phe Gly Asp Leu Tyr Tyr Gly Tyr Asp
          115          120          125
Glu Arg Lys Gly Glu Asn Leu Asp Phe Pro Lys Ala Lys Gln Ile Leu
          130          135          140
Asp Phe Leu Phe Gly Ile Trp Glu Lys Ile Pro His Leu Ser Val Ala
145          150          155          160
Arg Thr Leu Thr Val Gly Phe Tyr Gly Gly Glu Pro Leu Met Asn Met
          165          170          175
Asp Leu Ile Lys Gln Ile Val Ser Tyr Ile Asp Glu His Lys Pro Glu
          180          185          190
Gly Met Lys Phe Ala Tyr Asn Met Thr Thr Asn Ala Met Leu Leu Arg
          195          200          205
Val Tyr Gln Asp Phe Leu Val Glu His Lys Phe His Leu Leu Val Ser

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210	215	220
Leu Asp Gly Thr Glu Ala Asp Asp Cys His Arg Val Thr Val Asn Gly		
225	230	235
Lys Ser Ser Phe Ala Gln Val Phe Glu Gln Ile Lys Asn Leu Gln Phe		240
	245	250
Cys Tyr Pro Glu Tyr Phe Lys Lys Tyr Val Ser Phe Asn Ser Val Ile		255
	260	265
His Ser Glu Ser Asn Ile Glu Arg Ile Val Asp Phe Phe Arg Ala Glu		270
	275	280
Phe Asp Lys Gln Thr Ser Leu Ser Glu Leu Asn Asn Ser Ser Ile Ala		285
	290	295
Gln Glu Gly Lys Tyr Ala Glu Met Arg Lys Ser Val Phe Gln Ser Ile		300
305	310	315
Ala Leu Ser Pro Arg Arg Lys Glu Ile Asp Gln Gln Leu Met Tyr Asn		320
	325	330
Ala Pro Asp Ile Ser Thr Val Thr Tyr Phe Leu His His Leu Ser Asn		335
	340	345
Glu Val Phe Arg Asp Tyr Arg Ser Met Phe Tyr Gly Lys Arg Asn Phe		350
	355	360
Lys Leu Leu Pro Thr Gly Thr Cys Ile Pro Phe Asn Arg Lys Met Tyr		365
	370	375
Val Thr Val His Gly Lys Ile Leu Val Cys Glu Arg Ile Asp His Asp		380
385	390	395
Phe Ala Val Gly His Val Thr Asp Glu Gly Val Glu Leu Asn Phe Ala		400
	405	410
His Val Ala Glu Asn His Arg Lys Tyr Cys Ser Lys Leu Leu Ser Gln		415
	420	425
Cys Lys Gln Cys Tyr Met Gln Glu Ser Cys Ser Gln Cys Met Tyr Tyr		430
	435	440
Thr Asn Val Leu Ala Asp Lys Val Val Cys Arg Asn Phe Lys Asn Arg		445
	450	455
Glu Met Phe Ala Gly Tyr Leu Ala Met Asn Val Asp Tyr Leu Glu His		460
465	470	475
Asn Arg Trp Ala Tyr Ser Lys Val Met Lys Glu Ile Phe Ile Phe		480
	485	490
		495

<210> 8119

<211> 413

<212> PRT

<213> B.fragilis

<400> 8119

Asn Leu Phe His Met Lys Ala Arg His Phe Phe Tyr Pro Leu Leu Phe	
1	5
Leu Phe Ser Val Ala Met Phe Ala Ser Cys Ser Ser Tyr Val Pro Lys	10
	15
	20
Glu Gly Asp Ile Ile Glu Asp Ser Ala Phe Arg Ser Val Asp Leu Arg	25
	30
	35
Ile Ile Glu Lys Ala Glu Gly Thr Val Met Ser Leu Ser Asp Leu Val	40
	45
	50
Glu Ser Tyr Glu Val Ile Lys Leu Glu Asn Arg Asp Glu Ala Leu Ile	55
	60
	65
Lys Thr Tyr Pro Phe Gly Ile Phe Ala Ser Asp Asn Tyr Ile Leu Leu	70
	75
	80
	85
Asn Pro Asp Ala Ile Ser Pro Ile Lys Leu Phe Thr Arg Lys Gly Gln	90
	95
	100
Tyr Val Ala Asp Ile Gly Gly Ile Gly Gln Gly Pro Gly Glu Tyr Lys	105
	110
	115
Thr Ile His Phe Cys Met Ile Asp Glu Lys Gln Lys Arg Ile Tyr Leu	120
	125

130 135 140
 Gly Pro Gly Arg Ala Asn Lys Ile Leu Thr Tyr Asp Leu Lys Gly Asn
 145 150 155 160
 Tyr Leu Ser Asp Glu Ala Ile His Phe Lys Glu Ile Val His Lys Pro
 165 170 175
 Cys Ile Trp Met Asp His Asp Lys Lys His Val Thr Val Val Gly Leu
 180 185 190
 Pro Phe Ser Glu Asn Glu Asn Ser Asn Phe Glu Ile Ser Asn Asn Val
 195 200 205
 Cys Trp Val Gln Asn Arg Glu Gly Asp Ile Val His Arg Ile Ser Ala
 210 215 220
 Asn His Tyr Gly Leu Ile Gly Asp Tyr Ser Asn Gly Leu Val Ala Cys
 225 230 235 240
 Arg Asn Val Asp Ala Ile Ser Phe Ser Ile Phe Glu Asp Pro Met Leu
 245 250 255
 Arg Thr Arg Pro Asp Thr Leu Tyr His Tyr Asp Ala Val Lys Asn Ile
 260 265 270
 Ile Thr Pro Arg Phe Thr Ile Asp His Val Val Ser Glu Asn Gln Ser
 275 280 285
 Ala Cys Thr Val Leu Tyr Glu Thr Ser Arg Ser Tyr Trp Ala Arg Val
 290 295 300
 Thr Leu Tyr Pro Asn Asp Ile Ser Ser Asn Ser Ser Pro Val Arg Leu
 305 310 315 320
 Thr Thr Phe Asn Val Cys Val Ser Lys Lys Asp Gly Ser Val Lys Arg
 325 330 335
 Ile Asp Arg Phe Thr Asn Asp Phe Leu Gly Leu Ser Tyr Pro Phe Leu
 340 345 350
 Thr Met Arg Asn Gly Tyr Val Cys Ile Ser Tyr Asp Pro Leu Glu Leu
 355 360 365
 Met Asp Ala Leu Asp Lys Val Leu Thr Gln Thr Asp Leu Lys Pro Glu
 370 375 380
 Ile Arg Lys Arg Ala Thr Gly Leu Arg Asn Ser Leu His Glu Asn Asp
 385 390 395 400
 Asn Asp Ile Leu Met Ile Gly Lys Leu Lys Ser Asn Tyr
 405 410

<210> 8120
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8120
 Arg Ile Glu Gln Thr Tyr Ser Phe Ser Gly Lys Val Tyr Ile Tyr Pro
 1 5 10 15
 Val Asp His Leu Ile Ile Leu Ser Gln Ile Pro Cys Arg Leu Leu Gln
 20 25 30
 His Ile Val Ser Leu Ile Arg Asn Pro Pro Leu Met Trp Thr Leu Ser
 35 40 45
 Met Thr Gly Ser Leu Asp Tyr Ser Lys Ile Val Ser Asn His Val Asn
 50 55 60
 Ile Ile Ile Ser Phe Asn His Leu Glu Pro His Phe Tyr Gln
 65 70 75

<210> 8121
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 8121

Ser Leu Met Gln Arg Ile Ile Val Leu Ser Ser Tyr Leu Lys Leu Ser
 1 5 10 15
 Ile Ile Gln Leu Thr Met Arg Lys Thr Gly Leu Leu Val Ile Ser Leu
 20 25 30
 Leu Phe Cys Ala Ser Cys Ala Asp Lys His Asp Arg Lys Gly Gln Thr
 35 40 45
 Pro Leu Val Glu Val Asp Gly Asn Phe Leu Tyr Lys Glu Asp Leu Gln
 50 55 60
 Gly Arg Cys Ser Pro Pro Val Cys Gln Lys Met Thr Val Phe Phe Ser
 65 70 75 80
 Pro Ser Thr Thr Ser Val Ala Gly
 85

<210> 8122
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 8122
 Gln Arg Gln Gln Glu Asp Thr Ser Met Val Gly Ser Leu Leu Ile Gly
 1 5 10 15
 Asn Lys His Phe Leu Val Arg Glu Leu Val Gln Ala Gly Arg Ser Thr
 20 25 30
 Ser Cys Leu Gly Leu Thr Asn Gly Lys Met Gly Ile Ala Ile Ala Leu
 35 40 45
 Phe Arg Tyr Gly Arg Leu Ser Gly Glu Leu Ala Tyr Glu Glu Val Ala
 50 55 60
 Ser Glu Leu Leu Asp Asp Val Cys Gln Asn Leu Asn Tyr Ser Met Pro
 65 70 75 80
 Ile Ser Phe Asn Asp Gly Leu Cys Gly Ile Gly Trp Gly Ile Glu Tyr
 85 90 95
 Leu Ile Gln His Gly Tyr Val Asp Ala Asp Gly Asp Glu Ile Leu Arg
 100 105 110
 Asp Ile Asp Leu Tyr Leu Ile Arg Cys Ile His Ile Tyr Gly Leu Ser
 115 120 125
 Gly Leu Ser Leu Arg Asn Gly Ile Val Gly Leu Gly Arg Tyr Ile Leu
 130 135 140
 Ile Arg Ile Thr Pro Thr Phe Leu Phe Gly Asp Thr Phe Ser Ser Ala
 145 150 155 160
 Leu Leu Lys Glu Tyr Phe Ile Tyr Leu Ile Asp Trp Leu Glu Glu Glu
 165 170 175
 Leu Lys Arg Val Asp Glu Pro Val Asp Asp Leu Leu Asp Phe Leu Phe
 180 185 190
 Asp Leu Tyr Pro Thr Gly Phe Tyr Gln Thr Lys Val Ser Asp Leu Ile
 195 200 205
 Lys Tyr Cys Met Asn Lys
 210

<210> 8123
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 8123
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu

35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 8124
 <211> 571
 <212> PRT
 <213> B.fragilis

<400> 8124
 Leu Gln Phe Asn Asn Gly Thr Asn Phe Leu Thr Ile Phe Arg Ile Asn
 1 5 10 15
 His Cys Glu Ser Phe Gly Asn Leu Thr Asp Ile His Phe Ile His His
 20 25 30
 Phe Ser Asn Leu Leu Arg Gln Ile Leu His Phe Glu Phe Ser Gly Leu
 35 40 45
 Val Leu Arg Val Leu His Gln Thr Val Ala Val Ala Arg Ile Phe Val
 50 55 60
 Leu Arg Gln Ser Arg Ser Ser Leu Ile Lys Gly Lys Leu Ile Ala Thr
 65 70 75 80
 Asp Ile Val Gly Asn Arg Val Glu Thr Arg Ile Gly Phe Ile Gln Leu
 85 90 95
 Leu Ile Arg His Phe Gly Leu Gln Gln Asp Met Thr Gly Val Asp Thr
 100 105 110
 Val Ala Thr Phe Phe Asp Gln Leu Asp Asp Met Glu Thr Ile Leu Arg
 115 120 125
 Leu Tyr Asp Phe Arg Asp Leu Leu Gly Ile Leu Gln Val Glu Ser Asp
 130 135 140
 Ile Gly Val Phe Gly Asn His Leu Pro Phe Thr His Lys Thr Gly Phe
 145 150 155 160
 Thr Thr Phe Asp Ser Arg Ala Ala Ile Phe Gly Ile Gln Gln Gly Lys
 165 170 175
 Arg Arg Glu Ile Thr Phe Thr Leu Ile Asp Thr Val Gly Val Phe Thr
 180 185 190
 Gln Ala Ser Phe Tyr Ile Phe Asn Phe Gly Asn Arg Tyr Phe Arg Leu
 195 200 205
 Leu Arg Asn Asn Leu Tyr Phe Tyr Leu Gly Gly Asp Val Arg Asn Thr
 210 215 220
 Val Leu Gly Lys Leu Leu Lys Val Thr Ala Tyr Phe Arg Arg Ser His
 225 230 235 240
 Phe Asp Ile Thr Tyr Gln Phe Leu Leu His Pro Leu Tyr Asn Gln Ser
 245 250 255
 Val Thr Gly Ile Leu Ala His Gly Phe Thr Asn Leu Cys Arg Gly Leu
 260 265 270
 Ile Lys Leu Cys Phe His Ser Phe Ser Ala Thr Gln Ser Leu Asn Ile
 275 280 285
 Ile Thr Asp Leu Ile Val Asp Thr Leu Tyr Asp Phe Cys Leu Gly His
 290 295 300
 Phe Asn Thr Val Glu His Ser Leu Val His Ile Lys Phe Leu Tyr Gly
 305 310 315 320
 Gln Leu Phe Gly Asn His Thr Ile Arg Ile Thr Ile Lys Leu Thr Pro
 325 330 335
 Phe Ile Gln Ser Gly Gln Ser Cys Phe Phe His Ile Gly Leu Gln Asp
 340 345 350
 Ser Phe Val Ala Asn Asp Pro Asn His Phe Val Asn His Ile Val Leu

355		360		365
Cys Ile Gly Cys His Val Ser Asn Gln Cys Gln Gly Lys His Asn Asn				
370		375		380
Lys Leu Lys Val His Lys Leu Leu His Ser Val Tyr Leu Ile Ile Tyr				
385		390		400
Asn Leu Leu Ser Phe Tyr Cys Thr Leu Val Gln Ile Val Phe His Leu				
	405		410	415
Phe His Lys Val Asn Pro Leu Asp Val Asp Lys His Ile Leu Asp Phe				
	420		425	430
Arg Leu Ser Lys Phe Ile Arg Phe Leu Phe Ala Arg His Thr Glu Ile				
	435		440	445
Thr Asp Ile Gln Lys Ile Val Lys Cys Arg Ile Phe Gln Phe Asn Met				
	450		455	460
Pro Val Phe Ile His Ile Gly Phe Arg Gly Phe Arg Phe Gln Arg Asp				
465		470		475
His Ile Gln His Ile Gly His Pro His Pro Phe Ile Ile Lys Ile Leu				
	485		490	495
Ile Leu His Cys Val Leu Gln Thr Ile Leu Phe Gln Met Leu Asn Gly				
	500		505	510
Ile Leu Ser Leu Arg Phe Val Pro Leu Thr His Val Ala Gln Leu Gly				
	515		520	525
Ser Gly Gln Arg Asn Phe Asp Lys Gln Thr Phe His Gln Trp Thr Val				
	530		535	540
Gln Leu Lys Gln Phe Phe Val Leu Phe Val Ile Val Cys Tyr Phe Leu				
545		550		555
Phe Gly Asp Leu Ala Arg Gln Phe Leu Ala Asp				560
	565		570	

<210> 8125
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 8125
 Phe Asn Asn Lys Arg Ile Lys Glu Thr Glu Ser Leu Gln Lys Arg Leu
 1 5 10 15
 Cys Ala Gly Ser Lys Asn Leu Val Ile Glu Ile Glu Lys Leu Ile Asp
 20 25 30
 His Leu Ser Ala Ala Lys Lys Arg Ile Lys Thr Gly Ile Ala Ile Thr
 35 40 45
 Phe Ser Leu Phe Leu Tyr Thr Lys Pro Met Asn Phe Ser Asp Leu Glu
 50 55 60
 Arg Phe Arg Gly Glu Asn Arg Lys Tyr Gly Leu
 65 70 75

<210> 8126
 <211> 458
 <212> PRT
 <213> B.fragilis

<400> 8126
 Ile Ser Ile Asn Glu Ser Lys Ser Ser Ile Cys Trp Asp Ile Trp Ala
 1 5 10 15
 Leu Cys Thr Asn Leu Pro Gln Val Gly Val Lys Leu Glu Lys Glu Glu
 20 25 30
 Lys Ala Val His Ala Asn Ser Ile Arg Glu Ile Phe Tyr Thr Phe Leu
 35 40 45
 Asn Arg Phe Ile Met Lys Asn Leu Tyr Leu Ile Leu Val Leu Ser Ala
 50 55 60

Leu Val Ala Cys Thr Gly Ser Ser Gln Lys Glu Lys Pro Ala Cys Val
 65 70 75 80
 Asn Thr Pro Val Glu Pro Phe Thr Gly Leu Pro Val Phe Asp Leu Gln
 85 90 95
 Gly Gln Tyr Pro Glu Lys Glu Ile Ile Leu Gln Asp Ile Ala Asp Val
 100 105 110
 Arg Tyr Val Val Leu Glu Thr Gly Asp Ser Ser Leu Val Gly Thr Arg
 115 120 125
 Thr Ile Leu Met Thr Asp Ser Leu Leu Val Thr Val Asn Lys Lys Ser
 130 135 140
 Asp Val Ile Phe Phe Asp Lys Ser Gly Lys Tyr Leu His Ser Phe Asn
 145 150 155 160
 His Thr Gly Met Ser Gly Glu Glu Tyr Gly Asp Val Val Ser Gly Tyr
 165 170 175
 Cys Ile Asp Glu Lys Ala Arg Glu Ile Phe Ile Tyr Asp Gly Leu Gln
 180 185 190
 Ser Arg Ile Gln Val Tyr Gly Tyr Gly Gly Ala Tyr Arg Arg Thr Leu
 195 200 205
 Lys Leu Pro Gln Asn Arg Met Phe Ala Ser Ser Ile Phe Glu Tyr Asp
 210 215 220
 Glu Asn Phe Leu Phe Gly Glu Asp Tyr Arg Leu Val Asp Tyr Gln Ile
 225 230 235 240
 Gly Lys Tyr Pro Val Asn Lys Thr Pro Tyr Tyr Lys Ile Ser Lys Lys
 245 250 255
 Asp Gly Lys Leu Thr Ser Val Pro Ile Thr Val Lys Gly Arg Ile Arg
 260 265 270
 Asp Gly Leu Tyr Thr Val Gly Asp Gly Glu Ser Gly Gly Tyr Val Ser
 275 280 285
 Leu Ser Met Ser Pro Val Ala Arg Leu Gly Ser Asp Ile Leu Ile Ala
 290 295 300
 Asp Tyr Ser Leu Asp Thr Ala Tyr Val Tyr Arg Asp Asp His Leu Ile
 305 310 315 320
 Pro Leu Thr Val Arg Arg Asn His Thr Ser Glu Asn Asn Ile Pro Ile
 325 330 335
 Leu Ala Thr Val Asp Val Met Thr Gly Arg Tyr Leu Leu Trp Tyr Thr
 340 345 350
 Ile Val Lys Asp Ile Asp Val Lys Asn Asn Arg Val Ser Asp Pro Val
 355 360 365
 Ser Tyr Leu Tyr Asp Arg Phe Thr Asn Glu Tyr Cys Arg Val Asp Leu
 370 375 380
 Val Asn Arg Asp Gly Val Ser Ala Thr Asn Val Pro Ala Phe Gln Met
 385 390 395 400
 Arg Leu Ser Ala Asn Tyr His Val Val Pro Glu Asn Tyr Ala Ile Gln
 405 410 415
 Cys Tyr Pro Ala Glu Lys Leu Ile Glu Leu Asn Gly Gln Gly Lys Leu
 420 425 430
 Lys Gly Glu Leu Lys Glu Ile Ala Ser Lys Leu Asn Asp Glu Asp Asn
 435 440 445
 Pro Val Leu Leu Ile Ala Lys Phe Lys Glu
 450 455

<210> 8127

<211> 264

<212> PRT

<213> B.fragilis

<400> 8127

Ile Asn Lys Lys Thr Met Lys Tyr Ser Glu Gln Ile Thr Ile Gly Ile
 1 5 10 15

Pro Val Arg Ile Asp Ser Pro Ala Arg Met Arg Asn Leu Gln Val Leu
 20 25 30
 Leu Arg His Leu Ser Leu Ser Gly Ile Lys Ile His Val Trp Glu Ala
 35 40 45
 Gly Asp Val Arg Ser Glu Leu Ser Gly Phe Ala Ser Asn Lys Asp Thr
 50 55 60
 Tyr Thr Tyr Glu Arg Asp Glu Ser Leu Val Tyr His Lys Thr Leu Tyr
 65 70 75 80
 Val Asn Arg Leu Leu Lys Ala Ala Ser Thr Pro Val Val Ala Ile Trp
 85 90 95
 Asp Ala Asp Ile Leu Leu Pro Leu Ser Gln Ile Glu Ala Ser Val Leu
 100 105 110
 Ala Ile Ile Glu Gln Gly Tyr Leu Leu Ser Ile Pro Tyr Asp Gly Val
 115 120 125
 Val Lys Met Leu Ser Glu Ala Gln Ser Glu Ala Phe Glu Tyr Ser Gly
 130 135 140
 Gln Gly Cys Asp Tyr Leu Thr Met Phe Ala Ala Thr Tyr Ala Arg Leu
 145 150 155 160
 Met Arg Arg Pro Ser Cys Gly Gly Val Phe Val Val Asp Arg Glu Lys
 165 170 175
 Tyr Leu His Trp Gly Gly Asp Asn Glu Arg Phe Val Ser Trp Gly Pro
 180 185 190
 Glu Asp Ala Glu Arg Ile Arg Arg Ile Glu Ile Leu Gly Tyr Pro Val
 195 200 205
 His Trp Val Lys Glu Gly Pro Leu Tyr His Leu Trp His Pro Arg Gly
 210 215 220
 Glu Asn Ser Gly Tyr Ala Thr Glu Glu Leu Ala Phe Gln Asn Arg Met
 225 230 235 240
 Glu Phe Ile Lys Val Cys Ser Met Glu Arg Asn Glu Leu Arg Glu Tyr
 245 250 255
 Ile Lys Ser Trp Lys Asn Asn Gly
 260

<210> 8128

<211> 203

<212> PRT

<213> B.fragilis

<400> 8128

Asn Pro Gly Lys Thr Met Gly Lys Val Asp Glu Ala Leu Leu Lys Arg
 1 5 10 15
 Ile Ala Asp His Gln Met Leu His Gly Ser Phe Arg Arg Asp Leu Gly
 20 25 30
 Val Leu Asn Gly Lys Met Gly Ile Val Leu Phe Phe Phe His Tyr Ala
 35 40 45
 Arg Tyr Thr Gly Arg Val Leu Tyr Glu Asp Phe Ala Gly Glu Met Leu
 50 55 60
 Glu Glu Val Ile Gln Glu Leu His Ser Asp Leu Pro Ile Arg Phe Ser
 65 70 75 80
 Asp Gly Leu Cys Gly Ile Gly Trp Gly Val Glu Tyr Leu Ile Gln Asn
 85 90 95
 Ala Phe Ile Ala Gly Asp Ser Asp Glu Ile Leu Glu Asp Leu Asp Gln
 100 105 110
 Lys Ile Met Glu Trp Asp Pro Arg Ala Thr Asp Leu Ser Phe Glu
 115 120 125
 Ser Gly Leu Glu Gly Val Ala Cys Tyr Ala Ser Ser Arg Leu Lys Ser
 130 135 140
 Thr Val Arg Asn Arg Met Pro Phe Asp Gln Val Tyr Leu Ser Glu Leu
 145 150 155 160

Glu Met Ala Val Gln Gln Lys Gly Leu Arg Met Arg Leu Glu Leu Asp
 165 170 175
 Asp Val Phe Val Arg Val Ile Asp Ile Gly Asn Ile Glu Glu Glu Val
 180 185 190
 Ser Trp Lys Tyr Gly Leu Lys Met Ile Ala Leu
 195 200

<210> 8129
 <211> 438
 <212> PRT
 <213> B.fragilis

<400> 8129
 Thr Met Gly Asn Leu Val Ala Ile Val Gly Arg Pro Asn Val Gly Lys
 1 5 10 15
 Ser Thr Leu Phe Asn Arg Leu Thr Lys Thr Arg Gln Ala Ile Val Asn
 20 25 30
 Asp Glu Ala Gly Thr Thr Arg Asp Arg Gln Tyr Gly Lys Ser Glu Trp
 35 40 45
 Leu Gly Arg Glu Phe Ser Val Val Asp Thr Gly Gly Trp Val Val Asn
 50 55 60
 Ser Asp Asp Ile Phe Glu Glu Ile Arg Lys Gln Val Leu Met Ala
 65 70 75 80
 Val Asp Glu Ala Asp Val Ile Leu Phe Val Val Asp Val Thr Asn Gly
 85 90 95
 Val Thr Asp Leu Asp Met Gln Val Ala Ala Ile Leu Arg Arg Ala Lys
 100 105 110
 Ser Pro Val Ile Met Val Ala Asn Lys Thr Asp Asn His Glu Leu Arg
 115 120 125
 Tyr Asn Ala Pro Glu Phe Tyr Arg Leu Gly Leu Gly Asp Pro Tyr Cys
 130 135 140
 Ile Ser Ala Ile Ser Gly Ser Gly Thr Gly Asp Leu Met Asp Leu Ile
 145 150 155 160
 Val Ser Lys Phe Lys Lys Glu Ser Asp Glu Ile Leu Asp Glu Asp Ile
 165 170 175
 Pro Arg Phe Ala Val Val Gly Arg Pro Asn Ala Gly Lys Ser Ser Ile
 180 185 190
 Val Asn Ala Phe Ile Gly Glu Glu Arg Asn Ile Val Thr Glu Ile Ala
 195 200 205
 Gly Thr Thr Arg Asp Ser Ile Tyr Thr Arg Tyr Asn Lys Phe Gly Phe
 210 215 220
 Asp Phe Tyr Leu Val Asp Thr Ala Gly Ile Arg Lys Lys Asn Lys Val
 225 230 235 240
 Asn Glu Asp Leu Glu Tyr Tyr Ser Val Val Arg Ser Ile Arg Ala Ile
 245 250 255
 Glu Gly Ala Asp Val Cys Ile Leu Met Val Asp Ala Thr Arg Gly Ile
 260 265 270
 Glu Ser Gln Asp Leu Asn Ile Phe Ser Leu Ile Gln Lys Asn Ser Lys
 275 280 285
 Gly Leu Val Val Val Val Asn Lys Trp Asp Leu Val Glu Asn Lys Thr
 290 295 300
 Asp Lys Val Met Lys Thr Phe Glu Glu Ala Ile Arg Ser Arg Phe Ala
 305 310 315 320
 Pro Phe Val Asp Phe Pro Ile Val Phe Ala Ser Ala Leu Thr Lys Gln
 325 330 335
 Arg Ile Leu Lys Val Leu Glu Glu Ala Arg Lys Val Tyr Glu Asn Arg
 340 345 350
 Met Ile Lys Ile Pro Thr Ala Arg Leu Asn Glu Glu Met Leu Pro Leu
 355 360 365

Ile Glu Ala Tyr Pro Pro Pro Ala Thr Lys Gly Lys Tyr Ile Lys Ile
 370 375 380
 Lys Tyr Val Thr Gln Leu Pro Asn Thr Gln Val Pro Ser Phe Val Phe
 385 390 395 400
 Phe Ala Asn Leu Pro Gln Tyr Val Lys Glu Pro Tyr Arg Arg Phe Leu
 405 410 415
 Glu Asn Lys Met Arg Glu Lys Trp Asp Leu Ser Gly Thr Pro Ile Asn
 420 425 430
 Ile Tyr Ile Arg Gln Lys
 435

<210> 8130
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 8130
 Asn Asp Met Lys Lys Ile Leu Val Gly Thr Leu Thr Cys Leu Phe Gly
 1 5 10 15
 Ala Ile Ala Gly His Ala Gln Gln Asp Pro Val Leu Met Arg Ile Asn
 20 25 30
 Gly Gln Asp Ile Thr Arg Ser Glu Phe Glu Arg Phe Cys His Arg Asn
 35 40 45
 Lys Pro Ser Gly Ile Ala Gly Lys Glu Thr Leu Lys Arg Cys Ala Asp
 50 55 60
 Leu Phe Val Asp Met Lys Leu Lys Leu Ser Ala Ala Gln Lys Ala Gly
 65 70 75 80
 Leu Asp Thr Val Ser Asp Phe Arg Thr Glu Met Glu Asn Tyr His Arg
 85 90 95
 Ala Leu Ser Arg Ser Tyr Leu Thr Asp Ser Ala Thr Asp Glu Ala Tyr
 100 105 110
 Ala Lys Lys Leu Tyr Asp Gln Met Lys Thr Arg Ser Ala Ala Gly Glu
 115 120 125
 Val Lys Val Met Arg Ile Phe Arg Tyr Leu Pro Gln Thr Ala Leu Pro
 130 135 140
 His His Leu Arg Glu Ala Gln Ile Leu Met Asp Ser Leu Tyr His Val
 145 150 155 160
 Leu Glu Thr His Pro Asp Ile Asp Phe Arg Thr Leu Val Asn Lys Tyr
 165 170 175
 Ser Asp Asp Lys Lys Glu Phe Trp Met Gly Trp Leu Gln Thr Ser Gln
 180 185 190
 Glu Phe Glu Glu Val Ala Phe Ser Leu Lys Asp Gly Glu Tyr Ser Lys
 195 200 205
 Pro Phe Phe Thr Pro Lys Gly Ile Gln Ile Ile Lys Val Thr Gly Arg
 210 215 220
 Arg Glu Ile Pro Pro Phe Glu Gln Ile Arg Gly Glu Leu Ile His Lys
 225 230 235 240
 Leu Ser Arg Arg Pro Gly Thr Asp Lys Glu Ile Glu Leu Trp Val Asn
 245 250 255
 Lys Leu Lys Ser Thr Cys Gln Tyr Thr Pro Asp Lys Ala Gly Met Glu
 260 265 270
 Glu Leu Leu Ala Ser Gly Arg Thr Ser Arg Thr Leu Phe Thr Leu Asp
 275 280 285
 Gly Lys Ser Phe Thr Gly Lys Asp Phe Glu Arg Phe Ala Asp Ala His
 290 295 300
 Pro Met Gly Ile Lys Arg Gln Leu Asn Ala Phe Val Val Lys Ser Ile
 305 310 315 320
 Leu Asp Tyr Glu Asn Asn Arg Leu Glu Gln Lys Tyr Pro Asp Phe Arg
 325 330 335

4363
 B.fragilis
 8130
 519
 PRT
 8130

Leu Ala Leu Gln Gln Arg Arg Asp Asp Leu Leu Leu Ala Ala Ile Thr
 340 345 350
 Arg Arg Glu Ser Arg Gln Val Ser Leu Ser Asp Ser Val Ala Leu Lys
 355 360 365
 Ala Phe Phe Lys Glu His Arg Thr Asp Tyr Asn Trp Asp Ser Pro Arg
 370 375 380
 Tyr Arg Gly Ala Val Leu His Gly Thr His Lys Lys Thr Leu Lys Ser
 385 390 395 400
 Ala Arg Lys Phe Leu Lys Lys Leu Pro Glu Glu Glu Trp Lys Asp Ala
 405 410 415
 Ile Arg Leu Thr Phe Asn Thr Pro Ala Ser Pro Ala Thr Ile Arg Ile
 420 425 430
 Glu Gln Gly Thr Phe Ala Glu Gly Asp Asn Val Phe Val Asp Lys Leu
 435 440 445
 Val Phe Lys Lys Gly Asp Phe Glu Pro Leu Lys Ser Tyr Pro Phe Thr
 450 455 460
 Val Val Leu Gly Glu Lys Lys Lys Gly Pro Glu Ser Tyr His Glu Ile
 465 470 475 480
 Ile Pro Gln Leu Ile Arg Asp Tyr Gln Asn His Leu Asp Ala Leu Trp
 485 490 495
 Thr Glu Arg Leu Arg Ala Ser Ala Lys Val Glu Ile Asn Gln Glu Val
 500 505 510
 Leu Lys Thr Val Asn Asn His
 515

<210> 8131
 <211> 627
 <212> PRT
 <213> B.fragilis

<400> 8131
 Arg Gln Met Lys Ser Ser Tyr Ile Cys Cys Val Leu Leu Phe Val Leu
 1 5 10 15
 Phe Leu Val Ser Cys Thr Asp Gly Arg Ser Glu Gly Gln Val Ala Arg
 20 25 30
 Leu Leu Arg Gln Ala Glu Met Cys Met Glu Glu Cys Pro Asp Ser Ala
 35 40 45
 Leu Val Tyr Leu His Gln Ile Pro Asp Pro Glu Lys Leu Thr Gly Glu
 50 55 60
 Asn Gln Ala Asp Tyr Cys Leu Leu Leu Thr Gln Ala Met Asp Lys Asn
 65 70 75 80
 Asp Leu Pro Leu Ser Ser Asp Ser Leu Ile Gln Ile Ala Val Gly Tyr
 85 90 95
 Tyr Ser Asn Gly Lys Asp Arg Leu Lys Lys Gly Lys Ala Ser Phe Tyr
 100 105 110
 Leu Gly Arg Val Lys Ser Ser Arg Gly Met Leu Glu Asp Ala Gln Lys
 115 120 125
 Tyr Phe Leu Glu Ala Leu Ser Ile Leu Asp Val Thr Asp Asn Leu Lys
 130 135 140
 Tyr Gln Ala Leu Val Arg Asn His Leu Gly Gln Leu Tyr Met Asn Leu
 145 150 155 160
 Asp Leu Tyr Gln Asp Ala Leu Ile Met Asn Ser Gln Ser Val Ser Leu
 165 170 175
 Phe Gln Gln Leu Thr Asp Thr Ala Asn Leu Val Tyr Ala Glu Arg Asp
 180 185 190
 Met Gly Arg Ile Tyr Leu Leu Glu Gly Arg Gln Asp Ser Ala Ser Leu
 195 200 205
 Tyr Tyr Gln Gln Ala Ile Asn Asp Ala Leu Ser Tyr Phe Lys Ser Asp
 210 215 220

Ile Tyr Lys Asp Ile Val Ser Glu Trp Gly Gln Ile Ser Met Tyr Leu
 225 230 235 240
 Glu Met Ser Pro Ser Ala Glu Gln Met Leu Leu Ser Asn Leu Glu Ser
 245 250 255
 Asp Leu Val Leu Asp Lys Thr Pro Val Cys Leu Ser Leu Gly Ile Tyr
 260 265 270
 Tyr Leu Ser Asn Lys Leu Tyr Ser Lys Ala Glu Gly Tyr Leu Leu Lys
 275 280 285
 Ala Ala Ala Ser Ser Arg Pro Tyr Thr Arg Val Ser Ala Tyr Lys Tyr
 290 295 300
 Leu Gly His Leu Glu Thr Arg Asn Leu Asp Leu Ile Tyr Trp Asp Gln
 305 310 315 320
 Tyr Glu Gln Ala Leu Asp Ser Leu Glu Arg Gln Asn Leu Ala Tyr Ala
 325 330 335
 Val Lys Glu Ile Gln Glu Lys Tyr Asn Asn Ala Ala Leu Gln Ala His
 340 345 350
 Thr Phe Lys Leu Glu Asn Glu Arg Leu His Ser Thr Ile Ser Tyr Leu
 355 360 365
 Ser Val Ile Leu Leu Leu Leu Ser Ile Thr Ser Val Ile Tyr Val Phe
 370 375 380
 Tyr Met Lys Glu Arg Arg Arg Arg Gln Ile Glu Lys Glu Glu Phe Asn
 385 390 395 400
 Arg Asn Met Lys Ala His Glu Gln Glu Arg Ala Arg Leu Leu Ala Glu
 405 410 415
 Leu Ser Asp Ser Lys Leu His Val Glu Lys Leu Glu Gln Leu Lys Ser
 420 425 430
 Glu Gln Lys Gln Ser Ser Leu Glu Val Gln Glu Lys Thr Asn Ala Leu
 435 440 445
 Leu Glu Gln Glu Lys Glu His Ser Cys Lys Ile Ser Gln Gln Leu Glu
 450 455 460
 Glu Leu Lys Lys Lys Trp Lys Asn Gln Leu Ser Ile Asn Ile Asp Leu
 465 470 475 480
 Arg Ala Arg Asn Lys Asp Leu Ser Tyr Lys Ile Lys Ser Leu Lys Asp
 485 490 495
 Ser Asp Met Glu Asn Thr Pro Gly Leu Tyr Ala Ser Ile Asn Leu Leu
 500 505 510
 Val Arg Ile Leu Thr Cys Asp Leu Ser Glu Ile Lys Thr Leu Lys Val
 515 520 525
 Asp Asp Trp Glu Gly Leu Phe Gln Cys Ile Asp Leu Leu Tyr Gly Asn
 530 535 540
 Ser Leu Arg Lys Phe Ile Asp Gln Tyr Gln Lys Gln His Asp Glu Glu
 545 550 555 560
 Leu Asp Arg Arg Val Val Ala Ile Cys Tyr Phe Glu Tyr Ile Lys Val
 565 570 575
 Lys His Ala Arg Gln Ala Ala Ile Leu Arg Val Ser Ala Gln Ala Leu
 580 585 590
 Ser Lys Arg Lys Gln Arg Leu Lys Ile Glu Leu Gly Val Pro Asp Met
 595 600 605
 Ala Ser Val Gly Arg Val Val Lys Pro Val Cys Pro Ser Asn Lys Lys
 610 615 620
 Glu Leu Met
 625

<210> 8132
 <211> 571
 <212> PRT
 <213> B.fragilis

<400> 8132

Ser	Tyr	Phe	Asp	Met	Phe	Arg	Phe	Asn	Lys	Glu	Asn	Lys	Phe	Gln	Gly
1				5					10					15	
Arg	His	Arg	Phe	Leu	Leu	Ala	Gly	Thr	Leu	Cys	Leu	Leu	Ala	Val	Cys
			20					25					30		
Phe	Leu	Met	Ala	Gln	Asp	Lys	Lys	Pro	Gln	His	Asp	Lys	Lys	Ala	Gln
		35					40					45			
Pro	Glu	Gln	Lys	Val	Glu	Pro	Glu	Lys	Ala	Gln	Gly	Lys	Lys	Lys	Thr
	50					55					60				
Arg	Val	Asp	Leu	Leu	His	Ala	Asp	Gln	Gly	Gln	Ala	Asp	Lys	Leu	Ala
65					70					75					80
Arg	Pro	Asp	Val	Gln	Val	Leu	Ile	Gly	Ser	Val	Lys	Leu	Arg	His	Asp
				85					90					95	
Ser	Met	Tyr	Met	Tyr	Cys	Asp	Ser	Ala	Leu	Ile	Tyr	Glu	Lys	Thr	Asn
			100					105					110		
Ser	Phe	Glu	Ala	Phe	Ser	Asn	Val	Arg	Met	Glu	Gln	Gly	Asp	Thr	Leu
		115					120					125			
Phe	Ile	Tyr	Gly	Asp	Tyr	Leu	Phe	Tyr	Asp	Gly	Met	Thr	Gln	Ile	Ala
	130					135					140				
Gln	Leu	Arg	Glu	Asn	Val	Lys	Met	Ile	Asn	Arg	Asn	Thr	Thr	Leu	Leu
145					150					155					160
Thr	Asp	Ser	Leu	Asn	Tyr	Asp	Arg	Leu	Tyr	Asn	Leu	Gly	Tyr	Tyr	Phe
				165					170					175	
Asp	Gly	Gly	Thr	Leu	Met	Asp	Glu	Glu	Asn	Val	Leu	Thr	Ser	Asp	Trp
			180					185						190	
Gly	Glu	Tyr	Ser	Pro	Ala	Thr	Lys	Leu	Ser	Val	Phe	Asn	His	Asp	Val
		195					200					205			
Lys	Leu	Val	Asn	Pro	Arg	Phe	Val	Leu	Thr	Ser	Asp	Thr	Leu	Lys	Tyr
	210					215					220				
Ser	Thr	Asp	Thr	Lys	Ile	Ala	Thr	Ile	Leu	Gly	Pro	Ser	Asp	Ile	Val
225					230					235					240
Ser	Glu	Gln	Asn	His	Ile	Tyr	Ser	Glu	Arg	Gly	Ile	Tyr	Asn	Thr	Val
				245					250					255	
Ser	Gly	Gln	Ala	Glu	Leu	Leu	Asp	Arg	Ser	Val	Leu	Thr	Asn	Asp	Gly
			260					265					270		
Lys	Arg	Leu	Thr	Gly	Asp	Ser	Leu	Phe	Tyr	Asp	Arg	Lys	Ala	Gly	Tyr
		275					280					285			
Gly	Glu	Ala	Phe	Asp	Asn	Val	Gln	Met	Asn	Asp	Thr	Val	Asn	Lys	Asn
	290					295					300				
Met	Leu	Thr	Gly	Asp	Tyr	Cys	Tyr	Tyr	Asp	Glu	Leu	Lys	Gln	Asn	Ala
305					310					315					320
Leu	Ala	Thr	Lys	Arg	Ala	Val	Ala	Val	Asp	Tyr	Ser	Arg	Gly	Asp	Ser
				325					330					335	
Leu	Phe	Met	His	Ala	Asp	Thr	Leu	Leu	Met	Asn	Ser	Tyr	Asn	Leu	Asp
			340					345					350		
Thr	Asp	Ser	Leu	Phe	Arg	Glu	Met	Arg	Ala	Phe	His	Lys	Val	Arg	Met
						360						365			
Tyr	Ser	Ile	Asp	Leu	Gln	Gly	Val	Cys	Asp	Ser	Leu	Val	Phe	Asn	Thr
	370					375					380				
Lys	Asp	Ser	Cys	Leu	Thr	Met	Tyr	Arg	Asp	Pro	Ile	Leu	Trp	Asn	Glu
385					390					395					400
Gly	Gln	Gln	Leu	Leu	Gly	Glu	Glu	Ile	Lys	Val	Tyr	Met	Asn	Asp	Ser
				405					410					415	
Thr	Ile	Asp	Trp	Ala	His	Ile	Ile	Asn	Gln	Ala	Leu	Thr	Val	Glu	Gln
			420					425					430		
Lys	Asp	Ser	Ile	His	Phe	Asn	Gln	Ile	Ser	Gly	Lys	Glu	Ile	Lys	Ala
		435					440					445			
Tyr	Phe	Ala	Glu	Gly	Glu	Ala	Arg	Lys	Val	Asp	Val	Ile	Gly	Asn	Val
	450					455				460					
Leu	Val	Val	Tyr	Tyr	Pro	Gln	Glu	Gln	Asp	Ser	Thr	Met	Ile	Gly	Met

465 470 475 480
 Asn Thr Ser Glu Thr Ser Leu Leu Asn Met Tyr Leu Lys Asp Arg Lys
 485 490 495
 Met Glu Arg Met Val Met Ser Pro Lys Ser Asn Gly Thr Leu Tyr Pro
 500 505 510
 Met Asn Gln Ile Pro Pro Asp Lys Met Lys Leu Pro Thr Phe Ser Trp
 515 520 525
 Phe Asp Tyr Val Arg Pro Leu Ser Lys Glu Asp Ile Phe Asn Trp Arg
 530 535 540
 Gly Lys Lys Ala Gly Glu Ala Leu Arg Lys Thr Glu Arg Lys Ala Ile
 545 550 555 560
 Ser Gly Pro Lys Arg Glu Ile Ile Asn Met Lys
 565 570

<210> 8133
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 8133
 Cys Phe Phe Asp Met Lys Ser Gln Arg Leu Gly Leu Gln Pro Ile Lys
 1 5 10 15
 Asn Tyr Glu Arg Val Val Asn Pro Arg Lys Lys Arg Phe His Met Ser
 20 25 30
 Ser Arg Met Asn Ser His Gly Lys Ile Ile Ile Thr Lys Ile Ala Asp
 35 40 45
 Tyr Glu Ser Asn Tyr Ile Lys Lys Ala Gly Leu Leu Glu Gly Asp Glu
 50 55 60
 Ile Ile Ala Ile Asn Glu Ile Pro Ile Lys Met Ile Thr Ile Glu Glu
 65 70 75 80
 Asn Thr Lys Leu Asn Arg Arg Gly Gln Gly Lys Ser Tyr Lys Ile Pro
 85 90 95
 Val Val Ile Asp Arg Asn Glu Val Gln Gly Asp
 100 105

<210> 8134
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8134
 Lys His Ala Glu Ile Tyr Gly Ser Phe Ile Lys His His Ser Phe Arg
 1 5 10 15
 Asn Met Phe Ile Lys Phe Ile Phe Val Leu Thr Tyr Gln Lys Glu Glu
 20 25 30
 His Tyr Cys His Phe Pro Thr Ile His Tyr Lys Ala Phe Gln Leu Tyr
 35 40 45
 Pro Ser Ser Gln Tyr Pro Phe Arg Lys Val Ser Ile Ser Ala Ile Ala
 50 55 60
 Ala Leu Ser Ile Gln
 65

<210> 8135
 <211> 339
 <212> PRT
 <213> B.fragilis

<400> 8135
 Ile Lys Thr Glu Leu Met Glu Lys Ile Asn Ala Val Ile Thr Gly Val

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1           5           10           15
Gly Gly Tyr Val Pro Asp Tyr Val Leu Thr Asn Asp Glu Ile Ser Lys
20           25           30
Met Val Asp Thr Asn Asp Glu Trp Ile Met Thr Arg Ile Gly Val Lys
35           40           45
Glu Arg Arg Ile Leu Asn Glu Glu Gly Leu Gly Thr Ser Tyr Met Ala
50           55           60
Arg Lys Ala Ala Lys Gln Leu Met Lys Lys Thr Gly Ser Asn Pro Asp
65           70           75           80
Asp Ile Asp Leu Val Ile Val Ala Thr Thr Thr Pro Asp Tyr His Phe
85           90           95
Pro Ser Thr Ala Ser Ile Leu Cys Asp Lys Leu Gly Leu Lys Asn Ala
100          105          110
Phe Ala Phe Asp Leu Gln Ala Ala Cys Ser Gly Phe Leu Phe Leu Met
115          120          125
Glu Thr Ala Ala Asn Phe Ile Arg Ser Gly Arg Tyr Lys Lys Ile Ile
130          135          140
Ile Val Gly Ala Asp Lys Met Ser Ser Met Val Asp Tyr Thr Glu Arg
145          150          155          160
Ala Thr Cys Pro Ile Phe Gly Asp Gly Ala Ala Ala Phe Met Val Glu
165          170          175
Pro Thr Thr Glu Asp Leu Gly Ile Met Asp Ala Ile Leu Arg Thr Asp
180          185          190
Gly Lys Gly Leu Pro Phe Leu His Met Lys Ala Gly Gly Ser Val Cys
195          200          205
Pro Pro Ser Tyr Phe Thr Val Asp Asn Lys Met His Tyr Ile His Gln
210          215          220
Glu Gly Arg Thr Val Phe Lys Tyr Ala Val Ser Asn Met Ser Asp Val
225          230          235          240
Ser Ala Ala Ile Ala Glu Lys Asn Gly Leu Thr Lys Asp Asn Ile Asp
245          250          255
Trp Ile Val Pro His Gln Ala Asn Met Arg Ile Ile Glu Ala Val Ala
260          265          270
His Arg Met Glu Val Pro Met Glu Lys Val Leu Val Asp Ile Gln His
275          280          285
Tyr Gly Asn Thr Ser Ala Gly Thr Leu Pro Leu Cys Ile Trp Asp Phe
290          295          300
Glu Glu Lys Leu Lys Lys Gly Asp Asn Ile Ile Phe Thr Ala Phe Gly
305          310          315          320
Ala Gly Phe Thr Trp Gly Ala Val Tyr Val Lys Trp Gly Tyr Asp Gly
325          330          335
Lys Lys Glu

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<210> 8136

<211> 130

<212> PRT

<213> B.fragilis

<400> 8136

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Ser Ile Ser Phe Ser Ile Ser Ile Thr Arg Phe Leu Leu Pro Ala Gln
1           5           10           15
Arg Arg Phe Cys Lys Leu Ser Val Ser Leu Ile Leu Leu Leu Asn
20           25           30
His Leu Pro Glu Ser Phe Ile Ser Phe Ile Ser Phe Phe Ile Ile Phe
35           40           45
Thr Met Asn Ile Tyr Val Gly Asn Leu Ser Tyr Arg Val Lys Glu Ala
50           55           60
Asp Leu Gln Gln Val Met Glu Asp Tyr Gly Thr Val Thr Ser Cys Lys

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65		70		75		80									
Val	Ile	Met	Asp	Arg	Glu	Thr	Gly	Lys	Ser	Lys	Gly	Phe	Gly	Phe	Val
			85						90					95	
Glu	Ile	Ala	Asp	Asp	Ala	Ala	Gly	Ala	Lys	Ala	Ile	Ala	Glu	Leu	Asn
			100					105					110		
Gly	Ala	Glu	Tyr	Glu	Gly	Arg	Thr	Met	Val	Val	Lys	Glu	Ala	Arg	Pro
		115					120					125			
Arg	Glu														
	130														

<210> 8137

<211> 62

<212> PRT

<213> B.fragilis

<400> 8137

Asn	Arg	Leu	Leu	Arg	Asn	Lys	Asp	Phe	Ser	Leu	Ser	Val	Ile	Gly	Ile
1			5						10					15	
Asp	Lys	Ala	Arg	Asp	Tyr	Pro	Val	Lys	Cys	Ile	Glu	Ile	Arg	Glu	Val
		20						25					30		
Ala	Asp	Val	Glu	Tyr	Ile	Pro	Leu	Glu	Ala	Val	Ser	Ser	Ser	Leu	Leu
		35					40					45			
Ile	Asn	Asp	Ile	Trp	Gly	Tyr	Tyr	Val	Phe	Tyr	Leu	Ser	Lys		
	50					55					60				

<210> 8138

<211> 257

<212> PRT

<213> B.fragilis

<400> 8138

Gln	Arg	Ile	Trp	Lys	Lys	Ala	Ser	Lys	Met	Val	Leu	Arg	Thr	Glu	Asp
1			5						10					15	
Leu	Val	Lys	Lys	Tyr	Gly	Lys	Arg	Thr	Val	Val	Ser	His	Val	Ser	Ile
		20						25					30		
Asn	Val	Lys	Gln	Gly	Glu	Ile	Val	Gly	Leu	Leu	Gly	Pro	Asn	Gly	Ala
		35					40					45			
Gly	Lys	Thr	Thr	Ser	Phe	Tyr	Met	Thr	Val	Gly	Leu	Ile	Thr	Pro	Asn
	50					55					60				
Glu	Gly	Arg	Ile	Phe	Leu	Asp	Asp	Leu	Glu	Ile	Thr	Lys	Tyr	Pro	Val
65					70					75					80
Tyr	Lys	Arg	Ala	Gln	Thr	Gly	Ile	Gly	Tyr	Leu	Ala	Gln	Glu	Ala	Ser
			85						90					95	
Val	Phe	Arg	Gln	Met	Thr	Val	Glu	Asp	Asn	Ile	Ala	Ser	Val	Leu	Glu
			100					105					110		
Met	Thr	Asn	Lys	Pro	Leu	Asp	Tyr	Gln	Lys	Asp	Lys	Leu	Glu	Ser	Leu
		115					120					125			
Ile	Ala	Glu	Phe	Arg	Leu	Gln	Lys	Val	Arg	Lys	Asn	Lys	Gly	Thr	Gln
	130					135					140				
Leu	Ser	Gly	Gly	Glu	Arg	Arg	Arg	Thr	Glu	Ile	Ala	Arg	Cys	Leu	Ala
145					150					155					160
Ile	Asp	Pro	Lys	Phe	Ile	Met	Leu	Asp	Glu	Pro	Phe	Ala	Gly	Val	Asp
			165						170					175	
Pro	Ile	Ala	Val	Glu	Asp	Ile	Gln	Gln	Ile	Val	Trp	Lys	Leu	Lys	Asp
			180					185					190		
Lys	Asn	Ile	Gly	Ile	Leu	Ile	Thr	Asp	His	Asn	Val	Gln	Glu	Thr	Leu
		195					200					205			
Ser	Ile	Thr	Asp	Arg	Ala	Tyr	Leu	Leu	Phe	Glu	Gly	Lys	Ile	Leu	Phe
	210						215					220			

Gln Gly Thr Pro Glu Glu Leu Ala Glu Asn Lys Ile Val Arg Glu Lys
 225 230 235 240
 Tyr Leu Ser Asn Ser Phe Val Leu Arg Arg Lys Asp Phe Gln Leu Lys
 245 250 255
 Asp

<210> 8139
 <211> 224
 <212> PRT
 <213> B.fragilis

<400> 8139
 Leu Met Asn Arg Thr Phe Cys Phe Val Pro Val Arg Lys Gly Ser Arg
 1 5 10 15
 Gly Ile Pro Gly Lys Asn Leu Arg Leu Leu Gly Asp Lys Pro Leu Val
 20 25 30
 Cys Trp Ile Ile Asp Thr Ile Leu Ala Ser Gly Ile Ala Asp Glu Val
 35 40 45
 Cys Val Ala Thr Asn Cys Asp Glu Met Glu Ser Leu Ile Arg Gly Arg
 50 55 60
 Tyr Lys Gly Val Val Gln Ile Phe Arg Arg Ser Glu Trp Ser Ala Arg
 65 70 75 80
 Asp Glu Ala Ser Ser Leu Glu Val Val Gln Glu Tyr Leu Asn Tyr Arg
 85 90 95
 Lys Pro Asp Arg Asn Asp Asp Phe Ile Leu Leu Gln Ala Thr Ser Pro
 100 105 110
 Phe Thr Thr Ala Gln Glu Leu Arg Gly Leu Val Glu Glu Met Lys Arg
 115 120 125
 Gly Glu Ala Asp Ser Tyr Val Ala Cys Cys Arg Leu Lys Lys Phe Arg
 130 135 140
 Trp Ser Asp Glu Gly Arg Pro Leu Asp Tyr Ser Phe Glu Thr Lys Pro
 145 150 155 160
 Arg Arg Gln Glu Tyr Lys Gly Phe Leu Ile Glu Ser Gly Ala Phe Tyr
 165 170 175
 Ala Ser Thr Val Gly Arg Ile Leu Asp Ser Gly Gln Leu Leu Ser Gly
 180 185 190
 Val Val Lys Val Val Glu Val Gly Pro Ala Gly Met Ile Asp Val Asp
 195 200 205
 Glu Glu Ala Asp Trp Arg Leu Ala Glu His Tyr Ile Glu Thr Gly Leu
 210 215 220

<210> 8140
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 8140
 Ile Ile Val Arg Met Asn Val Ser Leu Gln Asn Ile Asp Lys Val Ser
 1 5 10 15
 Ala Leu Leu Thr Val Lys Leu Glu Lys Ala Asp Tyr Gln Pro Gln Val
 20 25 30
 Asp Lys Ser Leu Lys Asn Ile Arg Gln Lys Ala Gln Val Pro Gly Phe
 35 40 45
 Arg Pro Gly Met Val Pro Met Ser Leu Val Lys Lys Met Tyr Gly Lys
 50 55 60
 Ser Val Ile Ala Asp Glu Val Asn Lys Leu Leu Ser Glu Lys Val Tyr
 65 70 75 80
 Ala Tyr Ile Lys Glu Asn Ile Ile Asn Ile Leu Gly Asp Pro Met Pro

	85		90		95
Ile Glu Glu Lys	Gln Pro Asp Ile Asp Phe Asp Thr Lys Glu Glu Phe				
	100		105		110
Glu Phe Val Phe Asp Ile Ala Trp Ala Pro Glu Phe Lys Ala Glu Val					
	115		120		125
Ser Asp Gln Asp Lys Val Asp Tyr Tyr Thr Ile Glu Val Pro Asp Glu					
	130		135		140
Met Val Glu Asn Gln Ile Lys Ala Tyr Thr Gln Arg Asn Gly Lys Tyr					
	145		150		155
Glu Lys Val Asp Ala Tyr Glu Glu Asn Asp Met Leu Lys Gly Leu Leu					
	165		170		175
Ala Glu Leu Asp Glu Glu Gly Asn Thr Lys Glu Gly Gly Ile Gln Val					
	180		185		190
Glu Gly Ala Val Met Met Pro Ser Tyr Met Lys Asn Asp Glu Gln Lys					
	195		200		205
Ala Ile Phe Ala Asn Ala Lys Val Asn Asp Val Leu Val Phe Asn Pro					
	210		215		220
Asn Thr Ala Tyr Glu Gly Asn Ala Val Glu Met Ala Ser Leu Leu Lys					
	225		230		235
Ile Asp Lys Glu Ala Ala Glu Val Lys Gly Asn Phe Ser Phe Gln					
	245		250		255
Val Glu Glu Val Thr Arg Phe Val Asn Gly Glu Leu Asn Gln Glu Ile					
	260		265		270
Phe Asp Gln Val Phe Gly Lys Asp Val Val Lys Thr Glu Glu Glu Phe					
	275		280		285
Arg Ala Lys Val Lys Glu Ser Ile Ala Ala Gln Phe Val Ala Asp Ser					
	290		295		300
Asp Tyr Lys Phe Leu Ile Asp Val Arg Lys Val Leu Thr Asp Lys Val					
	305		310		315
Gly Lys Leu Glu Phe Pro Asp Ala Leu Leu Lys Arg Val Met Leu Val					
	325		330		335
Asn Asn Lys Asp Lys Gly Glu Glu Phe Val Asn Glu Asn Tyr Asp Lys					
	340		345		350
Ser Ile Glu Glu Leu Thr Trp His Leu Ile Lys Glu Gln Leu Val Lys					
	355		360		365
Glu Asn Asp Ile Lys Val Glu Gln Asp Asp Val Ile Asn Met Ala Lys					
	370		375		380
Glu Ala Thr Lys Ala Gln Phe Ala Gln Tyr Gly Met Leu Thr Ile Pro					
	385		390		395
Asp Asp Ile Leu Glu Asn Tyr Ala Lys Glu Met Leu Lys Lys Lys Glu					
	405		410		415
Ser Ile Asp Gly Leu Val Asn Arg Val Val Glu Thr Lys Leu Ala Ala					
	420		425		430
Ala Leu Lys Gly Lys Val Thr Leu Glu Asn Lys Thr Val Ser Met Glu					
	435		440		445
Glu Phe Asn Lys Met Phe Glu					
	450		455		

<210> 8141

<211> 88

<212> PRT

<213> B.fragilis

<400> 8141

Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val					
1	5		10		15
Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val					
	20		25		30
Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln					

35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 8142
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 8142
 Ser Leu Gln Arg Tyr Lys Lys Ser Pro Asn Val Met Tyr Tyr Leu Thr
 1 5 10 15
 Asn Phe His Leu Asn Leu Lys Leu Val Asp Ile Ile Arg Ala Thr Lys
 20 25 30
 Ile Arg Ile Ile Ile Leu Ile Thr Tyr Lys Leu Ser Val Asn Ile Arg
 35 40 45
 Ile Leu Asn Ser Ile Leu Phe Ile Thr Arg Phe Pro Tyr Ser Gln Gly
 50 55 60
 Gln Ser Arg Asn Arg Ala Ala Arg Arg Ser Leu Ser Phe Pro Pro Val
 65 70 75 80

<210> 8143
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 8143
 Cys Val Met Arg Ile Ile Ser Phe Ala Ala Ile Arg Asn Tyr Ala Lys
 1 5 10 15
 Lys His Ala Asp Ala Asp Val Pro Leu Arg Asp Trp Tyr Lys Lys Thr
 20 25 30
 Glu Lys Ala Asp Trp Ser Cys Leu Ala Asp Ile Lys Gln Thr Phe Asn
 35 40 45
 Ser Val Asp Tyr Val Gly Asn Asp Arg Phe Val Phe Asn Ile Lys Gly
 50 55 60
 Asn Asp Tyr Arg Leu Val Ala Met Ile Leu Phe Ala Ala Lys Lys Val
 65 70 75 80
 Phe Ile Arg Trp Ile Gly Thr His Lys Glu Tyr Asp Asn Lys Asp Cys
 85 90 95

<210> 8144
 <211> 260
 <212> PRT
 <213> B.fragilis

<400> 8144
 Thr Phe Asn Gly Met Ile Glu Val Lys Gly Leu Tyr Lys Ser Phe Glu
 1 5 10 15
 Gly Lys Thr Val Leu His Asn Ile Asp Ala Thr Phe Glu Asn Gly Lys
 20 25 30
 Thr Ser Leu Ile Ile Gly Gln Ser Gly Ser Gly Lys Thr Val Leu Met
 35 40 45
 Lys Cys Ile Val Gly Leu Leu Thr Pro Glu Lys Gly Glu Val Leu Tyr
 50 55 60
 Asp Gly Arg Asn Phe Leu Ala Met Gly Lys Lys Glu Lys Lys His Leu

Leu Ile Glu Ser Leu Glu Ile Ile Lys Leu Asp Asn Arg Glu Glu Ala
 65 70 75 80
 Leu Ile Ala Thr Tyr Pro Phe Gly Ile Asp Val Ser Ser Asn Tyr Ile
 85 90 95
 Leu Ile Glu Pro Asp Gly Val Ser Ala Leu Lys Leu Phe Thr Arg Lys
 100 105 110
 Gly Arg Tyr Val Ala Asp Ile Gly Gly Val Gly Gln Gly Pro Gly Glu
 115 120 125
 Tyr Lys Tyr Ala Val Asn Arg Phe Leu Asp Glu Lys Gln Gly Arg Val
 130 135 140
 Ala Ile Ala Glu Asn Lys Lys Ile Leu Phe Phe Asp Leu Lys Gly Gln
 145 150 155 160
 Phe Leu Ser Glu Glu Ser Ile Ser Leu Pro Glu Thr Ile Thr Lys Ser
 165 170 175
 Ser Ile Trp Ile Asp Leu Glu Asn Glu Lys Ala Val Val Val Val Leu
 180 185 190
 Pro Phe Ala Asp Ile Gly Asn Pro Lys Ala Pro Ile Ser Lys Asn Leu
 195 200 205
 Cys Trp Val Gln Asp Phe Lys Gly Asn Ile Leu Gln Lys Ile Ser Ala
 210 215 220
 Ile Asn Tyr Ala Ile Val Pro Asp Tyr Ser Asn Glu Val Leu Ala Pro
 225 230 235 240
 Arg Asn Val Asp Ala Tyr Ser Phe Ser Leu Cys Gln Val Val Gly Arg
 245 250 255
 Thr Arg Pro Asp Thr Leu Tyr His Tyr Asp Ile Ala Asn Asn Leu Leu
 260 265 270
 Lys Pro Tyr Phe Thr Leu Asp Asn Val Met Gln Glu Asp Lys Tyr Ile
 275 280 285
 Val Thr Ser Leu Tyr Glu Thr Pro Glu Tyr Tyr Trp Ser Arg Val Thr
 290 295 300
 Ile Gly Pro Ala Lys Val Leu Ser Asp Gly Ala Pro Val Arg Met Thr
 305 310 315 320
 Val Phe Asn Val Arg Val Ser Lys Lys Asp Gly Ser Val Lys Arg Ile
 325 330 335
 Asp Arg Phe Thr Asn Asp Phe Leu Gly Leu Ser Tyr Pro Phe Leu Thr
 340 345 350
 Met Arg Asn Gly Tyr Val Cys Ile Thr Tyr Glu Pro Leu Glu Leu Met
 355 360 365
 Glu Ala Leu Asp Lys Val Leu Ala Gln Thr Asp Leu Lys Pro Asp Val
 370 375 380
 Arg Lys Arg Ala Thr Asp Leu Arg Asn Ser Leu His Glu Asn Asp Asn
 385 390 395 400
 Asp Ile Leu Ile Ile Gly Lys Leu Lys Gln
 405 410

<210> 8147

<211> 403

<212> PRT

<213> B.fragilis

<400> 8147

Arg Glu Tyr Met Lys Lys Tyr Leu Tyr Phe Ile Phe Phe Val Thr Leu
 1 5 10 15
 Trp Ser Cys Ser Ala Asp Lys Val Asn Val Lys Ser Glu Asp Asn Ser
 20 25 30
 Phe Tyr Ser Val Asp Leu Arg Ile Glu Lys Thr Lys Gly Thr Val
 35 40 45
 Met Ser Leu Gly Asp Leu Met Glu Ser Tyr Glu Ile Ile Arg Leu Asp
 50 55 60

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Asn Arg Asp Glu Ala Leu Ile Lys Thr Tyr Pro Tyr Gly Val Tyr Val
65      70      75      80
Thr Asp Asn Tyr Ile Leu Leu Arg Pro Ala Asp Val Val Ser Pro Val
      85      90      95
Lys Leu Phe Thr Arg Lys Gly Arg Tyr Val Ala Asp Ile Gly Gly Val
      100      105      110
Gly Gln Gly Pro Gly Glu Tyr Leu Tyr Leu Phe Ser Trp Leu Val Asp
      115      120      125
Glu Lys Glu Asn Arg Ile Tyr Leu Gly Pro Gly Arg Ala Asp Lys Val
      130      135      140
Leu Val Tyr Asp Leu Lys Gly Asn Tyr Leu Pro Asp Glu Val Ile Arg
145      150      155      160
Phe Gly Glu Ile Val His Lys Ser Gln Ile Trp Val Asp Tyr Asp Lys
      165      170      175
Lys Asn Val Val Val Val Thr Leu Pro Phe Ser Ala Asn Val Asn Ser
      180      185      190
Asn Phe Ala Ile Asn Lys Asn Val Cys Trp Val Gln Asn Arg Asp Gly
      195      200      205
Asp Ile Val His Arg Ile Pro Val Asn His Tyr Gly Leu Ile Gly Asp
      210      215      220
Tyr Ser Asn Ala Leu Val Ala Arg Arg Asn Val Asp Ala Ile Ser Phe
225      230      235      240
Ser Ile Ser Glu Ile Pro Met Leu Arg Thr Arg Pro Asp Thr Leu Tyr
      245      250      255
His Tyr Asp Ala Val Lys Asn Ile Ile Thr Pro Cys Phe Thr Ile Asp
      260      265      270
His Val Val Ser Glu Asn Gln Ser Ala Ser Thr Val Leu Tyr Glu Thr
      275      280      285
Ser Arg Ser Tyr Trp Ala Tyr Val Thr Leu Tyr Pro Asn Asp Ile Ser
      290      295      300
Ser Ser Ala Phe Ser Val Arg Leu Thr Thr Phe Asn Val Cys Val Ser
305      310      315      320
Lys Lys Asp Gly Asn Val Arg Arg Ile Asp Arg Phe Thr Asp Pro Leu
      325      330      335
Leu Gly Leu Ser His Leu Phe Leu Met Met Asn Asn Gly Tyr Ile Cys
      340      345      350
Ile Ser Tyr Asp Pro Leu Glu Leu Met Asp Ala Leu Asp Lys Val Leu
      355      360      365
Thr Gln Thr Asp Leu Glu Leu Asp Val Arg Lys Arg Ala Thr Asp Leu
      370      375      380
Arg Asn Ser Leu His Glu Asn Asp Asn Asp Ile Leu Ile Ile Gly Lys
385      390      395      400
Leu Lys Gln

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<210> 8148

<211> 83

<212> PRT

<213> B.fragilis

<400> 8148

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Ile Leu Asn Ile Met Lys Thr Leu Arg Arg Ile Lys Leu Asn Ser Leu
1      5      10      15
Ser Gln Glu Asp Leu Ala Asp Arg Glu Met Asn Met Leu Arg Gly Gly
      20      25      30
Ser Asn Cys Ser Cys Gly Cys Met Gly Val Ser Ser Lys Ala Ser Asn
      35      40      45
Leu Glu Gly Asn Lys Asp Cys Gly Tyr Pro Leu Ser Cys Thr Cys Gly
50      55      60

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Cys Thr Gly Pro Tyr Ala Leu Ala Ala Asn Gln Glu Ala Asn Lys Gly
 65 70 75 80
 Ala Gly Ile

<210> 8149
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 8149
 Ser Val Ser Ile Ile Ile Leu Val Lys Phe Arg Phe Met Asp Lys Ile
 1 5 10 15
 Tyr Leu Trp Leu Leu Leu Leu Ile Ser Cys Ser Cys Ser His Thr Lys
 20 25 30
 Glu Lys Val Ser Asn Asp Met Asp Ser Ser Leu Cys Val Ile Asp Val
 35 40 45
 Thr Cys Glu Tyr Pro Val Glu Lys Val Asn Ile His Asp Val Ala Asp
 50 55 60
 Val Glu Tyr Val Pro Leu Glu Thr Thr Arg Asn Ser Leu Leu Ala Ser
 65 70 75 80
 Asp Cys Ser Val Phe Arg Ile Ser Asp Asp Tyr Ile Thr Val Ala Ser
 85 90 95
 Gly Val Asp Asn Gly Asn Ile Phe Phe Phe Asn Arg Lys Gly Arg Tyr
 100 105 110
 Leu Trp Thr Phe Asn Arg Arg Gly Gly Ser Ala Glu Glu Tyr Ser Ser
 115 120 125
 Ile Thr Ala Trp Asp Ala Asp Phe Gly Met Gln Glu Ile Tyr Ile Tyr
 130 135 140
 Asp Ser Phe Arg Lys Lys Ile Tyr Thr Leu Ile Pro Gln His Tyr Asn
 145 150 155 160
 Leu Thr Leu Phe Ile Ser Ser
 165

<210> 8150
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 8150
 Leu Arg Ile Leu Gly Tyr Ile Tyr Ser Phe Asp Gly Arg Tyr Lys Arg
 1 5 10 15
 Ser His Ala Leu Pro Met Lys Asp Cys Thr Phe Ile Asp Leu Tyr Asn
 20 25 30
 Tyr Asp Lys Asp Tyr Leu Ile Gly Tyr Asn Arg Phe Tyr Asp Phe Arg
 35 40 45
 Lys Lys Lys Lys Val Asp Thr His Pro Tyr Tyr Leu Ile Asp Lys Gln
 50 55 60
 Ser Gly Glu Met Ser Ser Ile Gly Ile Val Val Asp Lys Pro Ile Ser
 65 70 75 80
 Glu Lys Val His Thr Glu Ile Val Lys Phe Pro Gly Gly Ala Tyr Lys
 85 90 95
 Asp Gln Val Leu Phe Leu Ile Thr Ala Leu Ile Lys Asn Gly Asp Ala
 100 105 110
 Phe Leu Ile Ala Asp Tyr Ala Leu Asp Thr Ile Tyr Ser Tyr Arg His
 115 120 125
 His Lys Leu Val Pro Ile Ala Val Gln Thr Pro Ser Val Tyr Ala Ser
 130 135 140
 Asp Pro Pro Val Ile Val Ala Cys Glu Leu Tyr Thr Asp Ser Tyr Leu

145		150		155		160
His Phe Arg Ile Ile	Pro Met Tyr Tyr	Asn Pro Ser Ala Pro	Met Ser			
	165	170	175			
Pro Met Ala Asp Ala	Pro Glu Leu Val	Leu Asn Arg His Thr	Gly Lys			
	180	185	190			
Ile Ala Glu Trp Lys	Met Tyr Asp Tyr	Asn Tyr Ser Ser	Asp Ile Glu			
	195	200	205			
Arg Pro Val Pro Thr	Met Ile Leu Gln	Ser Ala Asp Arg	Glu Asn Tyr			
	210	215	220			
Gly Ile Ser Met Phe	Thr Ala Glu Arg	Leu Ile Glu Gln	Tyr Gln Ala			
225	230	235	240			
Gly Gly Leu Lys Gly	Glu Leu Lys Asp	Ile Ala Ser Arg	Leu Ser Ile			
	245	250	255			
Asp Asp Asn Asp Ile	Leu Met Ile Cys	Lys Tyr Lys				
	260	265				

<210> 8151

<211> 418

<212> PRT

<213> B.fragilis

<400> 8151

Glu Ile Asn Met Ala	Glu Ser Lys Asn	Asn Lys Lys Arg	Cys Ser Phe
1	5	10	15
Cys Gly Arg Ser Glu	Asn Glu Val Gly	Phe Leu Ile Thr	Gly Met Asn
	20	25	30
Gly Tyr Ile Cys Asp	Ser Cys Ala Thr	Gln Ala Tyr Glu	Ile Thr Gln
	35	40	45
Glu Ala Met Gly Ala	Gly Lys Gln Ser	Ala Gly Ala Thr	Arg Leu Asn
	50	55	60
Leu Lys Glu Leu Pro	Lys Pro Val Glu	Ile Lys Asn Phe	Leu Asp Gln
65	70	75	80
Tyr Val Ile Gly Gln	Asp Asp Ala Lys	Arg Phe Leu Ala	Val Ser Val
	85	90	95
Tyr Asn His Tyr Lys	Arg Leu Leu Gln	Lys Asp Ser Gly	Asp Asp Val
	100	105	110
Glu Ile Glu Lys Ser	Asn Ile Ile Met	Val Gly Ser Thr	Gly Thr Gly
	115	120	125
Lys Thr Leu Leu Ala	Arg Thr Ile Ala	Lys Leu Leu His	Val Pro Phe
	130	135	140
Thr Ile Val Asp Ala	Thr Val Leu Thr	Glu Ala Gly Tyr	Val Gly Glu
145	150	155	160
Asp Ile Glu Ser Ile	Leu Thr Arg Leu	Leu Gln Val Ala	Asp Tyr Asn
	165	170	175
Val Pro Glu Ala Glu	Gln Gly Ile Val	Phe Ile Asp Glu	Ile Asp Lys
	180	185	190
Ile Ala Arg Lys Gly	Asp Asn Pro Ser	Ile Thr Arg Asp	Val Ser Gly
	195	200	205
Glu Gly Val Gln Gln	Gly Leu Leu Lys	Leu Leu Glu Gly	Ser Val Val
	210	215	220
Asn Val Pro Pro Gln	Gly Arg Lys His	Pro Asp Gln Lys	Met Ile
225	230	235	240
Pro Val Asn Thr Lys	Asn Ile Leu Phe	Ile Cys Gly Gly	Ala Phe Asp
	245	250	255
Gly Ile Glu Lys Lys	Ile Ala Gln Arg	Leu Asn Thr His	Val Val Gly
	260	265	270
Tyr Asn Ala Ser Arg	Lys Thr Ala Thr	Ile Asp Lys Asn	Asn Met Met
	275	280	285
Gln Tyr Ile Ala Pro	Gln Asp Leu Lys	Ser Phe Gly Leu	Ile Pro Glu

290 295 300
 Ile Ile Gly Arg Leu Pro Val Leu Thr Tyr Leu Asn Pro Leu Asp Arg
 305 310 315 320
 Asn Ala Leu Arg Ala Ile Leu Thr Glu Pro Lys Asn Ser Ile Ile Lys
 325 330 335
 Gln Tyr Ile Lys Leu Phe Glu Met Asp Gly Val Lys Leu Thr Phe Gln
 340 345 350
 Pro Glu Val Tyr Glu Tyr Ile Val Asp Lys Ala Val Glu Tyr Lys Leu
 355 360 365
 Gly Ala Arg Gly Leu Arg Ser Ile Val Glu Thr Ile Met Met Asp Val
 370 375 380
 Met Phe Glu Ile Pro Ser Glu Asp Gln Lys Glu Tyr Glu Val Thr Leu
 385 390 395 400
 Asp Tyr Ala Lys His Gln Leu Glu Lys Ala Asn Leu Ala Arg Leu Gln
 405 410 415
 Thr Ala

<210> 8152
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 8152
 Leu Cys Val Phe Leu Cys Leu Cys Val Leu Phe Cys Phe Phe Ala Val
 1 5 10 15
 Thr Leu Leu Ile Ile Glu Arg Asn Val Thr Met Asp Asp Phe Arg Lys
 20 25 30
 Tyr Ala Thr Lys His Leu Gly Met Asn Ala Met Val Leu Asp Asp Val
 35 40 45
 Ile Lys Ser Gln Ala Gly Tyr Leu Asn Pro Tyr Ile Leu Glu Glu Arg
 50 55 60
 Gln Leu Asn Val Thr Gln Leu Asp Val Phe Ser Arg Leu Met Met Asp
 65 70 75 80
 Arg Ile Ile Phe Leu Gly Thr Gln Ile Asp Asp Tyr Thr Ala Asn Thr
 85 90 95
 Leu Gln Ala Gln Leu Leu Tyr Leu Asp Ser Val Asp Pro Gly Lys Asp
 100 105 110
 Ile Ser Ile Tyr Ile Asn Ser Pro Gly Gly Ser Val Tyr Ala Gly Leu
 115 120 125
 Gly Ile Tyr Asp Thr Met Gln Phe Ile Ser Ser Asp Val Ala Thr Ile
 130 135 140
 Cys Thr Gly Met Ala Ala Ser Met Ala Ser Val Leu Leu Val Ala Gly
 145 150 155 160
 Ala Lys Gly Lys Arg Ser Ala Leu Pro His Ser Arg Val Met Ile His
 165 170 175
 Gln Pro Met Gly Gly Ala Gln Gly Gln Ala Ser Asp Ile Glu Ile Thr
 180 185 190
 Ala Arg Glu Ile Gln Lys Leu Lys Lys Glu Leu Tyr Thr Ile Ile Ala
 195 200 205
 Asp His Ser Gly Thr Ser Phe Asp Lys Val Trp Ala Asp Ser Asp Arg
 210 215 220
 Asp Tyr Trp Met Thr Ala Gln Glu Ala Lys Glu Tyr Gly Met Ile Asp
 225 230 235 240
 Glu Val Leu Ile Lys Lys
 245

<210> 8153
 <211> 139

<212> PRT

<213> B.fragilis

<400> 8153

Leu Lys Lys Ile Ala Met Lys His Leu Leu Ser Thr Ile Ile Phe Leu
 1 5 10 15
 Phe Ala Val Ile Leu Lys Gly Asn Ala Glu Ser Tyr Ser Phe Pro Ser
 20 25 30
 Pro Asn Glu Ile Asn Ser Val Ile Asn Leu Asp Leu Lys Gly Ile Phe
 35 40 45
 Ser Ser Thr His Thr Lys Ser Leu Pro Leu Thr Pro Val Glu Ala Ser
 50 55 60
 Leu Val Asp Asn Thr Leu Leu Asn Ile Ser Phe Val Val His Ser Gly
 65 70 75 80
 Glu Val Thr Val Arg Ile Leu Ser Glu Lys Gly Ile Leu Tyr Ser Ser
 85 90 95
 Cys Ile Asn Ser Asp Gln Gln Asn Ser Leu Ala Ile Ser Val Glu Asp
 100 105 110
 Phe Glu Arg Gly Asp Tyr Lys Leu Glu Leu Thr Thr Pro Ala Gly Gly
 115 120 125
 Tyr Val Tyr Gly Trp Phe Thr Ile Asn Trp Glu
 130 135

<210> 8154

<211> 459

<212> PRT

<213> B.fragilis

<400> 8154

Ile His Arg Met Lys Lys Phe Val Asn Phe Lys Phe Val Val Met Phe
 1 5 10 15
 Ala Leu Ala Leu Val Ala Asn Val Ala Ser Tyr Ala Gln Asp Asn Val
 20 25 30
 Ile Asp Glu Val Val Trp Val Ile Gly Asp Glu Ala Ile Leu Lys Ser
 35 40 45
 Asp Val Glu Glu Ala Arg Leu Ala Ala Leu Tyr Glu Gly Arg Lys Phe
 50 55 60
 Asp Gly Asp Pro Tyr Cys Val Ile Pro Glu Glu Leu Ala Val Gln Lys
 65 70 75 80
 Leu Tyr Met His Gln Ala Val Leu Asp Ser Ile Glu Val Pro Glu Ala
 85 90 95
 Glu Val Ile Gln Arg Val Asp Tyr Gln Ile Ser Asn Tyr Ile Gln Ala
 100 105 110
 Leu Gly Ser Arg Glu Arg Met Glu Ala Glu Phe Asn Lys Thr Ser Thr
 115 120 125
 Gln Ile Arg Glu Ala Met Arg Glu Asn Ala Arg Asp Gly Leu Ile Val
 130 135 140
 Gln Arg Met Gln Gln Lys Leu Val Gly Asp Ile Lys Val Thr Pro Ala
 145 150 155 160
 Glu Val Arg Arg Tyr Phe Lys Glu Leu Pro Gln Asp Ser Ile Pro Tyr
 165 170 175
 Val Pro Thr Gln Val Glu Val Gln Ile Ile Thr Gln Gln Pro Lys Ile
 180 185 190
 Pro Val Ala Glu Ile Glu Asp Val Lys Arg Arg Leu Arg Glu Tyr Thr
 195 200 205
 Asp Arg Ile Asn Lys Gly Glu Ser Asp Phe Ser Thr Leu Ala Leu Leu
 210 215 220
 Tyr Ser Glu Asp Arg Gly Ser Ala Ile Lys Gly Gly Glu Thr Gly Phe
 225 230 235 240

Met Gly Lys Gly Gln Met Val Pro Glu Tyr Ala Asn Val Ala Phe Asn
 245 250 255
 Leu Gln Asp Thr Lys Lys Ile Ser Lys Ile Val Glu Ser Glu Tyr Gly
 260 265 270
 Phe His Ile Ile Gln Leu Ile Glu Lys Arg Gly Asp Arg Ile Asn Thr
 275 280 285
 Arg His Ile Leu Leu Lys Pro Lys Val Ser Asp Lys Glu Leu Asp Glu
 290 295 300
 Ala Asn Ala Arg Leu Asp Ser Ile Ala Asn Asp Ile Arg Ser Asp Lys
 305 310 315 320
 Phe Thr Phe Asp Gln Ala Ala Ser Ala Leu Ser Gln Asp Lys Asp Thr
 325 330 335
 Arg Asn Ser His Gly Leu Met Gln Asn Pro Gln Asn Gln Thr Ala Lys
 340 345 350
 Phe Glu Met Gln Asp Leu Pro Gln Glu Ile Ala Lys Val Val Asp Lys
 355 360 365
 Met Asn Ile Gly Glu Ile Ser Lys Ala Phe Thr Met Val Asn Pro Lys
 370 375 380
 Asp Gly Lys Glu Val Cys Ala Ile Val Lys Leu Lys Ser Arg Ile Asn
 385 390 395 400
 Gly His Lys Ala Thr Ile Thr Asp Asp Tyr Gln Asn Leu Lys Glu Ile
 405 410 415
 Val Leu Asp Lys Arg Arg Glu Glu Ala Leu Gln Lys Trp Ile Val Glu
 420 425 430
 Lys Gln Lys His Thr Tyr Val Arg Ile Asn Pro Ala Trp Gln Arg Cys
 435 440 445
 Asp Phe Lys Tyr Pro Gly Trp Ile Lys Lys Asp
 450 455

<210> 8155
 <211> 323
 <212> PRT
 <213> B.fragilis

<400> 8155
 Asn Glu Val Val Phe Pro Ala Pro Phe Gly Pro Ser Lys Pro Thr Ile
 1 5 10 15
 Ser Pro Cys Phe Thr Leu Met Glu Thr Trp Leu Thr Thr Val Arg Leu
 20 25 30
 Pro Tyr Phe Phe Thr Lys Ser Ser Val Arg Ser Thr Ile Leu Leu Ala
 35 40 45
 Phe Phe His Ile Leu Cys Tyr Phe Ala Ala Asn Val Ala Lys Ile Ser
 50 55 60
 Arg Lys Asn Val His Leu Gln Thr Asn Ile Arg Val Met Ile Lys Ala
 65 70 75 80
 Leu Arg Thr Val Gly Arg Tyr Ile Met Leu Met Gly Arg Thr Phe Ser
 85 90 95
 Arg Pro Glu Arg Met Arg Met Phe Phe Arg Gln Tyr Ile Lys Glu Ile
 100 105 110
 Glu Gln Leu Gly Val Asn Ser Ile Gly Ile Val Leu Leu Ile Ser Phe
 115 120 125
 Phe Ile Gly Ala Val Ile Thr Ile Gln Ile Lys Leu Asn Ile Glu Ser
 130 135 140
 Pro Trp Met Pro Arg Trp Thr Val Gly Tyr Val Thr Arg Glu Ile Leu
 145 150 155 160
 Leu Leu Glu Phe Ser Ser Ser Ile Met Cys Leu Ile Leu Ala Gly Lys
 165 170 175
 Val Gly Ser Asn Ile Ala Ser Glu Leu Gly Thr Met Arg Val Thr Gln
 180 185 190

Gln Ile Asp Ala Leu Glu Ile Met Gly Val Asn Ser Ala Asn Tyr Leu
 195 200 205
 Ile Leu Pro Lys Ile Thr Ala Met Val Thr Met Ile Pro Ile Leu Val
 210 215 220
 Thr Phe Ser Ile Phe Ala Gly Ile Ile Gly Ala Phe Ala Thr Cys Trp
 225 230 235 240
 Phe Gly Gly Ile Met Thr Ala Thr Asp Leu Glu Tyr Gly Leu Gln Tyr
 245 250 255
 Met Phe Val Glu Trp Phe Val Trp Cys Gly Ile Ile Lys Ser Leu Phe
 260 265 270
 Phe Ala Phe Ile Ile Ala Ser Val Ser Ser Phe Phe Gly Tyr Thr Val
 275 280 285
 Glu Gly Gly Ser Ile Glu Val Gly Lys Ala Ser Thr Asp Ser Val Val
 290 295 300
 Ser Ser Ser Val Leu Ile Leu Phe Ala Asp Leu Val Leu Thr Lys Leu
 305 310 315 320
 Leu Met Gly

<210> 8156
 <211> 634
 <212> PRT
 <213> B.fragilis

<400> 8156
 Thr Lys Thr Val Lys Ala Lys Ser Ile Met Ser Asp Ile Ile His Leu
 1 5 10 15
 Leu Pro Asp Ser Val Ala Asn Gln Ile Ala Ala Gly Glu Val Ile Gln
 20 25 30
 Arg Pro Ala Ser Val Ile Lys Glu Leu Val Glu Asn Ala Ile Asp Ala
 35 40 45
 Glu Ala Gln Asn Ile His Val Leu Val Thr Asp Ala Gly Lys Thr Cys
 50 55 60
 Ile Gln Val Ile Asp Asp Gly Lys Gly Met Ser Glu Thr Asp Ala Arg
 65 70 75 80
 Leu Ser Phe Glu Arg His Ala Thr Ser Lys Ile Arg Glu Ala Ser Asp
 85 90 95
 Leu Phe Ala Leu Arg Thr Met Gly Phe Arg Gly Glu Ala Leu Ala Ser
 100 105 110
 Ile Ala Ala Val Ala Gln Val Glu Leu Lys Thr Arg Pro Glu Ser Glu
 115 120 125
 Glu Leu Gly Thr Lys Ile Ile Ile Ala Gly Ser Lys Val Glu Ser Gln
 130 135 140
 Glu Ala Val Ser Cys Pro Lys Gly Ser Asn Phe Ser Ile Lys Asn Leu
 145 150 155 160
 Phe Phe Asn Ile Pro Ala Arg Arg Lys Phe Leu Lys Ala Asn Ser Thr
 165 170 175
 Glu Leu Ser Asn Ile Leu Ala Glu Phe Glu Arg Ile Ala Leu Val His
 180 185 190
 Pro Glu Val Ala Phe Ser Leu Tyr Ser Asn Asp Ser Glu Leu Phe Asn
 195 200 205
 Leu Pro Ala Cys His Leu Arg Gln Arg Ile Leu Ser Val Phe Gly Lys
 210 215 220
 Lys Leu Asn Gln Gln Leu Leu Ser Val Glu Val Asn Thr Thr Met Val
 225 230 235 240
 Lys Val Ser Gly Tyr Val Ala Lys Pro Glu Thr Ala Arg Lys Lys Gly
 245 250 255
 Ala His Gln Tyr Phe Phe Val Asn Gly Arg Tyr Met Arg His Pro Tyr
 260 265 270

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Phe His Lys Ala Val Met Asp Ala Tyr Glu Gln Leu Ile Pro Ala Gly
 275 280 285
 Glu Gln Ile Ser Tyr Phe Ile Tyr Phe Glu Val Asp Pro Ala Asn Ile
 290 295 300
 Asp Val Asn Ile His Pro Thr Lys Thr Glu Ile Lys Phe Glu Asn Glu
 305 310 315 320
 Gln Ala Ile Trp Gln Ile Leu Ser Ala Ser Ile Lys Glu Ser Leu Gly
 325 330 335
 Lys Phe Asn Ala Val Pro Ser Ile Asp Phe Asp Thr Glu Asp Met Pro
 340 345 350
 Asp Ile Pro Ala Phe Glu Gln Asn Leu Pro Pro Ala Pro Pro Lys Val
 355 360 365
 His Phe Asn Ser Asp Phe Asn Pro Phe Lys Pro Ser Ser Ser Ser Gly
 370 375 380
 Gly Gly Asn Tyr Ser Arg Pro Lys Val Asp Trp Glu Asp Leu Tyr Gly
 385 390 395 400
 Gly Leu Glu Lys Ala Ser Lys Met Asn Gln Pro Phe Ser Asp Ser Asp
 405 410 415
 Pro Glu Ser Glu Glu Phe Ala Val Ile Glu Glu Glu Ser Ile Ala Thr
 420 425 430
 Ala Ala Pro Glu Thr Leu Tyr Ala Gly Glu Pro Ala Val Ile Glu Lys
 435 440 445
 Gly Thr Gln His Leu Gln Phe Lys Gly Arg Phe Ile Leu Thr Ser Val
 450 455 460
 Lys Ser Gly Leu Met Leu Ile Asp Gln His Arg Ala His Ile Arg Val
 465 470 475 480
 Leu Phe Asp Arg Tyr Arg Ala Gln Ile Gln Gln Lys Gln Gly Phe Ser
 485 490 495
 Gln Gly Val Leu Phe Pro Glu Ile Leu Gln Leu Pro Ala Ser Glu Ala
 500 505 510
 Ala Val Leu Gln Ser Ile Met Asp Asp Leu Ser Ala Val Gly Phe Asp
 515 520 525
 Leu Ser Asp Leu Gly Gly Gly Ser Tyr Ala Ile Asn Gly Val Pro Ser
 530 535 540
 Gly Ile Asp Gly Leu Asn Pro Val Asp Leu Val Arg Ser Met Leu His
 545 550 555 560
 Thr Ala Met Glu Lys Gly Asn Asp Val Lys Glu Glu Ile Gln Asp Ile
 565 570 575
 Leu Ala Leu Thr Leu Ala Arg Ala Ala Ile Val Tyr Gly Gln Val
 580 585 590
 Leu Ser Asn Glu Glu Met Val Ser Leu Val Asp Asn Leu Phe Ala Cys
 595 600 605
 Pro Ser Pro Asn Tyr Thr Pro Asp Gly Arg Val Val Leu Thr Thr Ile
 610 615 620
 Lys Glu Glu Glu Ile Asp Lys Leu Phe Arg
 625 630

<210> 8157

<211> 236

<212> PRT

<213> B.fragilis

<400> 8157

Cys Phe Leu Phe Ile Phe Val Gln Ser Lys Lys Lys Gln Thr Ile Asn
 1 5 10 15
 Thr Asp Lys Gly Tyr Met Glu Ala Lys Ala Glu Ile Leu Leu Val Asp
 20 25 30
 Asp His Ala Leu Val Leu Glu Gly Met Arg Arg Met Leu Glu Ser Val
 35 40 45

Ser Asp Val Arg Val Ala Asp Ala Val Thr Ser Gly Ala Lys Ala Ala
 50 55 60
 Glu Leu Ile Gly Glu Arg Asp Tyr Asp Ile Tyr Val Leu Asp Val Asn
 65 70 75 80
 Leu Pro Asp Ile Ser Gly Phe Asp Leu Val Asp Met Ile Arg Glu Ile
 85 90 95
 Asn Glu Ser Ala Arg Ile Ile Ile Ser Thr Met His Glu Glu Ile Trp
 100 105 110
 Ile Ile Asn Arg Leu Ile Arg Gln Lys Val Asn Ala Val Ile Leu Lys
 115 120 125
 Ser Ser Glu Ala Val Glu Phe Glu Asn Ala Val Lys Ser Val Leu Glu
 130 135 140
 Gly Asn Pro Tyr Thr Cys Pro Arg Phe Gln Ser Ile Arg Gln Lys Leu
 145 150 155 160
 Ser Leu Ser Pro Val Gln Ile His Ser Lys Asp Ile Pro Thr Lys Arg
 165 170 175
 Glu Leu Asp Val Leu Lys Ala Val Ala Arg Gly Cys Asn Thr His Glu
 180 185 190
 Val Ala Ala Glu Leu Lys Ile Ser Glu Asn Thr Val Glu Thr Phe Arg
 195 200 205
 Lys Arg Leu Ile Gln Lys Phe Cys Ala Lys Asn Ala Ile Asp Met Val
 210 215 220
 Val Lys Ala Met Ser Lys Gly Trp Ile Glu Leu Glu
 225 230 235

<210> 8158

<211> 410

<212> PRT

<213> B.fragilis

<400> 8158

Tyr Leu Ile Phe Asn Ala Met Asn Tyr Tyr Leu Tyr Ile Glu Pro Tyr
 1 5 10 15
 Thr Leu Phe Phe Arg Lys Lys Gly Glu Cys Leu Phe Tyr Asn Thr Leu
 20 25 30
 Asn Lys Lys Val Leu Lys Ile Asp Val Ser Asn Asp Met Tyr Phe Ile
 35 40 45
 Leu Asp Lys Leu Glu Thr Asp Lys Tyr Thr Ile Leu Ser Asp Glu Asn
 50 55 60
 Leu Gln Thr Gln Thr Val Ser Phe Trp Val Asn Arg Leu Arg Glu Thr
 65 70 75 80
 Phe Asn Gly Asp Ile Leu Pro Phe Ser Asp Gly Ser Val Pro Pro Ala
 85 90 95
 Ile Phe Pro Pro Phe Ile Asn Asn Gln Arg Asp Phe Glu Arg Leu Asn
 100 105 110
 Thr Tyr Glu Trp Val Glu Lys Asp Asn Gln Val Met Asn Tyr Leu Glu
 115 120 125
 Glu Ile Tyr Leu Tyr Leu Asn Gly Cys Glu Glu Glu Asp Asp Ser Ile
 130 135 140
 Trp Lys Gln Ile Pro Ser Tyr Leu Cys Ser Asp Lys Glu Met Asp Ser
 145 150 155 160
 Arg Lys Leu Leu Gln Trp Leu Asp Gly Cys Ile Asp Lys Gln Ile Ser
 165 170 175
 Gln Val Tyr Leu Leu Gly Gly Asp Val Leu Met Tyr Lys Asp Leu Asn
 180 185 190
 Glu Ile Trp Gly Met Leu Glu Gln Lys Ser Met Ser Ile Gln Leu Tyr
 195 200 205
 Tyr Arg Tyr Asp Leu Phe Thr Glu Asn His Lys Lys Leu Leu Asn Ala
 210 215 220

Thr Ile Gly Gln Leu Thr Phe Val Val Pro Met Trp Lys Phe Asp Glu
 225 230 235 240
 Glu Leu Phe Ser Ser Leu Ser Arg Thr Val Glu Gly Ile Glu Gln Asn
 245 250 255
 Lys Arg Trp Leu Phe Leu Ile Thr Ser Asp Asn Glu Tyr Glu Leu Ala
 260 265 270
 Glu Gln Leu Val Ser Lys Tyr Ser Leu Glu Ser Arg Ser Ile Arg Pro
 275 280 285
 Val Tyr Lys Glu Asp Asn Leu Ser Phe Phe Lys Asp Ala Val Tyr Leu
 290 295 300
 Glu Glu Thr Asp Ile Cys Asn Thr Cys Leu Glu Lys Arg Asp Phe Tyr
 305 310 315 320
 Val Ser Gln Lys Ile Asn Lys Asn Asp Phe Gly Arg Leu Thr Val Leu
 325 330 335
 Pro Asp Asp Lys Ile Tyr Ala Asn Val Asn His Ala Glu Ile Gly Val
 340 345 350
 Met Glu Lys Asp Thr Ile Ala Ser Val Leu Tyr Lys Glu Met Thr Glu
 355 360 365
 Gly His Ser Trp Leu Arg Ile Arg Asp Gln Lys Pro Cys Cys Asp Cys
 370 375 380
 Ile Tyr Gln Trp Leu Cys Pro Ser Pro Ser Asn Tyr Glu Leu Ala Ile
 385 390 395 400
 Gly Lys Pro Asn Leu Cys His Val Lys Pro
 405 410

<210> 8159
 <211> 539
 <212> PRT
 <213> B.fragilis

<400> 8159
 Val Ser Ala Phe Leu Leu Ile Ile His Thr Leu Phe Ile Thr Tyr Asp
 1 5 10 15
 Lys Gln Tyr Phe Val Thr Leu Arg Thr Lys Tyr Leu Ile Ser Lys Ser
 20 25 30
 Met Ser Glu Ser Lys Arg Ile Lys Thr Ala Leu Val Ser Val Tyr His
 35 40 45
 Lys Glu Gly Leu Asp Glu Ile Ile Thr Lys Leu His Glu Glu Gly Val
 50 55 60
 Glu Phe Leu Ser Thr Gly Gly Thr Arg Gln Phe Ile Glu Ser Leu Gly
 65 70 75 80
 Tyr Pro Cys Lys Ala Val Glu Asp Leu Thr Ser Tyr Pro Ser Ile Leu
 85 90 95
 Gly Gly Arg Val Lys Thr Leu His Pro Lys Ile Phe Gly Gly Ile Leu
 100 105 110
 Cys Arg Arg Gly Leu Glu Gln Asp Ile Gln Gln Ile Glu Lys Tyr Glu
 115 120 125
 Ile Pro Glu Ile Asp Leu Val Ile Val Asp Leu Tyr Pro Phe Glu Ala
 130 135 140
 Thr Val Ala Ser Gly Ala Asp Glu Ala Ala Ile Glu Lys Ile Asp
 145 150 155 160
 Ile Gly Gly Ile Ser Leu Ile Arg Ala Ala Lys Asn Phe Asn Asp
 165 170 175
 Val Ile Ile Val Ala Ser Gln Ala Gln Tyr Lys Pro Leu Leu Asp Met
 180 185 190
 Leu Met Glu His Gly Ala Thr Ser Ser Leu Glu Glu Arg Arg Trp Met
 195 200 205
 Ala Lys Glu Ala Phe Ala Val Ser Ser His Tyr Asp Ser Ala Ile Phe
 210 215 220


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Asn Tyr Phe Asp Ala Glu Glu Gly Ser Ala Phe Arg Cys Ser Ala Asn
225          230          235          240
Ser Gln Lys Thr Leu Arg Tyr Gly Glu Asn Pro His Gln Lys Gly Tyr
          245          250          255
Phe Tyr Gly Asn Leu Asp Glu Met Phe Asp Gln Ile His Gly Lys Glu
          260          265          270
Ile Ser Tyr Asn Asn Leu Leu Asp Ile Asn Ala Ala Val Asp Leu Ile
          275          280          285
Asp Glu Phe Asp Asp Val Thr Phe Ala Ile Leu Lys His Asn Asn Ala
          290          295          300
Cys Gly Leu Ala Ser Arg Pro Thr Val Leu Glu Ala Trp Lys Asp Ala
          305          310          315          320
Leu Ala Gly Asp Pro Val Ser Ala Phe Gly Gly Val Leu Ile Thr Asn
          325          330          335
Ala Val Ile Asp Lys Glu Thr Ala Glu Glu Ile Asn Lys Ile Phe Phe
          340          345          350
Glu Val Val Ile Ala Pro Asp Tyr Asp Val Asp Ala Leu Glu Ile Leu
          355          360          365
Gly Gln Lys Lys Asn Arg Ile Ile Leu Val Arg Lys Glu Ala Lys Leu
          370          375          380
Pro Arg Lys Gln Phe Arg Ser Leu Leu Asn Gly Val Leu Val Gln Asp
          385          390          395          400
Arg Asp Leu Asn Ile Glu Thr Thr Ala Asp Leu Lys Thr Val Thr Asp
          405          410          415
Lys Ala Pro Thr Pro Glu Glu Val Glu Asp Met Leu Phe Ala Asn Lys
          420          425          430
Ile Val Lys Asn Ser Lys Ser Asn Ala Ile Val Leu Ala Lys Gly Lys
          435          440          445
Gln Leu Leu Ala Ser Gly Val Gly Gln Thr Ser Arg Val Asp Ala Leu
          450          455          460
Lys Gln Ala Ile Glu Lys Ala Lys Leu Phe Gly Phe Asp Leu Gln Gly
          465          470          475          480
Ala Val Met Ala Ser Asp Ala Phe Phe Pro Phe Pro Asp Cys Val Glu
          485          490          495
Ile Ala Asp Lys Glu Gly Val Thr Ala Val Ile Gln Pro Gly Gly Ser
          500          505          510
Val Lys Asp Gln Leu Thr Phe Asp Tyr Cys Asn Glu His Gly Met Ala
          515          520          525
Met Val Thr Thr Gly Ile Arg His Phe Lys His
          530          535

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<210> 8160
 <211> 127
 <212> PRT
 <213> B.fragilis

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<400> 8160
Gln Thr Leu Thr Phe Met Asn Phe Lys Glu Ser Lys Ala Ile Tyr Leu
1          5          10          15
Gln Ile Ala Asp Arg Ile Cys Asp Glu Ile Leu Leu Gly Gln Tyr Gln
          20          25          30
Glu Glu Glu Arg Ile Pro Ser Val Arg Glu Tyr Ala Ala Met Val Glu
          35          40          45
Val Asn Ala Asn Thr Ala Met Arg Ser Phe Asp Tyr Leu Gln Ser Gln
          50          55          60
Asp Ile Ile Tyr Asn Lys Arg Gly Ile Gly Tyr Phe Val Ser Ser Gly
          65          70          75          80
Ala Lys Glu Leu Ile Phe Ser Leu Arg Arg Glu Thr Phe Leu Lys Asp
          85          90          95

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Glu	Leu	Glu	His	Val	Phe	Arg	Gln	Leu	Tyr	Thr	Leu	Gly	Val	Ser	Asp
			100					105					110		
Asp	Glu	Leu	Leu	Thr	Met	Tyr	Arg	Asn	Phe	Met	Met	Lys	Gln	Lys	
		115					120					125			

<210> 8161
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 8161

Lys	Arg	Thr	Thr	Met	Ser	Ala	Glu	Val	Gln	Glu	Ser	Gly	Lys	Lys	Lys
1				5					10					15	
Gly	Asn	Ser	Lys	Gln	Lys	Lys	Met	Thr	Val	Arg	Val	Asp	Phe	Thr	Pro
			20					25				30			
Met	Val	Asp	Met	Asn	Met	Leu	Leu	Ile	Thr	Phe	Phe	Met	Leu	Cys	Thr
		35				40						45			
Ser	Leu	Ser	Lys	Pro	Gln	Thr	Met	Glu	Ile	Ser	Met	Pro	Ser	Asn	Asp
		50				55					60				
Lys	Asn	Ile	Thr	Glu	Glu	Gln	Gln	Ser	Lys	Val	Lys	Ala	Ser	Gln	Ala
65					70					75					80
Ile	Thr	Leu	Leu	Leu	Gly	Pro	Asp	Asp	Lys	Leu	Tyr	Tyr	Tyr	Glu	Gly
				85					90					95	
Glu	Pro	Asn	Tyr	Lys	Asp	Tyr	Thr	Ser	Leu	Lys	Glu	Thr	Thr	Tyr	Lys
			100					105					110		
Pro	Asp	Gly	Leu	Arg	Gly	Ile	Leu	Leu	Lys	Lys	Asn	Ala	Thr	Ala	Val
		115				120						125			
Arg	Gln	Val	Asn	Asp	Leu	Lys	Gln	Lys	Lys	Leu	Glu	Leu	Lys	Ile	Ser
		130				135					140				
Glu	Asp	Glu	Phe	Thr	Lys	Gln	Leu	Ser	Glu	Ile	Lys	Ser	Gly	Lys	Asn
145					150					155					160
Thr	Pro	Thr	Val	Ile	Ile	Lys	Ala	Met	Asp	Asn	Ala	Ser	Tyr	Lys	Asn
				165					170					175	
Leu	Ile	Asp	Ala	Leu	Asp	Glu	Met	Gln	Ile	Cys	Asn	Ile	Gly	Lys	Tyr
		180				185							190		
Val	Ile	Thr	Asn	Ile	Ala	Glu	Ala	Asp	Glu	Phe	Leu	Val	Lys	Asn	Phe
		195				200						205			
Glu	Ser	Lys	Gly	Glu	Leu	Ser	Gln	Asn	Ile	Ala	Asp				
		210				215					220				

<210> 8162
 <211> 473
 <212> PRT
 <213> B.fragilis

<400> 8162

Phe	Lys	Ser	Ala	Asn	Ile	Arg	Leu	Tyr	Leu	Lys	Thr	Ser	Tyr	Leu	Cys
1				5					10					15	
Ser	Ser	Gln	Lys	Glu	Ala	Lys	Ala	Asn	Ile	Met	Arg	Ser	Ile	Leu	Ile
			20					25					30		
Val	Glu	Asp	Asp	Ile	Thr	Phe	Gly	Met	Met	Leu	Lys	Thr	Trp	Leu	Gly
		35					40					45			
Lys	Lys	Gly	Phe	Asn	Val	Ser	Ser	Val	Ser	Asn	Ile	Ala	Arg	Ala	Gln
		50				55					60				
Lys	His	Ile	Asp	Ala	Gln	Pro	Val	Asp	Leu	Ile	Leu	Ser	Asp	Leu	Arg
65					70					75					80
Leu	Pro	Asp	His	Asp	Gly	Ile	His	Leu	Leu	Lys	Trp	Met	Gly	Glu	Lys
				85					90					95	
Glu	Leu	His	Ile	Pro	Leu	Ile	Ile	Met	Thr	Gly	Tyr	Ala	Asp	Ile	Gln

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      100              105              110
Ser Ala Val Gln Ala Met Lys Leu Gly Ala Gln Asp Tyr Ile Ala Lys
      115              120              125
Pro Val Asn Pro Glu Glu Leu Lys Lys Met Ser Glu Ala Leu Gln
      130              135              140
Lys Lys Glu Ala Pro Leu Pro Lys Thr Pro Leu Thr Glu Lys Ser Pro
145              150              155              160
Lys Thr Lys Gln Glu Ser His Ser Tyr Leu Glu Gly Glu Ser Asp Ala
      165              170              175
Ala Lys Gln Leu Tyr Asn Tyr Val Ser Leu Val Ala Pro Thr Asn Met
      180              185              190
Ser Val Leu Ile Asn Gly Ala Ser Gly Thr Gly Lys Glu Tyr Val Ala
      195              200              205
His Arg Ile His Gln Leu Ser Lys Arg Ser Asp Lys Pro Phe Ile Ala
      210              215              220
Ile Asp Cys Gly Ser Ile Pro Lys Glu Leu Ala Ala Ser Glu Phe Phe
225              230              235              240
Gly His Ile Lys Gly Ser Phe Thr Gly Ala Leu Ser Asp Lys Thr Gly
      245              250              255
Ala Phe Val Ala Ala Asn Gly Gly Thr Ile Phe Leu Asp Glu Ile Gly
      260              265              270
Asn Leu Ser Tyr Glu Ile Gln Ile Gln Leu Leu Arg Ala Leu Gln Glu
      275              280              285
Arg Lys Ile Arg Pro Val Gly Ser Asn Ser Glu Ile Thr Val Asp Ile
      290              295              300
Arg Leu Val Ser Ala Thr Asn Glu Asn Leu Glu Gln Ala Ile Glu Lys
305              310              315              320
Gly Thr Phe Arg Glu Asp Leu Tyr His Arg Ile Asn Glu Phe Thr Leu
      325              330              335
Arg Met Pro Thr Leu Lys Glu Arg Gly Gly Asp Ile Leu Leu Phe Ala
      340              345              350
Asn Phe Phe Leu Asp Gln Ala Asn Lys Glu Leu Asp Lys Gln Leu Ile
      355              360              365
Gly Phe Asp Ala Asn Ala Ser Lys Ala Leu Leu Glu Tyr His Trp Pro
      370              375              380
Gly Asn Leu Arg Gln Met Lys Asn Ile Ile Lys Arg Ala Thr Leu Leu
385              390              395              400
Ala Gln Gly Ser Phe Ile Gly Leu Ala Glu Leu Gly Ser Glu Ile Leu
      405              410              415
Glu Thr Gln Leu Ser Thr Pro Lys Met Thr Leu Arg Asp Glu Asp Ala
      420              425              430
Glu Lys Glu His Ile Leu Glu Ala Leu Arg Gln Thr Gly Asn Asn Lys
      435              440              445
Ser Arg Ala Ala Gln Leu Leu Asp Ile Asp Arg Lys Thr Leu Tyr Asn
      450              455              460
Lys Leu Lys Leu Tyr Gly Ile Asp Leu
465              470

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<210> 8163

<211> 431

<212> PRT

<213> B.fragilis

<400> 8163

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1              5              10              15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
      20              25              30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr

```

35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 8164

<211> 288

<212> PRT

<213> B.fragilis

<400> 8164

Ala Thr Gly Ala Gly Arg Leu Ser Tyr Ile Cys Tyr Ser Thr Phe Gly
 1 5 10 15
 Glu Tyr Phe Gly Ile Gly Leu Phe Lys Ile Asn Phe Thr Asn Lys Met

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<210> 8165
<211> 513
<212> PRT
<213> B.fragilis

<400> 8165
Pro Lys Ile Tyr Phe Thr Met Ile Gly Tyr Arg Asn Leu Leu Ile Ser
1 5 10 15
Leu Phe Cys Ser Met Ala Val Ser Ala Ala Gly Gln Pro Arg Leu Val
20 25 30
Lys Ser Leu Val Pro Asp Met Pro Ser Gln Ala Ser Asp Tyr Phe Cys
35 40 45
Thr Trp Asn Leu Gln Gly Tyr Val Ala Ser Tyr Lys Ser Thr Glu Leu
50 55 60
Thr Arg Ala Ala Met Thr Glu Asp Tyr Leu Phe Gly Asp Gly Leu Tyr
65 70 75 80
Gln Asn Trp Val Asp Cys Tyr Pro Ala Ile Arg Lys Asp Leu Tyr Phe
85 90 95
Val Met Asp Asp Ser Trp Asp Ile Pro Lys Asp Val Asn Asp Ser Pro
100 105 110
Asn Pro Tyr Leu Gly Cys Val Glu Leu Ser Ser Asp Arg Phe Pro Ser
115 120 125
Phe Arg Gly Asp Ala Val Glu Arg Leu Lys Gln Leu Ser Glu Gln Ile
130 135 140
Lys Ser Lys Gly Trp Lys Gly Val Gly Gly Trp Ile Cys Ala Gln Lys

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4390

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145          150          155          160
Ala Glu Thr His Ala Ala Ile Pro Glu Glu Glu Tyr Trp Lys Gln Arg
          165          170          175
Ile Lys Ala Ala Asn Ala Ala Gly Phe Asp Tyr Trp Lys Val Asp Trp
          180          185          190
Gly Lys Glu Asp Arg Asn Gly Glu Trp Arg Arg Lys Leu Thr Ala Ile
          195          200          205
Gly Lys Arg Tyr Ala Pro His Leu Tyr Ile Glu His Ala Leu Arg Asn
          210          215          220
Glu Phe Ile Glu Phe Ser Asp Val Phe Arg Thr Tyr Asp Val Glu Asn
225          230          235          240
Ile Thr Ala Gln Pro Ile Thr Ile Arg Arg Ile Cys Asp Leu Leu Pro
          245          250          255
Tyr Lys Thr Val Glu Gly Ala Lys Gly Ile Ile Asn Cys Glu Asp Glu
          260          265          270
Pro Tyr Ile Ala Val Gly Leu Gly Cys Ala Ile Gly Val Met Arg His
          275          280          285
Pro Phe Ala Gly Thr Leu Pro Asp Gly Ala Gln Asp Phe Val Phe Pro
          290          295          300
Pro Val Gly Arg Asp Ile Lys Arg Arg Leu Asp Glu Val Val Arg Gly
305          310          315          320
Val Arg Trp His Arg Ile Ala Glu Pro Phe Ala Val Gly Tyr Gly Thr
          325          330          335
Phe Ala Ile Asp Ser Val Lys Leu Thr Asp His Trp Ile Leu Gln Glu
          340          345          350
Asn Glu Thr Trp Asn Lys Gly Arg Thr Val Gly Ala Asp Val Thr Ala
          355          360          365
Asp Ala Pro Ala Arg Val Ala Arg Asn Met Lys Leu Pro Glu Val Ser
          370          375          380
Gly Ala Pro Leu Ser Val Cys Pro Phe Val Leu Ala Ser Arg Tyr Pro
385          390          395          400
Asn Gly Ala Val Ala Val Ser Thr Ile Gly Arg Asn Val Gly Arg Glu
          405          410          415
Tyr Val Thr Glu Lys Val Ala Val Ser Ile Ser Val Asp Arg Trp Asp
          420          425          430
Ile Pro Ile Gly Leu Phe Gly Tyr Phe Lys Glu Val Thr Met Val Phe
          435          440          445
Pro Ser Pro Leu Lys Thr Gly Lys His Thr Val Phe Ala Gln Asp Leu
          450          455          460
Ala Gly Glu Asn Pro Val Asp Ile Thr Ser Asn Val Val Ile Lys Asp
465          470          475          480
Asn Arg Leu Ile Ile Pro Gly Glu Val Ile Ser Arg Val Gly Leu Met
          485          490          495
Asn Ala Ser Glu Gly Asp Cys Ser Asp Pro Gly Met Val Ile Arg Val
          500          505          510
Met

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<210> 8166

<211> 269

<212> PRT

<213> B.fragilis

<400> 8166

```

Lys Arg Asn Phe Met Lys Arg Thr Thr Tyr Ile Phe Ile Gly Ile Leu
1          5          10          15
Val Ser Val Leu Val Ile Leu Met Ala Gly Val Val Tyr Ile Ser Phe
          20          25          30
Gln Lys Ser Glu Thr Asn Ser Tyr Thr Leu Thr Leu Ser Glu Lys Ile

```

35 40 45
 Leu Arg Thr Glu Phe Ser Gly Ile Arg Ala Val Lys Val Tyr Ala Asn
 50 55 60
 Asp Thr Arg Arg Val Trp Leu Asp Glu Ala Cys Val Asn Val Val Ser
 65 70 75 80
 Ser Thr Asp Gly Lys Thr Arg Leu Leu Ser Pro Glu Ser Glu Tyr Leu
 85 90 95
 Lys Ile Ser Gln Asn Ala Asp Thr Leu Val Ile Cys Leu Asp Leu Thr
 100 105 110
 Thr Tyr Asp Leu Pro Lys Gln Lys Lys Glu Tyr Leu Ile Pro Ala Leu
 115 120 125
 Gln Ala Lys Gly Leu Gln Leu Thr Ile Glu Ala Asp Ser Asn Leu Ala
 130 135 140
 Phe Val Ala Asn Ala Ile Arg Gly Leu Arg Thr Arg Ile Asp Arg Leu
 145 150 155 160
 His Ala Asp Ser Leu Thr Thr Tyr Ile Arg Gly Gly Glu Leu Arg Leu
 165 170 175
 Asp Ser Cys Glu Ile Arg Ala Phe Cys Val Asp Gly Asp Gly Val Thr
 180 185 190
 Phe Asn Ala His Gln Ser Ile Ile Pro His Leu Tyr Leu Asp Leu Asp
 195 200 205
 Gly Val Arg Asn Trp Gly Val His Glu Ser Val Ile Gly Thr Glu His
 210 215 220
 Leu Thr Gly Ser Gly Val Tyr His Asn Asn Leu Gln Arg Gly Glu Cys
 225 230 235 240
 Lys Lys Met Ile Trp Thr Pro Lys Lys Glu Asp Ala Glu Leu Arg Leu
 245 250 255
 Thr Ile Arg Glu Lys Gly Ser Leu Ile Leu Gln Glu Glu
 260 265

<210> 8167

<211> 83

<212> PRT

<213> B.fragilis

<400> 8167

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 8168

<211> 100

<212> PRT

<213> B.fragilis

<400> 8168

Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30

Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Phe
 100

<210> 8169

<211> 283

<212> PRT

<213> B.fragilis

<400> 8169

Ile Leu Asn Asn Lys Phe Phe Asn Lys Lys Asn Phe Ile Met Glu Thr
 1 5 10 15
 Thr Gln Lys Lys Ser Thr Lys Ile Val Gly Ile Lys Asn Ala Gly Leu
 20 25 30
 Val Ile Ile Cys Cys Phe Ile Ile Ala Val Cys Ile Tyr His Phe Ile
 35 40 45
 Leu Gly Asn Pro Thr Asn Phe Met Asn Asn Asp Pro Asn Asn His Pro
 50 55 60
 Leu Pro Gly Asn Phe Met Gly Thr Ile Tyr Lys Gly Gly Val Ile Val
 65 70 75 80
 Pro Val Ile Gln Thr Leu Leu Leu Thr Val Leu Ala Leu Ser Ile Glu
 85 90 95
 Arg Tyr Phe Ala Leu Arg Ser Ala Phe Gly Arg Gly Ser Leu Val Lys
 100 105 110
 Phe Val Ser Asn Ile Lys Glu Ala Leu Ser Val Gly Asp Leu Arg Lys
 115 120 125
 Ala Gln Glu Ile Cys Asp Lys Gln Arg Gly Ser Val Ala Asn Val Val
 130 135 140
 Thr Ser Thr Leu Arg Lys Tyr Glu Glu Met Glu Asn Glu Ser Ser Leu
 145 150 155 160
 Ser Lys Asp Gln Lys Leu Leu Ala Ile Gln Lys Glu Leu Glu Glu Ala
 165 170 175
 Thr Ala Leu Glu Leu Pro Met Met Glu Gln Asn Leu Pro Ile Ile Gly
 180 185 190
 Thr Ile Thr Thr Leu Gly Thr Leu Met Gly Leu Leu Gly Thr Val Ile
 195 200 205
 Gly Met Ile Arg Ser Phe Ala Ala Leu Ala Ala Gly Gly Ser Ala Asp
 210 215 220
 Ser Met Ala Leu Ser Gln Gly Ile Ser Glu Ala Leu Ile Asn Thr Ala
 225 230 235 240
 Phe Gly Ile Leu Thr Gly Ala Leu Ala Val Ile Ser Tyr Asn Tyr Tyr
 245 250 255
 Thr Asn Lys Ile Asp Lys Leu Thr Tyr Ser Leu Asp Glu Val Gly Phe
 260 265 270
 Ser Ile Val Gln Thr Phe Ala Ala Thr His Lys
 275 280

<210> 8170

<211> 65

<212> PRT

<213> B.fragilis

<400> 8170

```

Asn Lys Ile Lys Thr Met Asn Gly Tyr Leu Pro Val Gly Arg Phe Tyr
1           5           10           15
Arg Leu Tyr Arg Ile Val Ala Arg Lys Lys Arg Glu Thr Glu Gly Tyr
20           25           30
Asp Tyr Gln Phe Asp Thr Leu Thr Asn Arg Pro Ser Pro Pro Ser Arg
35           40           45
Leu Pro Glu Gly Asp Leu Lys Phe Thr Gly Arg Glu Arg Thr Lys Glu
50           55           60
Val
65

```

<210> 8171

<211> 64

<212> PRT

<213> B.fragilis

<400> 8171

```

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
1           5           10           15
Phe Gly Asn Leu Arg Ile Lys Gly His Leu His Leu Pro Glu Ala Tyr
20           25           30
Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala
35           40           45
Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Phe Ile Ser Phe Ser
50           55           60

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<210> 8172

<211> 792

<212> PRT

<213> B.fragilis

<400> 8172

```

Leu Ile Asn Asn Arg Asp Leu Asn Arg Met Ile Arg Lys Glu Thr Val
1           5           10           15
His Ile Ile Trp Gly Thr Ile Gln Ala Gly Leu Val Met Leu Leu Leu
20           25           30
Gly Ala Cys Ser Thr Thr Lys His Leu Pro Glu Gly Glu Ile Leu Tyr
35           40           45
Thr Gly Ser Lys Thr Ile Val Glu Asn Glu Pro Gln Ala Pro Leu Thr
50           55           60
Glu Asp Ala Leu Thr Glu Leu Asp Ala Ala Leu Asp Lys Ala Pro Ser
65           70           75           80
Thr Lys Ile Leu Gly Phe Val Pro Ile Pro Phe Lys Met Trp Ala Tyr
85           90           95
Asn Ser Leu Val Arg Tyr Lys Lys Gly Phe Gly His Trp Leu Phe Asn
100          105          110
Arg Phe Ala Ala Asn Pro Pro Val Phe Ile Ser Thr Val Asn Pro Glu
115          120          125
Ile Arg Ala Lys Val Gly Thr Asn Leu Leu His Asp Tyr Gly Tyr Phe
130          135          140
Asn Gly Thr Val Arg Phe Gln Thr Val Pro Asp Lys Lys Asp Ser Leu
145          150          155          160
Lys Ala Ser Ile Arg Tyr Thr Val Asp Met Lys Asp Pro Tyr Tyr Ile
165          170          175
Asp Thr Val Tyr Tyr Thr Arg Phe Asn Pro Arg Thr Leu Arg Ile Met
180          185          190
Glu Arg Gly Arg Arg Gly Ser Leu Leu Thr Pro Gly Glu Gln Phe Asn
195          200          205

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Val Ser Asp Leu Asp Ala Glu Arg Ser Arg Ile Ser Thr Leu Leu Arg
 210 215 220
 Asn Arg Gly Tyr Phe Tyr Phe Arg Pro Asp Tyr Met Lys Tyr Gln Ala
 225 230 235 240
 Asp Thr Leu Leu Asn Pro Gly His Val Ser Leu Arg Leu Ile Pro Val
 245 250 255
 Pro Gly Leu Pro Asp Ala Ala Gln Arg Pro Tyr Tyr Val Gly Lys Thr
 260 265 270
 Ser Val Phe Leu Tyr Gly Lys Gly Gly Glu Val Pro Asn Ser Thr Leu
 275 280 285
 Glu Tyr Arg Gly Leu Asp Ile His Tyr Tyr Lys Lys Met Gln Val Arg
 290 295 300
 Pro Asn Met Leu Tyr Arg Trp Leu Asn Tyr Gln Ala Tyr Val Arg Asn
 305 310 315 320
 Asp Ser Leu Arg Asn Ser Ala His Ser Arg Leu Tyr Ser Gln Tyr Arg
 325 330 335
 Gln Thr Arg Ile Gln Glu Arg Leu Ser Gln Leu Ser Ile Phe Arg Tyr
 340 345 350
 Leu Asp Leu Gln Tyr Ile Pro Gln Asp Ser Thr Ala Thr Cys Asp Thr
 355 360 365
 Leu Asn Val Arg Leu Gln Ala Thr Phe Asp Lys Pro Tyr Asp Ala Glu
 370 375 380
 Leu Glu Phe Asn Leu Thr Thr Lys Ser Asn Asn Gln Thr Gly Pro Gly
 385 390 395 400
 Ala Ser Phe Gly Leu Thr Arg Tyr Asn Val Phe Gly Gly Gly Glu Thr
 405 410 415
 Trp Asn Val Lys Leu Lys Gly Ser Tyr Glu Trp Gln Thr Gly Gln Asn
 420 425 430
 Lys Gly Ser Ser Leu Met Asn Ser Trp Glu Met Gly Val Ser Thr Ala
 435 440 445
 Leu Thr Phe Pro Arg Val Val Phe Pro Ser Phe Gly Gly Arg Glu Tyr
 450 455 460
 Asp Phe Pro Ala Thr Thr Thr Phe Arg Leu Tyr Ile Asp Gln Leu Asn
 465 470 475 480
 Arg Ala Lys Tyr Tyr Lys Leu Leu Ala Phe Gly Gly Asn Ala Thr Tyr
 485 490 495
 Asp Phe Gln Pro Thr Arg Ile Ser Arg His Ser Leu Thr Pro Leu Arg
 500 505 510
 Val Thr Phe Asn Val Leu Gln His Thr Thr Lys Ala Phe Glu Glu Ile
 515 520 525
 Ala Asp Gln Asn Lys Ala Leu Tyr Arg Ser Leu Gln Asn Gln Phe Ile
 530 535 540
 Pro Ala Met Glu Tyr Thr Tyr Thr Phe Asp Asn Ala Ala Leu Arg Gly
 545 550 555 560
 Val Arg Asn Pro Ile Trp Trp Gln Thr Thr Phe Thr Ser Ala Gly Asn
 565 570 575
 Ile Thr Ser Gly Ile Tyr Arg Ile Phe Gly Lys Lys Phe Ser Gln Arg
 580 585 590
 Asp Lys Lys Leu Phe Gly Val Pro Phe Ala Gln Phe Leu Lys Val Asn
 595 600 605
 Ser Asp Phe Arg Tyr Thr Trp Lys Ile Asp Lys Asn Gln Ser Ile Ala
 610 615 620
 Ser Arg Val Ala Gly Gly Ile Ile Trp Ala Tyr Gly Asn Thr Asn Thr
 625 630 635 640
 Ala Pro Tyr Ser Glu Gln Phe Tyr Ile Gly Gly Ala Asn Ser Val Arg
 645 650 655
 Ala Phe Thr Ala Arg Ser Ile Gly Pro Gly Gly Phe Arg Pro Thr Lys
 660 665 670
 Thr Ser Lys Gly Leu Tyr Leu Asp Gln Thr Gly Asp Ile Arg Met Glu

675 680 685
 Ala Asn Val Glu Tyr Arg Phe Arg Ile Tyr Gly Asp Leu His Gly Ala
 690 695 700
 Val Phe Leu Asp Ala Gly Asn Val Trp Met Leu Arg Lys Asp Glu Glu
 705 710 715 720
 Ala Pro Glu Lys Gln Leu Arg Trp Lys Thr Phe Gly Lys Gln Ile Ala
 725 730 735
 Leu Gly Thr Gly Ala Gly Ile Arg Tyr Asp Leu Asp Phe Leu Ile Leu
 740 745 750
 Arg Leu Asp Cys Gly Val Pro Leu His Asp Pro Tyr Asp Thr Gly Lys
 755 760 765
 Lys Gly Tyr Tyr Asn Val Thr Gly Ser Phe Trp Lys Gly Leu Gly Leu
 770 775 780
 His Phe Ala Val Gly Tyr Pro Phe
 785 790

<210> 8173

<211> 283

<212> PRT

<213> B.fragilis

<400> 8173

Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Leu Asn Ile Val Gly
 1 5 10 15
 Asn Tyr Ile Leu Ile Asn Gly Lys Leu Gly Phe Pro Glu Leu Gly Leu
 20 25 30
 Leu Gly Ala Gly Ile Ser Thr Leu Phe Ser Arg Ile Val Met Val Leu
 35 40 45
 Val Phe Ala Phe Val Phe Phe Ser Ser Arg Arg Phe Leu Arg Tyr Lys
 50 55 60
 Leu Gly Phe Ile Arg Leu Gly Trp Ser Arg Thr Leu Phe Arg Gln Leu
 65 70 75 80
 Asn Ala Leu Gly Trp Pro Val Ala Phe Gln Met Gly Met Glu Thr Ala
 85 90 95
 Ser Phe Ser Leu Ser Thr Val Met Val Gly Trp Leu Gly Thr Ile Ala
 100 105 110
 Leu Ala Ser His Gln Val Met Leu Thr Ile Ser Gln Phe Thr Phe Met
 115 120 125
 Met Phe Tyr Gly Met Gly Ala Ala Val Ala Val Arg Val Ser Asn Phe
 130 135 140
 Lys Gly Gln Asn Asp Ile Val Asn Val Arg Arg Thr Ala Tyr Ala Gly
 145 150 155 160
 Ala His Ile Ile Leu Ala Met Gly Val Val Leu Leu Ser Ile Val Phe
 165 170 175
 Leu Phe Arg Tyr Gln Val Gly Gly Trp Phe Thr Asp Asn Thr Glu Val
 180 185 190
 Ser Ala Met Val Val Val Leu Met Val Pro Phe Leu Ala Tyr Gln Phe
 195 200 205
 Gly Asp Gly Met Gln Ile Asn Phe Ala Asn Ala Leu Arg Gly Ile Ser
 210 215 220
 Asp Val Lys Pro Met Met Leu Ile Ala Phe Ile Ala Tyr Phe Ile Ile
 225 230 235 240
 Ser Leu Pro Ala Gly Tyr Phe Phe Gly Phe Val Met Gly Trp Gly Leu
 245 250 255
 Leu Gly Val Trp Met Ala Phe Pro Phe Gly Leu Ser Ser Ala Ala Ile
 260 265 270
 Met Leu Trp Leu Arg Phe Arg Tyr Lys Thr Arg
 275 280

<210> 8174
 <211> 347
 <212> PRT
 <213> B.fragilis

<400> 8174

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Arg Ile Arg Asn Leu Phe Ile Met Gly Leu Phe Ser Phe Thr Gln Glu
1      5      10      15
Ile Ala Met Asp Leu Gly Thr Ala Asn Thr Ile Ile Ile Thr Gly Gly
20      25      30
Lys Ile Val Val Asp Glu Pro Ser Val Val Ala Leu Asp Arg Arg Thr
35      40      45
Asp Lys Met Ile Ala Val Gly Glu Lys Ala Lys Leu Met His Glu Lys
50      55      60
Thr His Glu Asn Ile Arg Thr Ile Arg Pro Leu Arg Asp Gly Val Ile
65      70      75      80
Ala Asp Phe Tyr Ala Cys Glu Gln Met Met Arg Gly Leu Ile Lys Gln
85      90      95
Val Asn Thr Arg Asn Arg Leu Phe Ser Pro Ser Leu Arg Met Val Ile
100     105     110
Gly Val Pro Ser Gly Ser Thr Glu Val Glu Leu Arg Ala Val Arg Asp
115     120     125
Ser Ala Glu His Ala Gly Gly Arg Asp Val Tyr Leu Val Phe Glu Pro
130     135     140
Met Ala Ala Ala Ile Gly Ile Gly Ile Asp Val Glu Ala Pro Glu Gly
145     150     155     160
Asn Met Ile Val Asp Ile Gly Gly Gly Ser Thr Glu Ile Ala Val Ile
165     170     175
Ser Leu Gly Gly Ile Val Ser Asn Asn Ser Ile Arg Ile Ala Gly Asp
180     185     190
Asp Leu Thr Ala Asp Ile Gln Glu Tyr Met Ser Arg Gln His Asn Val
195     200     205
Lys Val Ser Glu Arg Met Ala Glu Arg Ile Lys Ile Asn Val Gly Ala
210     215     220
Ala Leu Thr Glu Leu Gly Glu Asp Ala Pro Glu Asp Tyr Ile Val His
225     230     235     240
Gly Pro Asn Arg Ile Thr Ala Leu Pro Met Glu Val Pro Val Cys Tyr
245     250     255
Gln Glu Val Ala His Cys Leu Glu Lys Ser Ile Ser Lys Ile Glu Thr
260     265     270
Ala Ile Leu Ser Ala Leu Glu Asn Thr Pro Pro Glu Leu Tyr Ala Asp
275     280     285
Ile Val His Asn Gly Ile Tyr Leu Ala Gly Gly Gly Ala Leu Leu Arg
290     295     300
Gly Leu Asp Lys Arg Leu Thr Asp Lys Ile Asn Ile Pro Phe His Ile
305     310     315     320
Ala Glu Asp Pro Leu His Ala Val Ala Lys Gly Thr Gly Val Ala Leu
325     330     335
Lys Asn Val Asp Arg Phe Ser Phe Leu Met Arg
340     345

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<210> 8175
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 8175

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Val Ile Arg Lys Thr Ile Lys Lys Thr Thr Val Asn Thr Asn Gln Arg
1      5      10      15

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Glu Lys Tyr Phe Ser Asn Asp Val Ala Gly Val Ile Arg Thr Glu Ser
 20 25 30
 Arg Pro Val Phe Asp Phe Ile Leu Ser Ile Val Asn Glu Ala Leu Lys
 35 40 45
 Gln Pro Asn Thr Gln Ser Pro His Ile Lys Ile Thr Arg Leu Asn Ser
 50 55 60
 Gln Val Leu Ser Val Ser
 65 70

<210> 8176

<211> 798

<212> PRT

<213> B.fragilis

<400> 8176

Leu Tyr Met Lys Lys Leu Leu Cys Leu Ile Ile Leu Leu Phe Ser Phe
 1 5 10 15
 Ile Arg Ser Glu Ala Gln Ser Asp His Ile Cys Pro His Glu Lys Leu
 20 25 30
 Tyr Val His Thr Asp Arg Ala Asn Tyr Glu Arg Gly Asp Thr Val Arg
 35 40 45
 Phe Arg Ala Tyr Leu Met Asp Thr Arg His Glu Ala Thr Ala Tyr Ser
 50 55 60
 Arg Tyr Val Tyr Ala Glu Leu Leu Ala Asp Ser Gln Val Ile Ser Arg
 65 70 75 80
 Glu Met Val Lys Asp Asp His Gly Val Phe Ser Gly Tyr Leu Ser Leu
 85 90 95
 Gly Asp Thr Leu Arg Ser Gly Asn Tyr Thr Leu Arg Phe Tyr Thr Arg
 100 105 110
 Tyr Leu Ser Ser Leu Pro Ala Pro Arg Tyr Phe Tyr Arg Gln Ile Ile
 115 120 125
 Val Gly Gly Arg Pro Phe Gln Asp Tyr Arg Lys Glu Ser Val Thr Arg
 130 135 140
 Met Ala Ala Ser Tyr His Val Ser Phe Phe Pro Glu Gly Gly Arg Leu
 145 150 155 160
 Pro Ser Gly Cys Val Ser Arg Val Ala Phe Lys Ala Leu Ser Pro Asp
 165 170 175
 Gly Leu Gly Thr Asp Val Gln Gly Phe Val Val Asn Gln Arg Gly Asp
 180 185 190
 Thr Val Thr Thr Leu Arg Ser Val His Arg Gly Met Gly Phe Phe Asn
 195 200 205
 Leu Glu Pro Val Ser Gly Asp Ser Tyr Thr Ala Val Cys Arg Asn Arg
 210 215 220
 Glu Gly Met Glu Leu Arg Phe Pro Leu Pro Pro Ala Asp Pro Ser Ala
 225 230 235 240
 Val Ser Leu Arg Val Asp Val Arg Lys Asp Asp Phe Leu Val Arg Leu
 245 250 255
 Asn Ser Gly Val Ser Pro Ser Pro Gly His Ser Leu Arg Val Glu Tyr
 260 265 270
 Arg Asp Ser Ile Leu Leu His Ala Ala Phe Ser Gly Ser Arg Pro Leu
 275 280 285
 Arg Leu Pro Arg Ser Pro Leu Pro Pro Gly Val Leu Arg Phe Val Leu
 290 295 300
 Leu Asp Gly Ser Gly Val Pro Ile Ser Gly Arg Thr Ala Phe Asn Gln
 305 310 315 320
 Ser Ser Ser Val Cys Ala Asp Val Asp Phe Ser Ala Arg Leu Lys Glu
 325 330 335
 Glu Lys Gly Arg Ser Phe Trp Asp Val Ser Leu Gly Leu Arg Asp Ser
 340 345 350

Ser Gly Glu Pro Leu Gly Gly Thr Leu Ser Val Ser Val Thr Asp Asp
 355 360 365
 Arg Tyr Ala Leu Gln Asp Thr Thr Val Asn Ile Leu Ser Ser Phe Leu
 370 375 380
 Leu Ser Ser Asp Leu Gln Gly Tyr Val Glu Ala Pro Ser Phe Tyr Phe
 385 390 395 400
 Ser Gly Asp Asp Ser Arg Thr Ser Tyr Leu Leu Asp Leu Leu Met Leu
 405 410 415
 Thr Gln Gly Trp Val Lys Tyr Ser Phe Val Pro Asp Tyr Gly Ser Phe
 420 425 430
 Pro Val Glu Arg Ser Gln Cys Val Ser Gly Lys Val Val Ser Glu Tyr
 435 440 445
 Ser Glu Lys Lys Cys Ile Ala Asp Ala Val Val Thr Leu Phe Ser Phe
 450 455 460
 Asp Lys Lys Ile Met Arg Gln Thr Thr Ser Asp Ala Ser Gly Cys Phe
 465 470 475 480
 Arg Phe Asp Ser Leu Ser Phe Pro Arg Gly Thr His Phe Ile Leu Gln
 485 490 495
 Ala Arg Lys Lys Lys Gly Gly Thr Asp Val Ala Leu Leu Val Asp Arg
 500 505 510
 Asp Ser Val Pro Ser Val His Ser Ser Leu Pro Val Tyr Ala Asp Trp
 515 520 525
 Phe Arg Ala Glu Met Asp Glu Pro Val Val Ser Glu Gln Ser Gly Asn
 530 535 540
 Asp Pro Ser Pro Thr Ser Ala Asn Val Phe Gln Arg Ser Ser Thr Val
 545 550 555 560
 Pro Phe Ser Met Glu Gln Tyr Leu Asp Glu Val Val Val Ser Thr Lys
 565 570 575
 Lys Ile Glu Lys Lys Lys Arg Tyr Ala Ile Glu Ser Leu Met Ala His
 580 585 590
 Ser Asp Trp Asn Lys Thr Tyr His Val Asp Glu Met Thr Leu Ser Pro
 595 600 605
 Tyr Ser Ser Thr Lys Asp Leu Leu Ile Asn Thr Pro Gly Val Gly Trp
 610 615 620
 Ala Val Asp Ser Asn Ser Gly Asp Phe Phe Tyr Ile Thr Arg Leu Arg
 625 630 635 640
 Ala Gly Gly Ser Ser Thr Pro Pro Pro Ala Leu Leu Met Val Asp Gly
 645 650 655
 Leu Glu Thr Ser Tyr Ser Glu Leu Val Gly Ile Pro Val Ser Ile Val
 660 665 670
 Glu Ser Ile Glu Leu Val Lys Asp Ala Ala Gln Met Ala Tyr Ile Gly
 675 680 685
 Ser Lys Ala Ser Asn Gly Ala Ile Leu Ile Ser Thr Lys Ser Gly Leu
 690 695 700
 Gly Thr Val Gly Lys Lys Ala Ser Asn Phe Arg Ile Ile Arg Pro Ile
 705 710 715 720
 Gly Tyr Gln Val Lys Arg Glu Ser Tyr Ser Pro Ser Tyr Pro Val Val
 725 730 735
 Tyr Gly Ala Ile Asn Asn Gly Gly Asn Ser Phe Arg Thr Ile Tyr Trp
 740 745 750
 Ser Pro Asp Leu Leu Leu Asp Lys Ala Ala Ser His Leu Glu Phe Gly
 755 760 765
 Asn Pro Lys Gln Gly Arg Leu Thr Leu Val Val Gln Gly Ile Thr Pro
 770 775 780
 Asp Gly Lys Leu Ile Asn Leu Thr Arg Thr Leu Gly Asn Glu
 785 790 795

<210> 8177

<211> 479

<212> PRT

<213> B.fragilis

<400> 8177

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Ile Thr Met Lys Arg Phe Gln Leu Phe Leu Val Gly Ala Phe Val Ala
1      5      10      15
Ala Gly Pro Leu Phe Ala Gln Ser Ala Asp Ala Asp Trp His Ser Glu
20      25      30
Val Ala Lys Val Lys Glu Leu Ile Gln Thr Asn Pro Ala Gln Ala Ser
35      40      45
Glu Glu Ala Ala Gln Leu Leu Lys Gly Lys Asn Lys Lys Asn Thr Asp
50      55      60
Leu Leu Ile Ala Ile Gly Gln Ala Tyr Leu Glu Ala Gly Lys Ile Asn
65      70      75      80
Glu Ala Glu Ala Tyr Ala Ala Leu Gly Gln Lys Ala Asn Ser Lys Ser
85      90      95
Ala Ala Val Ser Val Leu Gln Gly Asp Ile Ala Val Ala Lys Lys Asp
100     105     110
Ala Gly Lys Ala Cys Gln Leu Tyr Glu Gln Ala Ile Tyr Phe Asp Pro
115     120     125
Asn Tyr Lys Glu Ala Tyr Leu Lys Phe Ala Asp Val Tyr Lys Gly Ala
130     135     140
Ser Pro Gln Leu Ala Ile Glu Lys Leu Glu Gln Leu Lys Asn Leu Asp
145     150     155     160
Pro Ser Cys Val Ala Ala Asp Lys Lys Leu Ala Glu Val Tyr Tyr Leu
165     170     175
Asn Asn Lys Phe Asp Lys Ala Ala Glu Ala Tyr Ala His Phe Ile Asn
180     185     190
Thr Pro Glu Ala Thr Glu Asp Asp Leu Thr Lys Tyr Ser Phe Ala Leu
195     200     205
Phe Leu Asn His Asp Phe Glu Lys Ser Leu Gln Ile Ala Leu Met Gly
210     215     220
Leu Gln Lys Asn Pro Arg Asp Ala Ala Phe Asn Arg Leu Ala Met Tyr
225     230     235     240
Asn Tyr Thr Asp Leu Lys Arg Tyr Asp Glu Ala Met Lys Ala Ala Asp
245     250     255
Ala Phe Phe Lys Glu Ser Asp Lys Ala Asp Phe Ser Tyr Leu Asp Tyr
260     265     270
Met Tyr Phe Gly His Leu Leu Asn Ala Val Lys Lys Tyr Asp Gln Ala
275     280     285
Val Glu Ala Tyr Met Lys Ala Ile Thr Leu Asp Pro Ala Lys Thr Asp
290     295     300
Leu Trp Arg Glu Val Ser Ser Ser Tyr Glu Leu Asn Asn Glu Phe Thr
305     310     315     320
Lys Ala Ile Glu Ala Tyr Lys Lys Tyr Ser Glu Ser Leu Ser Ala Asp
325     330     335
Lys Arg Thr Pro Asp Val Gln Phe Gln Ile Gly Lys Leu Tyr Tyr Glu
340     345     350
Lys Gly Thr Gln Ser Asp Thr Leu Thr Val Ser Leu Asp Glu Arg Lys
355     360     365
Ala Ala Leu Val Ser Ala Asp Ser Ile Phe Thr Glu Ile Ala Lys Val
370     375     380
Ala Pro Asp Ser Tyr Leu Gly Asn Phe Trp Arg Ala Arg Thr Asn Ser
385     390     395     400
Ala Leu Asp Pro Glu Thr Thr Gln Gly Leu Ala Lys Pro Tyr Tyr Glu
405     410     415
Glu Val Ala Ala Phe Leu Ile Asp Lys Asn Asp Pro Arg Tyr Asn Ser
420     425     430
Ala Leu Ile Glu Cys Tyr Ser Tyr Leu Gly Tyr Tyr Tyr Leu Val Ala

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435 440 445
 Asn Lys Leu Pro Glu Ser Lys Glu Tyr Trp Asn Lys Ile Leu Ala Ile
 450 455 460
 Asp Pro Ala Asn Ala Thr Ala Lys Arg Ala Leu Asp Gly Ile Lys
 465 470 475

<210> 8178
 <211> 187
 <212> PRT
 <213> B.fragilis

<400> 8178
 Gly Ala Cys Asp Cys Lys Asn Trp Ser Glu Arg Ala Lys Arg Val Gly
 1 5 10 15
 Thr Lys Glu Phe Gly Ala Met Ile Ile Asn Tyr Ile His Arg Val Gly
 20 25 30
 Trp Phe Val Gly Leu Ile Leu Leu Gln Val Leu Ile Leu Asn Asn Val
 35 40 45
 His Ile Ala Gly Val Ala Thr Pro Phe Leu Tyr Val Tyr Phe Ile Leu
 50 55 60
 Lys Phe Asn Ser Gly Thr Ser Arg Asn Glu Leu Met Val Trp Gly Phe
 65 70 75 80
 Cys Met Gly Leu Ala Ile Asp Ile Phe Ser Asn Thr Pro Gly Met Asn
 85 90 95
 Ala Ala Ala Thr Val Leu Leu Ala Phe Leu Arg Pro Leu Phe Leu Arg
 100 105 110
 Leu Phe Thr Pro Arg Asp Thr Leu Asp Ser Ile Val Pro Ser Leu Lys
 115 120 125
 Ser Met Gly Ile Ala Ser Phe Leu Lys Tyr Leu Val Val Ser Val Phe
 130 135 140
 Val His His Phe Met Leu Leu Thr Leu Glu Phe Phe Ser Phe Thr Ser
 145 150 155 160
 Ile Pro Leu Leu Leu Leu Arg Val Val Ser Ser Thr Ile Leu Thr Ile
 165 170 175
 Thr Cys Ile Met Ala Val Glu Gly Val Arg Arg
 180 185

<210> 8179
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 8179
 Arg Val Ser Phe Ile Val Val Ala Met Phe Met Phe Val Cys Asp Gly
 1 5 10 15
 Phe Asn Leu Asp Leu Asn Met Lys Leu Lys Thr Asp Asn Gln Asn Phe
 20 25 30
 Asn Lys Lys Ile Ile Met Lys Lys Leu Val Leu Val Val Ala Met Phe
 35 40 45
 Met Phe Ala Cys Gly Ser Phe Phe Thr Met Ala Gln Asp Pro Val Lys
 50 55 60
 Lys Asp Pro Lys Lys Glu Val Lys Asp Thr Ala Lys Thr Glu Pro Lys
 65 70 75 80
 Lys Glu Val Ala Asp Thr Thr Ala Ile Thr Val Ala Ala Ser Gly Ala
 85 90 95
 Phe Ala Gln Phe Ala Glu
 100

<210> 8180

<211> 65
 <212> PRT
 <213> B.fragilis

<400> 8180

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Asn Tyr Thr Glu Ser Thr Ser Lys Glu His Gln Gly Val Glu Tyr Phe
1           5           10           15
His Thr Leu Phe His Ile Phe His Asn Ile Pro His Cys Ile Pro Phe
          20           25           30
Pro Phe Ile Phe Tyr Ser Pro Thr Asn Gln Gln Ile Ser Ser His Val
          35           40           45
Phe Phe Leu Ala Gln Asp Leu Gly Asn Thr Gln Tyr Lys Cys Leu Thr
          50           55           60
Lys
65

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<210> 8181
 <211> 364
 <212> PRT
 <213> B.fragilis

<400> 8181

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Arg Ser Glu Glu Ile Gly Met Ala Lys Asp Tyr Val Leu Glu Lys Arg
1           5           10           15
Lys Tyr Val Ile Gly Gly Val Ala Leu Ala Ile Val Leu Ile Tyr Leu
          20           25           30
Leu Arg Leu Phe Ser Leu Gln Ile Ala Thr Asp Asp Tyr Lys Lys Asn
          35           40           45
Ala Asp Ser Asn Ala Phe Leu Asn Lys Ile Gln Tyr Pro Ser Arg Gly
          50           55           60
Ala Met Tyr Asp Arg Asn Asp Lys Leu Leu Val Phe Asn Gln Pro Ala
65           70           75           80
Tyr Asp Ile Thr Met Val Pro Lys Glu Val Glu Asn Leu Asp Thr Leu
          85           90           95
Asp Leu Cys Gln Thr Leu Asn Ile Thr Arg Ala Gln Phe Leu Lys Ile
          100          105          110
Met Ser Asp Met Lys Asp Arg Arg Arg Asn Pro Gly Tyr Ser Arg Tyr
          115          120          125
Thr Asn Gln Val Phe Met Ser Gln Leu Ser Ala Glu Glu Cys Gly Val
          130          135          140
Phe Gln Glu Lys Leu Phe Lys Phe His Gly Phe Tyr Ile Gln Arg Arg
145          150          155          160
Thr Ile Arg Gln Tyr Ser Tyr Asn Ser Ala Ala His Val Leu Gly Asp
          165          170          175
Ile Gly Glu Val Ser Met Lys Asp Ile Glu Asn Asp Asp Tyr Tyr Ile
          180          185          190
Arg Gly Asp Tyr Ile Gly Lys Gln Gly Ile Glu Lys Ser Tyr Glu Ser
          195          200          205
Tyr Leu Arg Gly Glu Lys Gly Val Glu Val Leu Leu Arg Asp Ala His
210          215          220
Gly Arg Ile Gln Gly His Tyr Met Asp Gly Lys Tyr Asp Lys Arg Pro
225          230          235          240
Ile Pro Gly Lys Asn Leu Lys Leu Gly Ile Asp Ile Asp Leu Gln Met
          245          250          255
Leu Gly Glu Arg Leu Leu Lys Asn Lys Ile Gly Ser Ile Val Ala Ile
          260          265          270
Glu Pro Glu Thr Gly Glu Ile Leu Cys Met Val Ser Ser Pro Asp Phe
          275          280          285
Asp Pro Arg Leu Met Ile Gly Arg Gln Arg Gly Lys Asn His Leu Met

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290 295 300
 Leu Gln Arg Asp Pro Met Lys Pro Leu Leu Asn Arg Ser Ile Met Gly
 305 310 315 320
 Val Tyr Pro Pro Gly Ser Thr Phe Lys Thr Ala Gln Ala Leu Thr Phe
 325 330 335
 Leu Gln Glu Gly Ile Ile Gln Thr Asn Thr Pro Ala Phe Pro Cys Gly
 340 345 350
 Leu His His Arg Ala Glu Gly Ser Ser Gly Gly Leu
 355 360

<210> 8182
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8182
 Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
 1 5 10 15
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
 20 25 30
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
 35 40 45
 Arg Ala Thr Gln Asp Thr Thr Thr Leu Arg Leu Pro
 50 55 60

<210> 8183
 <211> 290
 <212> PRT
 <213> B.fragilis

<400> 8183
 Ile Val Val Cys Asn Leu Tyr Val Phe Met Arg Asn Leu Leu Asn Phe
 1 5 10 15
 Leu Leu Lys Tyr Asn His Trp Phe Leu Phe Ile Leu Leu Glu Val Ile
 20 25 30
 Ser Phe Val Leu Leu Phe Arg Phe Asn His Tyr Gln His Ser Val Tyr
 35 40 45
 Phe Ser Ser Ala Asn Val Val Ala Gly Lys Val Tyr Glu Val Ser Gly
 50 55 60
 Gly Ile Thr Ser Tyr Phe His Leu Lys Ser Val Asn Glu Asp Leu Leu
 65 70 75 80
 Asp Arg Ile Met Glu Leu Glu Gln Gln Asn Arg Asn Leu Glu Asn Ala
 85 90 95
 Leu Val Lys His Leu Ser Asp Ser Thr Glu Leu Asn Ser Ile Arg Asn
 100 105 110
 Leu Ser Asp Thr Asp Tyr Glu Ile Phe Lys Ala Arg Val Ile Asn Asn
 115 120 125
 Ser Leu Asn Leu Val Asp Asn Tyr Ile Thr Leu Asn Arg Gly Ser Lys
 130 135 140
 Asp Gly Ile Arg Pro Glu Met Gly Val Val Asp Gly Asn Gly Val Val
 145 150 155 160
 Gly Ile Val Tyr Glu Thr Ser Ser His Tyr Ser Arg Val Ile Ser Val
 165 170 175
 Leu Asn Ser Lys Ser Ser Ile Ser Cys Lys Ile Val Gly Ser Glu Tyr
 180 185 190
 Phe Gly Tyr Leu Lys Trp Glu Tyr Gly Asp Ala Arg Tyr Ala Tyr Leu
 195 200 205
 Lys Asp Leu Pro Arg His Ala Glu Phe Asn Leu Gly Asp Thr Val Val
 210 215 220

Thr Ser Gly Tyr Ser Thr Val Phe Pro Glu Gly Ile Met Ile Gly Thr
 225 230 235 240
 Val Asp Asp Met Ala Asp Ser Asn Asp Gly Leu Ser Tyr Leu Leu Lys
 245 250 255
 Val Lys Leu Ala Thr Asp Phe Gly Lys Val Ser Glu Val Arg Val Ile
 260 265 270
 Ala Arg Thr Gly Gln Arg Glu Gln Lys Glu Leu Glu Gln Lys Ser Leu
 275 280 285
 Ala Gln
 290

<210> 8184
 <211> 681
 <212> PRT
 <213> B.fragilis

<400> 8184

Phe Ile Lys Cys Met Lys Val Ile Lys Tyr Leu Pro Ile Leu Ala Ile
 1 5 10 15
 Cys Cys Met Ala Thr Gly Cys Asn Ser Lys Lys Glu Ala Val Leu Thr
 20 25 30
 Ser Gly Ile Asp Leu Ala Asn Leu Asp Thr Thr Ala Leu Pro Gly Thr
 35 40 45
 Ser Phe Tyr Gln Tyr Ala Cys Gly Gly Trp Met Lys Asn His Pro Leu
 50 55 60
 Thr Asp Glu Tyr Ser Arg Phe Gly Ser Phe Asp Met Leu Ala Glu Asn
 65 70 75 80
 Asn Arg Gln Gln Leu Arg Gly Leu Ile Glu Gly Leu Ala Ala Glu Lys
 85 90 95
 His Glu Ala Gly Ser Ile Ala Gln Lys Val Gly Glu Leu Tyr Asn Ile
 100 105 110
 Ala Met Asp Ser Val Lys Leu Asn Lys Glu Gly Ala Ala Pro Ile Lys
 115 120 125
 Pro Glu Leu Glu Lys Ile Gly Ala Ile Lys Asp Lys Ala Glu Ile Tyr
 130 135 140
 Pro Leu Ile Val Glu Met Gln Lys Arg Gly Met Tyr Pro Tyr Phe Ile
 145 150 155 160
 Leu Tyr Val Ser Ala Asp Asp Met Asn Ser Asn Glu Asn Met Val His
 165 170 175
 Thr Met Gln Gly Gly Leu Gly Met Gly Glu Arg Asp Tyr Tyr Leu Glu
 180 185 190
 Asp Asp Ala Gln Thr Lys Glu Ile Arg Asp Lys Tyr Gln Gln His Val
 195 200 205
 Ser Lys Met Phe Gln Leu Ala Gly Tyr Asp Glu Ala Thr Ala Arg Lys
 210 215 220
 Ala Val Lys Ala Val Met Asn Ile Glu Thr Arg Leu Ala Gln Ser Ala
 225 230 235 240
 Arg Ser Gln Val Glu Leu Arg Asp Pro His Ala Asn Tyr Asn Lys Lys
 245 250 255
 Thr Leu Glu Glu Leu Gln Lys Glu Tyr Pro Ser Phe Ala Trp Asp Val
 260 265 270
 Phe Phe Ser Thr Ala Gly Leu Asn Asn Leu Lys Glu Val Asn Ile Gly
 275 280 285
 Gln Pro Asp Ala Leu Lys Glu Val Asn Ala Ile Ile Asp Thr Val Ser
 290 295 300
 Leu Ala Asp Gln Asn Tyr Cys Leu Gln Trp Asn Leu Ile Asn Ser Ala
 305 310 315 320
 Ala Asn Tyr Leu Ser Asp Asp Phe Ile Ala Gln Asp Phe Asp Phe Tyr
 325 330 335

Gly Arg Thr Met Ser Gly Lys Lys Glu Met Gln Pro Arg Trp Lys Arg
 340 345 350
 Ala Val Ser Thr Val Asp Gly Ser Leu Gly Glu Ala Val Gly Gln Met
 355 360 365
 Tyr Val Glu Lys Tyr Phe Pro Ala Ala Lys Glu Arg Met Val Ala
 370 375 380
 Leu Val Lys Asn Leu Gln Glu Ser Leu Gly Glu Arg Ile Lys Gly Leu
 385 390 395 400
 Ser Trp Met Gly Glu Glu Thr Lys Glu Lys Ala Leu Glu Lys Leu Ala
 405 410 415
 Thr Phe His Val Lys Ile Gly Tyr Pro Asp Lys Trp Lys Asp Tyr Ser
 420 425 430
 Ser Leu Glu Ile Lys Asp Asp Ser Tyr Trp Ala Asn Ile Glu Arg Ala
 435 440 445
 Asn Gln Trp Ser Tyr Asn Glu Met Ile Gly Lys Tyr Gly Lys Pro Val
 450 455 460
 Asp Lys Asp Glu Trp Tyr Met Thr Pro Gln Thr Val Asn Ala Tyr Tyr
 465 470 475 480
 Asn Pro Thr Thr Asn Glu Ile Cys Phe Pro Ala Gly Ile Leu Gln Tyr
 485 490 495
 Pro Phe Phe Asp Met Asn Ala Asp Asp Ala Phe Asn Tyr Gly Ala Ile
 500 505 510
 Gly Val Val Ile Gly His Glu Met Thr His Gly Phe Asp Asp Gln Gly
 515 520 525
 Arg Gln Tyr Asp Lys Asp Gly Asn Leu Lys Asp Trp Trp Thr Ala Glu
 530 535 540
 Asp Ala Lys Asn Phe Glu Ala Arg Ala Ala Val Met Ala Asn Phe Phe
 545 550 555 560
 Asp Ser Ile Glu Val Ala Pro Gly Val His Ala Asn Gly Glu Phe Thr
 565 570 575
 Leu Gly Glu Asn Ile Ala Asp His Gly Gly Leu Gln Val Ser Tyr Gln
 580 585 590
 Ala Phe Lys Lys Ala Thr Ala Ala Ala Pro Leu Lys Ile Glu Asn Gly
 595 600 605
 Phe Thr Pro Glu Gln Arg Phe Phe Leu Ser Tyr Ala Asn Val Trp Ala
 610 615 620
 Gly Asn Ile Arg Pro Glu Glu Ile Leu Lys Arg Thr Lys Thr Asp Pro
 625 630 635 640
 His Ser Leu Gly Lys Trp Arg Val Asp Gly Ala Leu Pro Gln Ile Gly
 645 650 655
 Ala Trp Tyr Glu Ala Phe Asn Ile Thr Glu Lys Asp Pro Met Tyr Leu
 660 665 670
 Pro Val Asp Lys Arg Val Ser Ile Trp
 675 680

<210> 8185

<211> 422

<212> PRT

<213> B.fragilis

<400> 8185

Ile Asn Met Leu Gln Ile Asn Arg His Ile Leu Asp Asn Gly Leu Arg
 1 5 10 15
 Leu Val His Ala Gln Asp Thr Ser Thr Gln Met Val Ala Leu Asn Ile
 20 25 30
 Leu Tyr Asn Val Gly Ala Arg Asp Glu Asn Pro Glu His Thr Gly Phe
 35 40 45
 Ala His Leu Phe Glu His Leu Met Phe Gly Gly Ser Val Asn Ile Pro
 50 55 60

Asp Tyr Asp Ala Pro Leu Gln Leu Ala Gly Gly Glu Asn Asn Ala Trp
 65 70 75 80
 Thr Asn Asn Asp Ile Thr Asn Tyr Tyr Leu Thr Val Pro Arg Gln Asn
 85 90 95
 Val Glu Thr Gly Phe Trp Leu Glu Ser Asp Arg Met Leu Ser Leu Asp
 100 105 110
 Phe Ser Glu Arg Ser Leu Glu Val Gln Arg Gly Val Val Met Glu Glu
 115 120 125
 Phe Lys Gln Arg Cys Leu Asn Gln Pro Tyr Gly Asp Val Gly His Leu
 130 135 140
 Leu Arg Pro Leu Ala Tyr Arg Val His Pro Tyr Gln Trp Pro Thr Ile
 145 150 155 160
 Gly Lys Glu Leu Ser His Ile Ala Asn Ala Thr Leu Glu Glu Val Lys
 165 170 175
 Asp Phe Phe Phe Arg Phe Tyr Ala Pro Asn Asn Ala Val Leu Ala Val
 180 185 190
 Thr Gly Asn Ile Ser Phe Glu Glu Ala Leu His Leu Thr Glu Lys Trp
 195 200 205
 Phe Gly Pro Ile Pro Arg Arg Glu Val Pro Leu Arg Gln Leu Pro Pro
 210 215 220
 Glu Pro Val Gln Thr Glu Glu Arg Arg Leu Val Val Glu Arg Asn Val
 225 230 235 240
 Pro Leu Asp Ser Leu Phe Met Ala Tyr His Met Cys Asp Arg Ala Asp
 245 250 255
 Ser Asp Tyr Tyr Ala Phe Asp Ile Leu Ser Asp Ile Leu Ser Asn Gly
 260 265 270
 Arg Ser Ser Arg Leu Asn Gln His Leu Val Gln Glu Lys Gln Leu Phe
 275 280 285
 Ser Ser Ile Asp Ala Tyr Ile Ser Gly Thr Leu Asp Ala Gly Leu Phe
 290 295 300
 His Ile Ser Gly Lys Pro Ala Ala Gly Val Ser Leu Glu Glu Ala Glu
 305 310 315 320
 Ala Ala Val Arg Glu Glu Leu Asn Glu Leu Gln Ser Ala Leu Ile Gln
 325 330 335
 Glu Gln Glu Leu Glu Lys Val Lys Asn Lys Phe Glu Ser Thr Gln Ile
 340 345 350
 Phe Gly Asn Ile Asn Tyr Leu Asn Val Ala Thr Asn Leu Ala Trp Phe
 355 360 365
 Glu Leu Asn Gly Arg Ala Glu Asp Met Glu Lys Glu Val Glu Arg Tyr
 370 375 380
 Arg Ala Val Thr Ala Asp Arg Leu Asn Ala Val Ala Gln Thr Ala Phe
 385 390 395 400
 Arg Glu Glu Asn Gly Val Val Leu Tyr Tyr Lys Ser Ser Arg Gly Glu
 405 410 415
 Lys Asp Glu Thr Tyr Ile
 420

<210> 8186

<211> 85

<212> PRT

<213> B.fragilis

<400> 8186

His Tyr His Arg His Ser Thr Ile His Gln Arg Asn Thr Lys Gln Ile
 1 5 10 15
 Gly Leu Pro Ile Leu His His Leu Phe Thr Ala Lys Ile His Lys Thr
 20 25 30
 Arg Leu Thr Glu Lys Ser Ile Ser Tyr His Asn Ser Ile Cys Leu Glu
 35 40 45

Trp Asn Asn Ala Glu Ile Leu Ser Gly Thr Ala Lys Val Ala Leu Asn
 50 55 60
 Asn Asn Ser Arg Leu Ile Ser Glu Ser Ser Pro Asp Ser Leu Gly Lys
 65 70 75 80
 Ser Lys Lys Leu Pro
 85

<210> 8187
 <211> 252
 <212> PRT
 <213> B.fragilis

<400> 8187
 Phe Lys Phe Ser Met Gly Leu Leu Asp Gly Lys Thr Ala Ile Val Thr
 1 5 10 15
 Gly Ala Ala Arg Gly Ile Gly Lys Ala Ile Ala Leu Lys Phe Ala Ser
 20 25 30
 Glu Gly Ala Asn Ile Ala Phe Thr Asp Leu Val Ile Asp Glu Asn Ala
 35 40 45
 Gln Asn Thr Ala Lys Glu Ile Glu Ala Met Gly Val Lys Ala Lys Gly
 50 55 60
 Tyr Ala Ser Asn Ala Ala Asn Phe Glu Asp Thr Ala Lys Val Val Glu
 65 70 75 80
 Glu Ile His Lys Asp Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Ala
 85 90 95
 Gly Ile Thr Arg Asp Gly Leu Met Met Arg Met Ser Glu Gln Gln Trp
 100 105 110
 Asp Met Val Ile Asn Val Asn Leu Lys Ser Ala Phe Asn Phe Val His
 115 120 125
 Ala Cys Thr Pro Ile Met Met Arg Gln Lys Ala Gly Ser Ile Ile Asn
 130 135 140
 Met Ala Ser Val Val Gly Val His Gly Asn Ala Gly Gln Ala Asn Tyr
 145 150 155 160
 Ser Ala Ser Lys Ala Gly Met Ile Gly Leu Ala Lys Ser Ile Ala Gln
 165 170 175
 Glu Leu Gly Ser Arg Gly Ile Arg Ala Asn Ala Ile Ala Pro Gly Phe
 180 185 190
 Ile Ile Thr Asp Met Thr Ala Gly Leu Ser Glu Glu Val Lys Thr Glu
 195 200 205
 Trp Ala Lys Lys Ile Pro Leu Arg Arg Gly Gly Thr Pro Glu Asp Val
 210 215 220
 Ala Asn Ile Ala Thr Phe Leu Ala Ser Asp Met Ser Ser Tyr Val Ser
 225 230 235 240
 Gly Gln Val Ile Gln Val Asp Gly Gly Met Asn Met
 245 250

<210> 8188
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 8188
 Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr

50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 8189
 <211> 462
 <212> PRT
 <213> B.fragilis

<400> 8189
 Leu Lys Glu Gly Cys Ser Arg Glu Tyr Phe Ser Phe Leu Ala Ala Ser
 1 5 10 15
 Phe Phe Ser Tyr Leu Lys Leu Lys Ala Met Lys Asn Phe Arg Val Ala
 20 25 30
 Ile Arg Arg Ser Tyr Leu Ser Val Ile Leu Leu Leu Leu Ala Leu Val
 35 40 45
 Cys Tyr Leu Leu Tyr Pro Leu Glu Ile Pro Ala Leu Ser Ser Glu Ser
 50 55 60
 Ala Ile Glu Ile Asp Arg Tyr Val His Ser Val Pro Cys Thr Val Gln
 65 70 75 80
 Met Pro Asp Thr Ala Thr Asp Phe Leu Cys Phe Leu Asp Glu Glu Leu
 85 90 95
 Lys Asn Lys Gln Ile Leu Leu Leu Gly Glu Gln Leu His Gln Asp Gly
 100 105 110
 Ala Thr Leu Gln Met Lys Thr Arg Met Val Arg Tyr Leu His Glu Lys
 115 120 125
 Leu Gly Tyr Asn Val Ile Leu Tyr Glu Thr Gly Leu Tyr Asp Met Tyr
 130 135 140
 Leu Met Asn Gln Asp Gly Arg Gln Arg Met Asn Pro Ser Lys Ala Val
 145 150 155 160
 Trp Thr Phe Trp Trp Gly Ser Asn Glu Thr Lys Ser Leu Trp Glu Tyr
 165 170 175
 Tyr Arg Ser His Pro Ser Ile Ala Leu Asp Gly Phe Asp Cys Gln Leu
 180 185 190
 Thr Asn Tyr Gly Gln Gly Arg Lys His Met Glu Ser Val Glu Lys Tyr
 195 200 205
 Leu Asn Gly Tyr Ser Ser Ser Leu Ser Asp Phe Pro Tyr Val Gln Arg
 210 215 220
 Phe Phe Leu Gln Met Ser Glu Phe Asn Gly Asn Trp Asn Tyr Phe Gly
 225 230 235 240
 Tyr Arg Leu Asp Arg Met Leu Lys Asp Ser Ile Val Gln Asp Phe Asn
 245 250 255
 Lys Leu Glu Asn Arg Ile His Glu Glu Ser Arg Tyr Ser Met Glu Asp
 260 265 270
 Gly Leu His Gln Arg Tyr Ile Ala Gly Leu Lys Leu Arg Tyr Glu Ser
 275 280 285
 Ile Trp Lys Tyr Arg Asn Val Gly Asp Leu Thr Arg Met Asn Leu Arg
 290 295 300
 Asp Ser Ile Met Ala Asp Asn Leu Thr Trp Leu Val Asp Ser Val Tyr
 305 310 315 320
 Lys Asp Gln Lys Val Ile Val Trp Cys Ala Asn Val His Val Phe Asn
 325 330 335
 Arg Gly Arg Met Gln Val Asp Ser Thr Arg Phe Thr Ser Met Gly Gln
 340 345 350
 Arg Leu Lys Ile His Phe Gly Asp Arg Met Tyr Thr Ile Ala Phe Thr
 355 360 365
 Ser Tyr Ala Arg Arg Asn Thr Asp Gly Gly Ile Arg Asp Pro Leu Ser

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      370              375              380
Thr Leu Ser Leu Glu Tyr Leu Leu His Arg Arg Lys Val Gly Phe Ala
385              390              395              400
Tyr Leu Asn Phe Asn Glu Leu Pro Val Asp Ser Arg Trp Arg Gln Ala
      405              410              415
Phe Ile Ser Gly Leu Asp Gln Gly Ala Ser Leu Ser Glu Val Trp Ser
      420              425              430
Glu Gln Met Asp Met Leu Phe Tyr Ile Asp Leu Asn Tyr Asp Val Tyr
      435              440              445
Tyr Asp Lys Thr Phe Ile Asn Lys Met Tyr Lys Trp Ala Lys
      450              455              460

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<210> 8190
 <211> 200
 <212> PRT
 <213> B.fragilis

```

<400> 8190
Tyr Phe Ile Ile Arg Val Val Glu Glu Arg Arg Met Arg Leu Ile Tyr
1              5              10              15
Lys Asn His Tyr Lys Ala Leu Phe Leu Leu Gly Leu Pro Ile Val Ile
      20              25              30
Gly Gln Val Gly Val Ile Val Leu Gly Phe Ala Asp Thr Leu Met Ile
      35              40              45
Gly His His Ser Thr Asn Glu Leu Gly Ala Ala Ser Phe Val Asn Asn
      50              55              60
Met Phe Thr Leu Ala Ile Ile Phe Ser Thr Gly Phe Ser Tyr Gly Leu
      65              70              75              80
Thr Pro Ile Val Gly Gly Phe Tyr Gly Thr Arg Arg Phe Ala Ser Ala
      85              90              95
Gly Gln Ala Leu Arg Cys Ser Leu Leu Ala Asn Leu Leu Val Gly Ile
      100             105             110
Leu Leu Thr Val Ile Met Gly Ile Leu Tyr Leu Asn Val Glu Arg Leu
      115             120             125
Gly Gln Pro Glu Glu Leu Leu Pro Leu Ile Lys Pro Tyr Tyr Leu Ile
      130             135             140
Leu Leu Ala Ser Leu Val Phe Val Leu Leu Phe Asn Gly Phe Lys Gln
      145             150             155             160
Phe Thr Asp Gly Ile Thr Asp Thr Lys Thr Ala Met Trp Ile Leu Leu
      165             170             175
Gly Gly Asn Val Leu Asn Leu Lys Ser Ala Thr Ile Ile Gln Tyr Thr
      180             185             190
Ile Lys Gly Arg Phe Met Ser Arg
      195             200

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<210> 8191
 <211> 243
 <212> PRT
 <213> B.fragilis

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<400> 8191
Tyr Val Phe Leu Cys Ile Arg Ser Gly Asp Ser Gly Arg Trp Trp Tyr
1              5              10              15
Glu Tyr Val Ile Phe Gly Met Thr Val Ile Tyr Glu Asp Asn His Ile
      20              25              30
Ile Val Val Asn Lys Thr Ala Ser Glu Ile Val Gln Gly Asp Lys Thr
      35              40              45
Gly Asp Thr Pro Leu Ser Glu Thr Val Lys Gln Tyr Leu Lys Asp Lys
      50              55              60

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Tyr Gln Lys Pro Gly Asn Val Phe Ile Gly Val Thr His Arg Leu Asp
 65 70 75 80
 Arg Pro Val Ser Gly Leu Val Ile Phe Ala Lys Thr Ser Lys Ala Leu
 85 90 95
 Ser Arg Leu Asn Glu Met Phe Lys Asn Ser Glu Val Lys Lys Thr Tyr
 100 105 110
 Trp Ala Ile Val Lys Asn Cys Pro Lys Gln Pro Glu Gly Glu Leu Val
 115 120 125
 His Tyr Leu Val Arg Asn Glu Lys Gln Asn Lys Ser Tyr Ala Tyr Asp
 130 135 140
 Lys Glu Val Pro Asn Ser Lys Lys Ala Ile Leu Asn Tyr Lys Leu Ile
 145 150 155 160
 Gly His Ser Asp His Tyr Phe Leu Leu Glu Val Asp Leu Lys Thr Gly
 165 170 175
 Arg His His Gln Ile Arg Cys Gln Leu Ala Lys Met Gly Cys Pro Ile
 180 185 190
 Lys Gly Asp Leu Lys Tyr Gly Ser Ala Arg Ser Asn Pro Asp Gly Ser
 195 200 205
 Ile Cys Leu His Ala Arg His Val Arg Phe Val His Pro Val Ser Lys
 210 215 220
 Glu Leu Ile Glu Leu Asp Ala Pro Val Pro Asp Ser Asn Leu Trp His
 225 230 235 240
 Gly Phe Gln

<210> 8192

<211> 767

<212> PRT

<213> B.fragilis

<400> 8192

Val Met Ala Ile Pro Ser Arg Phe Thr Lys Val Lys Ile Ala Ala Gly
 1 5 10 15
 Tyr Thr Leu Leu Leu Val Val Leu Leu Leu Ser Leu Leu Phe Val His
 20 25 30
 Arg Glu Met Glu Lys Leu Ser Asp Thr Asp Asp Val Gln Ser Leu Gln
 35 40 45
 Thr Asp Ser Leu Leu Leu Leu Lys Glu Lys Asp Glu Asn Thr Ile
 50 55 60
 Arg Met Leu Gln Ile Ile Asn Glu Ala Asn Glu Ser Met Ile Thr Pro
 65 70 75 80
 Val Glu Leu Asp Ser Ile Ile Ala Glu Gln Asp Thr Val Ile Thr Gln
 85 90 95
 Gln Arg Val Gln His Arg Ile Ile Thr Lys Arg Asp Ser Val Ile Thr
 100 105 110
 Lys Arg Lys Lys Lys Gly Phe Phe Arg Arg Leu Gly Glu Val Phe Ala
 115 120 125
 Pro Ser Lys Glu Asp Thr Ala Val Leu Val Asn Thr Ala Val Glu Phe
 130 135 140
 Ala Thr Asp Thr Ile Leu Glu Pro Tyr Asn Pro Ile Asp Ser Leu His
 145 150 155 160
 Gln Arg Ile Arg Thr Val Thr Lys Arg Lys Ser Arg Pro Val Val Arg
 165 170 175
 Pro Asn Tyr Asn Ala Arg Leu Arg Arg Met Asn Lys Glu Leu Thr Thr
 180 185 190
 Arg Ile Asp Ser Met Ile Thr Thr Tyr Glu Gln Val Val Thr Gln Arg
 195 200 205
 Ala Met Asp Asn Ala Ser Glu Gln Gln Glu Leu Arg Asn Arg Ser Thr
 210 215 220

Arg Thr Ile Gly Gly Ile Ala Ile Ala Ala Val Leu Leu Ser Ala Cys
 225 230 235 240
 Phe Leu Ile Met Ile Trp Arg Asp Ile Thr Arg Ser Asn Arg Tyr Arg
 245 250 255
 Lys Glu Leu Glu Glu Ala Asn Lys Arg Ala Glu Ala Leu Leu Glu Ala
 260 265 270
 Arg Glu Lys Leu Met Leu Ala Ile Thr His Asp Phe Lys Ala Pro Leu
 275 280 285
 Gly Ser Ile Ile Gly Tyr Thr Asp Leu Leu Thr Gly Leu Thr Thr Asp
 290 295 300
 Lys Arg Gln Arg Phe Tyr Leu Asp Asn Met Lys Ser Ser Ser Gln His
 305 310 315 320
 Leu Leu Lys Leu Val Ser Asp Leu Leu Asp Phe His Arg Leu Asp Leu
 325 330 335
 Asn Lys Ala Glu Val Asn Arg Val Thr Phe Asn Pro Ala Gln Leu Phe
 340 345 350
 Glu Glu Ile Arg Ile Ser Phe Lys Pro Leu Thr Asp Ala Lys His Leu
 355 360 365
 Thr Leu Ser Cys Ser Ile Asp Ala Glu Leu Asp Gly Arg Phe Ile Ser
 370 375 380
 Asp Pro Leu Arg Ile Arg Gln Ile Val Asn Asn Leu Leu Ser Asn Ala
 385 390 395 400
 Val Lys Phe Thr Ala Lys Gly Ser Ile Ala Leu Asn Ile Thr Tyr His
 405 410 415
 Ser Ser Ser Val Arg Ile Glu Val Val Asp Thr Gly Lys Gly Met Ala
 420 425 430
 Pro Gly Asp Arg Glu Lys Ile Phe Gln Glu Phe Thr Arg Leu Pro Gly
 435 440 445
 Ala Gln Gly Glu Glu Gly Phe Gly Leu Gly Leu Ser Ile Val His Lys
 450 455 460
 Leu Val Thr Leu Leu Glu Gly Ser Ile Ser Val Gln Ser Thr Leu Gly
 465 470 475 480
 Glu Gly Ser Arg Phe Ile Val Ile Leu Pro Leu Tyr Pro Val Gly Pro
 485 490 495
 Val Thr Gly Glu Lys Arg Glu Gly Asn Val Ser Ser Val Ser Thr Thr
 500 505 510
 Asp Gln Ala Gly Glu Asp Gly Val Met Ala Ser Pro Lys Leu Asn Arg
 515 520 525
 Val Leu Leu Ile Asp Asp Asp Arg Ile Gln Leu Ala Leu Thr Ala Ala
 530 535 540
 Met Leu Glu Gln Gln Gly Ile Gln Ala Val Cys Cys Gln Gln Pro Asp
 545 550 555 560
 Glu Leu Ile Glu Gln Leu Arg Thr Ala Thr Phe Asp Val Leu Leu Thr
 565 570 575
 Asp Val Gln Met Pro Ala Ile Asn Gly Phe Asp Leu Leu Lys Leu Leu
 580 585 590
 Arg Ala Ser Asn Ile Pro Gln Ala Arg Thr Ile Pro Val Ile Ala Val
 595 600 605
 Thr Ala Arg Ser Glu Met Asn Glu Gln Asp Phe Gln Glu His Gly Phe
 610 615 620
 Ala Gly Cys Leu His Lys Pro Phe Thr Val Lys Glu Leu Leu Thr Ile
 625 630 635 640
 Ile Ser Gly Glu Glu Met Thr Gly Ser Ser Ala Glu Leu Thr Pro Asp
 645 650 655
 Ser Leu Asn Phe Arg Ala Leu Thr Ala Phe Ser Glu Asp Asp Pro Glu
 660 665 670
 Ala Ala Ser Thr Ile Ile Gln Thr Phe Ile Glu Glu Thr Glu Lys Asn
 675 680 685
 Arg Asn Arg Met Glu Ser Ala Ile Arg Ala Thr Asp Val Asp Gly Ile

690		695		700
Ala Gly Met Ala His	Lys Leu Leu Pro Leu Phe Thr Leu Leu Gly Ala			
705	710		715	720
Ser Glu Ala Leu Pro	Leu Leu Leu Trp Leu Glu Gln Arg Arg Gly Glu			
	725		730	735
Ala Val Ser Asp Glu Met Ile Gln Lys Ala Asn Glu Ala Leu Arg Gln				
	740		745	750
Val Asp Ile Val Met Ala Glu Ala Arg Arg Tyr Ala Ala Gly Asp				
	755		760	765

<210> 8193
 <211> 319
 <212> PRT
 <213> B.fragilis

<400> 8193

Thr Thr Val Ile Met Thr Lys Lys Gln Phe Trp Leu Ile Gly Ala Trp	
1	5 10 15
Ser Leu Ile Ala Leu Ser Ala Cys Ser Ser Lys Pro Lys Asp Gly Leu	
	20 25 30
Thr Asp Thr Tyr Thr Ser Gly Val Ile Ala Ile Thr Ala Asp Glu Ser	
	35 40 45
Phe Gln Pro Ile Val Gln Glu Ile Asp Val Phe Glu Gly Leu Phe	
	50 55 60
Pro Leu Ala Gly Ile Val Pro Arg Tyr Thr Thr Glu Val Asp Ala Ile	
65	70 75 80
Asn Gln Leu Leu Lys Asp Ser Val Arg Leu Ala Ile Thr Thr Arg Thr	
	85 90 95
Leu Thr Pro Glu Glu Met Asn Ser Phe His Ser Arg Lys Phe Phe Pro	
	100 105 110
Arg Glu Ile Lys Leu Ala Thr Asp Gly Leu Ala Leu Ile Val Asn Arg	
	115 120 125
Gln Asn Ala Asp Ser Leu Ile Ser Val Arg Asp Ile Arg Arg Ile Leu	
	130 135 140
Thr Gly Gln Val Gln Lys Trp Lys Glu Leu Tyr Pro Ala Ser Gly Leu	
145	150 155 160
Gly Asp Ile Gln Leu Val Phe Asp Asn Lys Asn Ser Ser Thr Val Arg	
	165 170 175
Phe Ala Val Asp Ser Ile Cys Lys Gly Ala Pro Leu Ser Asp Lys Asp	
	180 185 190
Val Lys Ala Leu Lys Thr Asn Gln Gln Val Ile Asp Tyr Val Ala His	
	195 200 205
Thr Pro Asp Ala Ile Gly Val Ile Gly Val Asn Trp Leu Gly Asn Arg	
	210 215 220
Ser Asp Thr Thr Asn Leu Ser Phe Arg Asp Glu Ile Arg Val Met Ser	
225	230 235 240
Val Ser Ala Asp Asp Val Ala Thr Val Glu Asn Ser Tyr Lys Pro Tyr	
	245 250 255
Gln Ala Tyr Leu Tyr Tyr Gly Asn Tyr Pro Leu Ala Arg Pro Ile Tyr	
	260 265 270
Val Leu Leu Asn Asp Pro Arg Asn Ala Leu Pro Trp Gly Phe Ala Ser	
	275 280 285
Phe Leu Thr Ser Asp Arg Gly Gln Arg Ile Ile Leu Lys Ser Gly Leu	
	290 295 300
Val Pro Ala Thr Gln Pro Val Arg Ile Val Asp Val Lys Asp Glu	
305	310 315

<210> 8194
 <211> 205

<212> PRT

<213> B.fragilis

<400> 8194

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Ile Leu Thr Ile Met Gly Arg Ala Lys Ile Lys Lys Lys Ser Thr Phe
1           5           10           15
Ile Asp Met Thr Ala Met Ser Asp Val Thr Val Leu Leu Leu Thr Phe
           20           25           30
Phe Met Leu Thr Ser Thr Phe Val Lys Lys Glu Pro Val Gln Val Thr
           35           40           45
Thr Pro Ala Ser Val Ser Glu Ile Lys Ile Pro Glu Lys Asn Ile Leu
           50           55           60
Gln Ile Leu Val Asp Pro Asn Gly Lys Ile Phe Met Ser Met Asp Lys
65           70           75           80
Gln Ser Asp Leu Lys Ala Val Leu Glu Ser Met Gly Gln Glu Tyr Gly
           85           90           95
Val Thr Phe Thr Pro Glu Gln Glu Lys Lys Phe Met Leu Ala Ser Thr
           100          105          110
Phe Gly Val Pro Met Lys Asn Met Lys Thr Tyr Leu Asp Leu Pro Thr
           115          120          125
Asp Lys Gln Asp Ala Val Leu Lys Asn Glu Gly Ile Pro Cys Asp Ser
           130          135          140
Leu Asp Asn Gln Phe Lys Ser Trp Val Arg Asn Ala Arg Ala Val Asn
145          150          155          160
Ala Asp Leu Arg Ile Ala Ile Lys Ala Asp Ala Asp Thr Pro Tyr Ser
           165          170          175
Val Ile Lys Asn Val Met Asn Ser Leu Gln Asp Leu Arg Glu Asn Arg
           180          185          190
Tyr Asn Leu Ile Thr Ser Leu Lys Thr Thr Ser Glu Asn
           195          200          205

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<210> 8195

<211> 274

<212> PRT

<213> B.fragilis

<400> 8195

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Lys Ser Lys Met Ala Lys Ile Asp Leu Thr Ser Phe Glu Trp Cys Glu
1           5           10           15
Leu Ile Phe Lys Gly Lys Asn Lys Ala Tyr Gly Ala Tyr Lys Met Arg
           20           25           30
Ala Asp Ser Pro Lys Arg His Asn Val Ala Met Val Ile Val Leu Ile
           35           40           45
Ile Ala Leu Val Gly Phe Ser Leu Pro Thr Leu Ile Lys Met Ala Thr
           50           55           60
Pro Lys Gln Lys Glu Val Met Thr Glu Val Thr Thr Leu Ser Gln Leu
65           70           75           80
Glu Glu Pro Glu Val Lys Gln Glu Glu Met Lys Arg Val Glu Pro Val
           85           90           95
Ala Pro Pro Pro Pro Ala Leu Lys Ser Ser Ile Lys Phe Thr Ala Pro
           100          105          110
Val Ile Lys Lys Asp Glu Glu Val His Glu Asp Asp Glu Ile Lys Ser
           115          120          125
Gln Glu Glu Leu Thr Gln Thr Lys Val Ala Ile Ser Ile Ala Asp Val
           130          135          140
Lys Gly Asn Asp Glu Ala Asn Gly Lys Asp Ile Ala Asp Leu Lys Gln
145          150          155          160
Val Val Thr Gln Ala Glu Pro Ala Glu Glu Gln Val Phe Asp Met Val
           165          170          175

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Glu Gln Met Pro Thr Phe Pro Gly Gly Thr Thr Glu Leu Met Lys Tyr
 180 185 190
 Ile Gly Glu His Leu Lys Tyr Pro Pro Ile Ala Ala Glu Asn Gly Thr
 195 200 205
 Gln Gly Lys Val Ile Cys Arg Phe Val Ile Gly Lys Asp Gly Gln Val
 210 215 220
 Arg Asp Val Thr Ile Ala Arg Ser Leu Asp Pro Tyr Cys Asp Lys Glu
 225 230 235 240
 Ala Ile Arg Val Ile Lys Ser Met Pro Lys Trp Ile Pro Gly Lys Gln
 245 250 255
 Asn Gly Lys Ala Val Ala Val Asn Phe Thr Val Pro Ile Val Phe Lys
 260 265 270
 Leu Gln

<210> 8196

<211> 300

<212> PRT

<213> B.fragilis

<400> 8196

Met Gly Lys Ile Glu Ile Arg Asn Leu Cys Phe Arg Tyr Gly Lys Gln
 1 5 10 15
 Met Val Leu Asn Asn Leu Asn Leu Asp Ile Pro Glu Asn Ala Leu Tyr
 20 25 30
 Gly Tyr Leu Gly Asn Asn Gly Ser Gly Lys Thr Thr Thr Ile Gln Val
 35 40 45
 Leu Leu Gly Leu Ala Arg Pro Val Lys Gly Glu Val Leu Tyr Asp Gly
 50 55 60
 Gln Pro Phe Arg Asp Gln Arg Glu Lys Gln Leu Arg Lys Ile Gly Leu
 65 70 75 80
 Cys Pro Gly Glu Pro Phe Tyr Tyr Asp Asn Leu Thr Gly Tyr Glu His
 85 90 95
 Leu Ala Tyr Leu Asp His Ile Tyr His Cys Gly Arg Thr Ala Ile Asn
 100 105 110
 Lys Val Leu Ala Ile Thr Gly Ile Glu Asn Ala Arg Asn Lys Lys Leu
 115 120 125
 Arg His Tyr Ser Thr Gly Met Ile His Arg Leu Gly Met Ala Met Ala
 130 135 140
 Leu Leu His Asp Pro Asp Ile Leu Phe Leu Asp Glu Pro Leu Asn Gly
 145 150 155 160
 Leu Asp Pro Glu Gly Ile His Ser Ile Arg Glu Leu Leu Leu Gln Leu
 165 170 175
 His Gln Glu Gly Lys Thr Val Phe Leu Ser Ser His Leu Leu Asp Glu
 180 185 190
 Val Glu Lys Thr Cys Thr His Val Gly Ile Leu Gln His Gly Cys Leu
 195 200 205
 Leu Tyr Gln Gly Asp Leu Ser Glu Leu Leu Asn Ser Ile Glu Lys Arg
 210 215 220
 Ile His Ile Arg Leu Asp Lys Val Asp Leu Leu His Ser Val Cys Lys
 225 230 235 240
 Glu Val Gln Ile Asp Ser Arg Ile Lys Ser Glu Ser Ile Leu Glu Val
 245 250 255
 Ile Leu Ser Asn Asp Thr Thr Tyr Asp Arg Leu Ile Glu Leu Leu Gly
 260 265 270
 Gln Gly Gly Tyr His Ile Ser Ala Ile Gln Pro Leu Glu Asn Thr Leu
 275 280 285
 Glu Ser Val Tyr Leu Lys Leu Thr Ser Gln Thr Lys
 290 295 300

<210> 8197
 <211> 275
 <212> PRT
 <213> B.fragilis

<400> 8197

```

Thr Asn Arg Ile Met Ile Arg Asp Thr Phe Phe Ser Gln Thr Arg Phe
1      5      10      15
Val Asn Leu Cys Arg Lys Glu Met Val Glu Asn Trp Lys Ser Asn Leu
      20      25      30
Leu Arg Val Ala Leu Met Tyr Gly Ala Met Ala Val Ile Met Leu Trp
      35      40      45
Ser Gly Tyr Leu Ser Tyr Arg Ala Val Gly Gln Asp Thr Asp Ser Thr
      50      55      60
Trp Glu Phe Asn Leu Val Ile Phe Met Trp Gly Leu Cys Val Phe Gly
      65      70      75      80
Cys Leu Ser Ala Ser Phe Thr Met Glu Arg Met Lys Ser Lys Thr Gly
      85      90      95
Arg Leu Ser Val Leu Met Thr Pro Ala Thr Ser Phe Glu Lys Tyr Phe
      100     105     110
Ser Arg Trp Leu Val Phe Thr Val Phe Leu Ile Val Phe Leu Ile
      115     120     125
Thr Tyr Lys Leu Ala Asp Tyr Thr Lys Val Leu Val Tyr Ser Leu Val
      130     135     140
Tyr Pro Glu Asn Asn Ala Ile Ala Ile Thr Pro Leu Ser His Leu Phe
      145     150     155     160
Gly Glu Asn Thr Asp Tyr Tyr Thr Val Phe Lys His Thr His Thr Phe
      165     170     175
Val Leu Met Ile Ala Ser Tyr Phe Phe Cys Gln Ser Cys Phe Val Leu
      180     185     190
Gly Ser Ser Val Trp Pro Lys Asn Ser Phe Ile Lys Thr Phe Ser Ala
      195     200     205
Gly Met Ile Ile Phe Ile Ala Tyr Val Leu Ile Val Val Gly Phe Ala
      210     215     220
Lys Leu Ile Trp Pro Asp Gln Ile Ser Tyr Asn Pro Asp Met Ser Glu
      225     230     235     240
Glu Thr Ala Phe Ala Cys Leu Ser Ala Ile Ala Val Leu Phe Thr Leu
      245     250     255
Thr Asn Trp Thr Leu Ala Tyr Phe Arg Phe Lys Glu Ser Glu Ile Ile
      260     265     270
Asn Arg Met
      275

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<210> 8198
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 8198

```

Met Lys Met Ile Thr Val Glu Asn Leu Ser Phe Leu Tyr Arg Lys Ser
1      5      10      15
Lys Arg Ala Val Leu His Asp Phe Ser Leu Ser Leu Glu Lys Gly Arg
      20      25      30
Val Tyr Gly Leu Leu Gly Lys Asn Gly Ala Gly Lys Ser Thr Leu Leu
      35      40      45
Tyr Leu Met Ser Gly Leu Leu Thr Pro Lys Ser Gly Lys Val Val Tyr
      50      55      60
His Asp Val Asp Val Arg Arg Arg Leu Pro Ile Thr Leu Gln Asp Met

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65              70              75              80
Phe Leu Val Pro Glu Glu Phe Asp Leu Pro Pro Val Ser Leu Ile Ser
      85              90              95
Tyr Ile Glu Leu Asn Ser Pro Phe Tyr Pro Arg Phe Ser Lys Glu Asp
      100             105             110
Met Val Lys Tyr Leu His Tyr Phe Glu Met Asp Ile Asn Ile Asp Leu
      115             120             125
Gly Ala Leu Ser Met Gly Gln Lys Lys Lys Val Phe Met Ser Phe Ala
      130             135             140
Leu Ala Thr Asn Thr Ser Leu Leu Leu Met Asp Glu Pro Thr Asn Gly
      145             150             155             160
Leu Asp Ile Pro Gly Lys Ser Gln Phe Arg Lys Phe Ile Ala Ser Gly
      165             170             175
Met Thr Asp Asp Lys Thr Ile Leu Ile Ser Thr His Gln Val Arg Asp
      180             185             190
Ile Asp Lys Val Leu Asp His Val Leu Ile Met Asp Asn Ser Arg Val
      195             200             205
Leu Leu Asn Glu Ser Thr Met Ser Ile Cys Asp Lys Leu Phe Phe Thr
      210             215             220
Glu Ser Glu Asn Arg Glu Leu Leu Gln Ser Ser Leu Phe Ser Thr Pro
      225             230             235             240
Ser Ile Gln Gly Asn Phe Leu Leu Leu Pro Asn Glu Ser Gly Glu Asp
      245             250             255
Ser Glu Ile Asn Leu Glu Leu Leu Phe Asn Ala Thr Leu Ala Val Pro
      260             265             270
Glu Arg Ile Ser Ala Leu Phe His Ser Lys Gln Ile Glu Leu
      275             280             285

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<210> 8199

<211> 653

<212> PRT

<213> B.fragilis

<400> 8199

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Lys Glu Val Ile Ser Val Glu Gly Leu Thr Val Glu Phe Asn Ala Thr
1      5      10      15
Pro Leu Phe Glu Asp Val Ser Tyr Val Ile Asn Lys Lys Asp Arg Ile
      20      25      30
Ala Leu Val Gly Lys Asn Gly Ala Gly Lys Ser Thr Met Leu Lys Ile
      35      40      45
Leu Ala Gly Leu Gln Ser Pro Thr Arg Gly Val Ile Ala Ile Pro Arg
      50      55      60
Asp Val Thr Ile Gly Tyr Leu Pro Gln Val Met Ile Leu Ala Asp Asn
65      70      75      80
His Thr Val Met Glu Glu Ala Glu Leu Ala Phe Glu His Ile Phe Glu
      85      90      95
Leu Gln Ala Asp Leu Glu Arg Met Asn Gln Glu Leu Ala Asp Arg Thr
      100     105     110
Asp Tyr Asp Ser Glu Glu Tyr His Lys Leu Ile Asp Arg Phe Thr His
      115     120     125
Glu Asn Asp Arg Phe Leu Met Met Gly Gly Thr Asn Phe His Ala Glu
      130     135     140
Ile Glu Arg Thr Leu Ile Gly Leu Gly Phe Ser Arg Glu Asp Phe Asn
      145     150     155     160
Arg Pro Thr Ser Glu Phe Ser Gly Gly Trp Arg Met Arg Ile Glu Leu
      165     170     175
Ala Lys Leu Leu Leu Arg Lys Pro Asp Val Leu Leu Leu Asp Glu Pro
      180     185     190
Thr Asn His Leu Asp Ile Glu Ser Ile Gln Trp Leu Glu Thr Phe Leu

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195	200	205
Ser Thr Arg Ala Asn Ala Val Val Leu Val Ser His Asp Arg Ala Phe		
210	215	220
Leu Asn Asn Val Thr Thr Arg Thr Ile Glu Ile Thr Cys Gly Gln Ile		
225	230	235
Tyr Asp Tyr Lys Val Lys Tyr Asp Glu Tyr Ile Val Leu Arg Gln Glu		
245	250	255
Arg Arg Glu Gln Gln Leu Arg Ala Tyr Glu Asn Gln Gln Lys Gln Ile		
260	265	270
Glu Asp Thr Glu Ala Phe Ile Glu Arg Phe Arg Tyr Lys Ala Thr Lys		
275	280	285
Ala Val Gln Val Gln Ser Arg Met Lys Gln Leu Glu Lys Ile Glu Arg		
290	295	300
Ile Glu Val Asp Glu Val Asp Asn Ser Ala Leu Arg Leu Lys Phe Val		
305	310	315
Cys Ser Ser Arg Ser Gly Asn Tyr Pro Val Ile Cys Glu Asp Val Lys		
325	330	335
Lys Ala Tyr Gly Ala His Val Val Phe His Asp Val Asn Leu Thr Ile		
340	345	350
Asn Arg Gly Glu Lys Val Ala Phe Val Gly Lys Asn Gly Glu Gly Lys		
355	360	365
Ser Thr Leu Val Lys Cys Ile Met Ser Glu Ile Asp Tyr Glu Gly Lys		
370	375	380
Leu Thr Leu Gly His Asn Val Gln Ile Gly Tyr Phe Ala Gln Asn Gln		
385	390	395
Ala Gln Met Leu Asp Glu Asn Leu Thr Val Phe Asp Thr Ile Asp Arg		
405	410	415
Val Ala Val Gly Asp Ile Arg Leu Lys Ile Arg Asp Ile Leu Gly Ala		
420	425	430
Phe Met Phe Gly Gly Glu Ala Ser Asp Lys Lys Val Lys Val Leu Ser		
435	440	445
Gly Gly Glu Arg Thr Arg Leu Ala Met Ile Lys Leu Leu Leu Glu Pro		
450	455	460
Val Asn Phe Leu Ile Leu Asp Glu Pro Thr Asn His Leu Asp Met Arg		
465	470	475
Ser Lys Asp Val Leu Lys Glu Ala Ile Arg Glu Phe Asp Gly Thr Val		
485	490	495
Ile Ile Val Ser His Asp Arg Asp Phe Leu Asp Gly Leu Ala Thr Lys		
500	505	510
Val Tyr Glu Phe Gly Gly Gly Val Lys Glu His Leu Gly Gly Ile		
515	520	525
Tyr Asp Phe Leu Gln Lys Lys Lys Ile Glu Asn Leu Asn Glu Leu Gln		
530	535	540
Lys Ala Asn Pro Ser Ser Ala Ser Pro Ala Asn Gly Lys Lys Glu Glu		
545	550	555
Gly Ala Glu Glu Gly Ile Ser Glu Asn Lys Leu Ser Tyr Glu Ala Gln		
565	570	575
Lys Glu Leu Asn Lys Lys Ile Lys Lys Leu Glu Arg Leu Val Ala Asp		
580	585	590
Cys Glu Ala Ala Ile Glu Gln Thr Glu Ser Ala Ile Ala Ile Leu Glu		
595	600	605
Glu Lys Met Ala Thr Pro Asp Gly Ala Ser Asp Met Ser Leu Tyr Glu		
610	615	620
Gln His Gln Lys Leu Lys Gln Gln Leu Asp His Thr Val Glu Glu Trp		
625	630	635
Glu Arg Val Ser Met Glu Leu Glu Glu Met Asn Glu Lys		
645	650	

<210> 8200

<211> 199
 <212> PRT
 <213> B.fragilis

<400> 8200

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Pro Met Thr Val Ser Lys Thr Lys Ala Lys Leu Val Asp Val Ala Arg
1          5          10          15
Gln Leu Phe Ala Lys Met Gly Val Glu Asn Thr Thr Met Asn Asp Ile
          20          25          30
Ala Leu Ala Ser Lys Lys Gly Arg Arg Thr Leu Tyr Thr Tyr Phe Lys
          35          40          45
Ser Lys Asp Glu Ile Tyr Leu Ala Val Val Glu Ser Glu Leu Asp Ile
          50          55          60
Leu Ser Asp Met Met Lys Arg Val Ala Asp Lys Asp Ile Ser Pro Asp
65          70          75          80
Lys Lys Ile Ile Glu Met Ile Tyr Thr Arg Leu Asp Ala Val Lys Glu
          85          90          95
Val Val Tyr Arg Asn Gly Thr Leu Arg Ala Asn Phe Phe Arg Asp Ile
          100          105          110
Trp Arg Val Glu Lys Val Arg Lys Arg Phe Asp Ala Lys Glu Met Gln
          115          120          125
Leu Phe Lys Ser Val Leu Lys Glu Gly Gln Asp Lys Gly Val Phe His
          130          135          140
Val Asp Asp Val Glu Met Thr Ala Ala Leu Val His Tyr Cys Val Lys
145          150          155          160
Gly Ile Glu Val Pro Tyr Ile Arg Gly His Ile Gly Ala Asn Leu Asp
          165          170          175
Met Glu Thr Arg Lys Arg Tyr Val Ala Asn Ile Val Phe Gly Ala Leu
          180          185          190
His Arg Thr Glu Ile Asn Gln
          195

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<210> 8201
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 8201

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Leu Leu Phe Leu Ser Arg Lys Ser Lys Arg Glu Phe Ile Asn Lys Asn
1          5          10          15
Arg Thr Met Arg Thr Ser Val Lys Phe Ile Leu Met Phe Val Leu Leu
          20          25          30
Met Leu Ser Phe Ser Ile Ser Gly Asn Ala Leu Asn Ile Thr Glu Cys
          35          40          45
Ser His Lys Ser Val Asn Ser Cys Gln Val Ser Ala Ser Ser Leu Asp
          50          55          60
Thr Asn Tyr Ser Tyr Arg Tyr Gly Ser Asp Ile Thr Gly Phe Asp Lys
65          70          75          80
Ser Gln Thr Leu Ser Val Ser Asp Val Glu Leu Gly Phe Lys Pro Val
          85          90          95
Ser Glu Thr Tyr Ser Ser Asn Asn Leu Arg Leu Arg Arg Ile Leu Glu
          100          105          110
Asp Ser Asp Leu Phe Lys Asp Thr Met Arg Lys Trp Cys Leu Val Arg
          115          120          125
Glu Asn Leu Leu Val Leu Asp Gln Ser Lys Ser Tyr Tyr Ser Asp Lys
          130          135          140
Asp Pro His Tyr Ala Ser Ile Ser Cys His Tyr Tyr Ile Phe Ala Leu
145          150          155          160
Arg Arg Ile Leu Ile

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<210> 8202
 <211> 1518
 <212> PRT
 <213> B.fragilis

<400> 8202

Glu	Thr	Ser	Phe	Met	Lys	Arg	Lys	Trp	Ile	Lys	Trp	Val	Ser	Trp	Ile
1				5					10					15	
Leu	Leu	Thr	Pro	Leu	Ile	Leu	Phe	Val	Ile	Leu	Met	Val	Leu	Leu	Tyr
			20					25					30		
Ile	Pro	Pro	Val	Gln	Asn	Phe	Leu	Arg	Lys	Glu	Ala	Ala	Ala	Tyr	Ala
			35				40					45			
Ser	Glu	Ala	Thr	Gly	Met	Gln	Ile	Asn	Val	Arg	Arg	Ile	Asp	Leu	Arg
	50					55					60				
Phe	Pro	Leu	Asn	Leu	Leu	Val	Arg	Gly	Val	Glu	Val	Ile	Gln	Ala	Pro
65					70					75					80
Asp	Thr	Leu	Leu	Ser	Leu	Glu	Ser	Leu	Asn	Val	His	Val	Gln	Ala	Leu
				85					90					95	
Pro	Leu	Phe	Arg	Gly	Lys	Val	Glu	Val	Asp	Asp	Ile	Ser	Leu	Gln	Gln
			100					105						110	
Val	Ala	Val	Asn	Ser	Ala	Asn	Leu	Ile	Asp	Gly	Met	Arg	Leu	Lys	Gly
			115				120					125			
Val	Leu	Gly	Ser	Phe	Arg	Leu	Glu	Ser	His	Gly	Val	Asp	Leu	Pro	Asn
	130						135				140				
Glu	Ile	Ala	Ile	Ile	Asn	Arg	Ala	Glu	Leu	Ser	Asp	Thr	His	Val	Gln
145					150						155				160
Leu	Leu	Leu	Asn	Asp	Thr	Thr	Ala	Thr	Pro	Lys	Asp	Thr	Ala	Gln	Ser
				165					170					175	
Glu	Val	Arg	Trp	Lys	Val	Asp	Leu	Arg	His	Leu	Lys	Leu	Lys	Asn	Val
			180					185						190	
Ser	Phe	Ser	Met	Gln	Leu	Pro	Ala	Asp	Ser	Met	Arg	Leu	Ala	Ala	His
		195					200					205			
Val	Gly	Glu	Ala	Gln	Val	Asn	Asp	Ala	Glu	Ala	Asp	Leu	Lys	Asn	Leu
	210					215					220				
His	Tyr	Gly	Leu	Arg	Ser	Phe	Leu	Val	Ser	Gly	Thr	Ser	Val	Asn	Tyr
225					230					235					240
Asp	Val	Gly	Thr	Ala	Glu	Pro	Ala	Glu	Gly	Phe	Asp	Pro	Ser	His	Ile
				245					250					255	
Ala	Leu	Arg	Asp	Ile	Arg	Ile	Gly	Leu	Asp	Ser	Met	Tyr	Tyr	Arg	Gly
			260					265						270	
Arg	Asn	Met	Asn	Ala	Val	Ile	Arg	Glu	Phe	Ser	Met	Asn	Asp	Arg	Ser
		275						280					285		
Gly	Leu	Ser	Val	Asn	Ser	Leu	Thr	Gly	Arg	Val	Phe	Ala	Asn	Asp	Thr
	290					295					300				
Ile	Ile	Gln	Val	Pro	Ser	Leu	Lys	Leu	Leu	Thr	Pro	His	Ser	Glu	Met
305					310					315					320
Asp	Leu	Thr	Ala	Gln	Thr	Tyr	Trp	Glu	Leu	Val	Asn	Ile	Pro	Thr	Thr
				325					330					335	
Gly	Arg	Leu	Thr	Ala	Arg	Phe	Asn	Ala	Met	Ile	Gly	Lys	Gln	Asp	Val
			340					345					350		
Leu	Leu	Leu	Ala	Gly	Gly	Leu	Pro	Asp	Ser	Phe	Lys	Glu	Ala	Tyr	Pro
			355				360					365			
Phe	Arg	Pro	Leu	Val	Ile	Arg	Ala	Gly	Thr	Glu	Gly	Asn	Leu	Lys	Glu
	370					375					380				
Met	Gln	Ile	Thr	Arg	Phe	Ser	Ala	Glu	Leu	Pro	Gly	Ala	Phe	Ser	Leu
385					390					395					400
Ser	Gly	Gly	Gly	Glu	Leu	Leu	Asn	Leu	Thr	Asp	Ser	Leu	Glu	Arg	Ser

	405		410		415
Ala Ile Ile Asp	Leu Arg Met Gln Thr	Gln Asn Leu Asn Phe Leu Thr			
	420		425		430
Ala Leu Gly Gly Thr Arg Pro Asp	Ser Leu Leu Val Ile Pro Asn Gln				
	435		440		445
Met Ser Leu Val Ala Lys Ala Arg Met	Lys Gly Pro Gln Tyr Met Ala				
	450		455		460
Gln Leu Leu Leu Lys Glu Gly Glu Gly Met	Leu Asn Leu Asp Ala Ala				
	465		470		475
Tyr Asn Gly Ser Thr Glu Ala Tyr Arg	Ala Asp Leu Lys Val Asp Ala				
	485		490		495
Leu Gln Leu Tyr His Phe Leu Pro Lys Asp	Ser Ile Tyr Glu Leu Thr				
	500		505		510
Thr Ser Val Ala Ala Val Gly Arg Gly Ile Asp	Phe Thr Ser Tyr Arg				
	515		520		525
Thr Thr Ala Ser Leu Lys Ala Ser Leu Gln Ser	Leu His Tyr Gly Arg				
	530		535		540
Tyr Gln Ile Ser Gly Ile Glu Val Thr Gly Asp	Val Lys Asn Ala Leu				
	545		550		555
Ala Thr Ala Arg Leu Val Ser Asp Asn Arg	Leu Leu Lys Met Asn Ala				
	565		570		575
Asn Ala Glu Tyr His Leu Ala Lys Pro Tyr Met	Asp Gly Lys Leu Asp				
	580		585		590
Met Asp Val Thr Gln Leu Asp Leu Tyr Glu Leu Gly	Ile Ala Pro Lys				
	595		600		605
Pro Leu Lys Tyr Pro Leu Ala Phe Asn Phe Thr	Ala Glu Ala Arg Arg				
	610		615		620
Asp Arg Ile Phe Thr His Leu Thr Ala Gly Asp	Met Lys Leu Asn Leu				
	625		630		635
Ser Ala Arg Ser Ser Leu Asp Lys Leu Ile Lys Gln	Ser Ala His Phe				
	645		650		655
Ala Asp Val Leu Val Lys Gln Ile Asp Lys Lys Glu	Leu Asp His Gly				
	660		665		670
Glu Leu Arg Glu Ala Leu Pro Thr Ala Ile Phe Ser	Met Ser Ala Gly				
	675		680		685
Lys Glu Asn Pro Leu Ala Tyr Tyr Leu Ala Thr Lys	Asp Ile Ala Phe				
	690		695		700
His Asp Val Gly Val Lys Phe Gly Thr Ala Pro Asp	Trp Gly Ile Asn				
	705		710		715
Gly Lys Ala Ser Ile His Ala Leu Lys Met Asp Thr	Leu Gln Leu Asp				
	725		730		735
Thr Ile Tyr Phe Thr Val Lys Gln Asp Thr Thr Arg	Met Ser Leu His				
	740		745		750
Gly Gly Val Ile Asn Gly Pro Lys Asn Pro Gln Ile	Val Phe Lys Ser				
	755		760		765
Ser Phe Ala Gly Glu Ile Arg Asn Asp Asp Ala Glu	Leu Thr Leu Arg				
	770		775		780
Tyr Glu Asn Ala Lys Gly Glu Thr Gly Val Leu Phe	Gly Val Asn Val				
	785		790		795
Arg Pro Leu Val Glu Gly Asn Gly Lys Gly Asp Gly	Leu Ala Phe Thr				
	805		810		815
Leu Ile Pro Glu Asn Pro Ile Ile Ala Phe Arg Lys	Phe His Phe Val				
	820		825		830
Asp His His Asn Trp Ile Tyr Leu His Lys Asn Met	Arg Leu Tyr Ala				
	835		840		845
Asn Val Asp Met Ala Asp Asp Glu Asp Met Gly	Phe Arg Ile Lys Ser				
	850		855		860
Asn Arg Ser Asp Thr Val Ser Leu Gln Asn Ile Asp	Val Glu Leu Gln				
	865		870		875
					880

Arg Ile Arg Leu Ser Glu Ile Ser Glu Val Leu Pro Tyr Leu Pro Asp
 885 890 895
 Leu Ser Gly Leu Phe Ser Ala Glu Ala Asn Tyr Val Gln Thr Ala Thr
 900 905 910
 Ser Leu Gln Val Ser Ala Glu Ala Asn Ile Asp Glu Leu Thr Tyr Glu
 915 920 925
 Arg Gln Arg Ile Gly Asp Val Ala Leu Gly Val Thr Trp Leu Pro Gly
 930 935 940
 Glu Arg Gly Lys His Tyr Ile Ser Thr Tyr Leu Thr His Glu Gly Glu
 945 950 955 960
 Glu Ile Leu Met Ala Asp Gly Ser Leu His Pro Ser Val Thr Gly Lys
 965 970 975
 Asp Ser Ile Glu Val Asn Ala Ile Met Glu His Phe Pro Leu Lys Ile
 980 985 990
 Ala Asn Ala Phe Val Pro Asp Gln Val Val Thr Leu Ser Gly Asp Met
 995 1000 1005
 Asp Gly Gly Leu His Ile Thr Gly Asp Thr Asp Arg Pro Leu Val Asn
 1010 1015 1020
 Gly Asp Leu Val Leu Asp Ser Val Ser Val Phe Ala Arg Gln Ala Gly
 1025 1030 1035 1040
 Ala Arg Phe Thr Phe Asp Asn Arg Pro Val Gln Ile Lys Asn Ser Arg
 1045 1050 1055
 Leu Thr Phe Asp Lys Phe Ala Ile Phe Thr Thr Gly Lys Asn Pro Phe
 1060 1065 1070
 Thr Ile Asp Gly Thr Val Asp Phe Arg Asn Leu Thr Asp Pro Arg Val
 1075 1080 1085
 Asn Leu Ser Met Leu Ala Glu Asn Tyr Met Leu Leu Asn Ala Pro Arg
 1090 1095 1100
 Thr Lys Glu Ser Leu Val Tyr Gly Lys Val Phe Val Asp Phe Asn Ala
 1105 1110 1115 1120
 Thr Val Arg Gly Pro Ile Asn Ala Leu Val Met Arg Gly Asn Met Asn
 1125 1130 1135
 Leu Leu Gly Asn Thr Asp Val Thr Tyr Val Leu Met Asp Ser Pro Leu
 1140 1145 1150
 Thr Val Gln Asp Arg Leu Gly Asp Leu Val Thr Phe Thr Ser Phe Ser
 1155 1160 1165
 Asp Thr Thr Thr Val Gln Lys Glu Glu Ala Pro Val Val Ser Leu Gly
 1170 1175 1180
 Gly Leu Asp Met Ile Met Thr Val Gln Ile Asp Pro Gly Val Arg Leu
 1185 1190 1195 1200
 Lys Ala Asp Leu Ser Ala Asp Arg Ser Ser Arg Val Glu Leu Gln Gly
 1205 1210 1215
 Gly Gly Asn Leu Ser Met Gln Tyr Thr Pro Gln Gly Asp Leu Ser Leu
 1220 1225 1230
 Ser Gly Arg Tyr Thr Leu Thr Gly Gly Met Met Lys Tyr Ala Leu Pro
 1235 1240 1245
 Val Ile Pro Leu Lys Glu Phe Asn Ile Asn Asn Gly Ser Tyr Val Glu
 1250 1255 1260
 Trp Thr Gly Asn Pro Met Asp Pro Met Leu Asn Leu Lys Ala Thr Glu
 1265 1270 1275 1280
 Arg Leu Arg Ala Ser Val Gly Ser Glu Asn Gly Gln Ser Arg Met Val
 1285 1290 1295
 Asn Phe Asp Val Ser Ile Val Val Lys Asn Arg Leu Asp Asn Leu Ser
 1300 1305 1310
 Leu Ala Phe Glu Ile Asp Ala Pro Asp Asp Ala Glu Val Gln Asn Gln
 1315 1320 1325
 Leu Ala Ser Met Ser Ala Asp Glu Arg Gly Lys Gln Ala Ile Ala Met
 1330 1335 1340
 Leu Ala Thr Gly Leu Tyr Leu Ala Asn Ser Gly Ser Ser Gly Gly Gly

1345 1350 1355 1360
 Gly Leu Asn Met Gly Ser Ala Leu Asn Ser Ile Leu Ser Ser Gln Ile
 1365 1370 1375
 Asn Ala Leu Ala Gly Asn Leu Lys Asn Ala Ser Phe Ser Met Gly Val
 1380 1385 1390
 Glu Asp His Asp Ala Ala Asp Ala Gly Gly Lys Arg Thr Asp Tyr Ser
 1395 1400 1405
 Phe Arg Tyr Ser Gln Arg Phe Phe Asn Asp Arg Phe Gln Ile Val Leu
 1410 1415 1420
 Gly Gly Lys Val Ser Thr Gly Ala Gln Ala Thr Asn Asp Val Glu Ser
 1425 1430 1435 1440
 Phe Ile Asp Asn Ile Ser Leu Glu Tyr Arg Leu Asp Thr Ser Gly Thr
 1445 1450 1455
 Arg Tyr Ile Arg Leu Phe His Asn Lys Asn Tyr Glu Ser Val Leu Glu
 1460 1465 1470
 Gly Glu Ile Thr Glu Thr Gly Ile Gly Leu Val Leu Arg Lys Arg Ile
 1475 1480 1485
 Asp Arg Leu Gly Glu Leu Phe Ile Phe Arg Lys Lys Lys Lys Thr Leu
 1490 1495 1500
 Pro Glu Thr Gln Lys Ala Pro Ser Asp Gly Glu Ala His Gln
 1505 1510 1515

<210> 8203

<211> 76

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (20), (25)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8203

Arg Ser Phe Phe Thr Tyr Leu Tyr Tyr Lys Tyr Leu Thr Val Leu Lys
 1 5 10 15
 Phe Asp Leu Xaa Leu Thr Gly Leu Xaa Ile Ile Phe Ser Lys Glu Pro
 20 25 30
 Leu Leu Phe Lys Ile Leu Ala Pro Phe Gln Lys Ala Gly Ala Lys Gly
 35 40 45
 Lys Gly Val Asn Phe Lys Pro Ala Lys Val Phe Gly Lys Phe Phe Phe
 50 55 60
 Lys Val Pro Gly Phe Asn Phe Gln Ala Leu Leu Gly
 65 70 75

<210> 8204

<211> 301

<212> PRT

<213> B.fragilis

<400> 8204

Ala Thr Lys Val Arg Gly Phe Glu Val Lys Ser Tyr Ile Cys Arg Leu
 1 5 10 15
 Lys Leu Asn Lys Ser Val Met Lys Gln Asn Phe Trp Ile Leu Leu Ile
 20 25 30
 Ile Leu Ala Cys Ser Ala Val Ala Cys Lys Ser Gly Gln Lys Lys Asp
 35 40 45
 Gly Asn Met Glu Lys Glu Thr Val Leu Lys Ile Glu Thr Ser Met Gly
 50 55 60
 Asp Ile Lys Val Lys Leu Tyr Asn Glu Thr Pro Lys His Arg Asp Asn

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65          70          75          80
Phe Ile Lys Leu Ala Lys Asp Gly Thr Tyr Asn Gly Thr Leu Phe His
      85          90
Arg Val Ile Lys Asp Phe Met Val Gln Ala Gly Asp Pro Glu Ser Lys
      100          105          110
Asn Ala Pro Lys Gly Lys Met Leu Gly Ser Gly Asp Val Gly Tyr Thr
      115          120          125
Val Pro Ala Glu Phe Val Tyr Pro Lys Tyr Phe His Lys Lys Gly Ala
      130          135          140
Leu Ser Ala Ala Arg Gln Gly Asp Glu Val Asn Pro Lys Lys Glu Ser
145          150          155          160
Ser Gly Cys Gln Phe Tyr Ile Val Thr Gly Lys Val Phe Asn Asp Ser
      165          170          175
Thr Leu Leu Asn Met Glu Gln Gln Lys Asn Gln Asn Lys Val Thr Glu
      180          185          190
Ala Phe Asn Ala Leu Ala Gln Lys His Met Lys Glu Ile Tyr Lys Met
      195          200          205
Arg Lys Ala Asn Asp Gln Asp Gly Leu Tyr Ala Leu Gln Asp Thr Leu
      210          215          220
Phe Ile Gln Ala Glu Ala Glu Ala Ala Lys Gln Pro Asp Phe His Phe
225          230          235          240
Thr Pro Glu Gln Ile Lys Ala Tyr Thr Thr Val Gly Gly Thr Pro His
      245          250          255
Leu Asp Gly Glu Tyr Thr Val Phe Gly Glu Val Val Glu Gly Met Asp
      260          265          270
Ile Val Asp Lys Ile Gln Gln Val Lys Thr Asp Arg Ser Asp Arg Pro
      275          280          285
Glu Glu Asp Val Lys Ile Ile Asn Val Ser Val Ile Glu
      290          295          300

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<210> 8205

<211> 128

<212> PRT

<213> B.fragilis

<400> 8205

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Thr Leu Ser Leu Lys His Ser Gln Ser Val Phe Val Leu Thr Lys Arg
1          5          10          15
Phe Phe Leu Leu Tyr Lys Arg Leu Ile Lys Leu Lys Lys Ser Ile Leu
      20          25          30
Glu Lys Val Leu Leu Thr Ser Pro Pro Ile Lys Gln Ile Ile Gln Ser
      35          40          45
Ser Glu Thr Ser Tyr Ile Lys Pro Ile His Ser Leu Glu Ser Pro Leu
      50          55          60
Leu Gln Gly Ser Val Pro Pro Arg Asp Ala Glu Ile Pro Thr Ser Ser
65          70          75          80
Asn Asn Arg Tyr Ile Gly Gln Glu Lys Ala Ile Gly Phe Pro Ile Ala
      85          90          95
Ile Ser Ile Lys Lys Val Leu Ser Gly Gly Ala Leu Pro Phe Leu Arg
      100          105          110
Pro Leu Tyr Lys Thr Ser His Pro Leu Arg Ser Phe Asp Arg Arg Gly
      115          120          125

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<210> 8206

<211> 333

<212> PRT

<213> B.fragilis

<400> 8206

Glu Asn Ser Ser Tyr Phe Val Leu His Ser Ser Phe Tyr Phe Val Leu
 1 5 10 15
 Leu Gln Arg Tyr Leu Met Arg His Ile Thr Asn Leu Leu Ile Phe Thr
 20 25 30
 Val Met Lys Pro Thr Leu Phe Val Leu Ala Ala Gly Met Gly Ser Arg
 35 40 45
 Tyr Gly Gly Leu Lys Gln Leu Asp Gly Leu Gly Pro Asn Gly Glu Thr
 50 55 60
 Ile Met Asp Tyr Ser Ile Tyr Asp Ala Ile Arg Gly Gly Phe Gly Lys
 65 70 75 80
 Val Val Phe Val Ile Arg Lys Asp Phe Glu Gln Asp Phe Arg Glu Lys
 85 90 95
 Ile Leu Ser Lys Tyr Glu Asn His Ile Pro Val Glu Leu Val Phe Gln
 100 105 110
 Ala Leu Asp Asn Leu Pro Glu Gly Phe Thr Cys Pro Ala Asp Arg Val
 115 120 125
 Lys Pro Trp Gly Thr Asn His Ala Val Leu Met Gly Lys Asp Val Ile
 130 135 140
 Lys Glu Pro Phe Ala Val Ile Asn Ala Asp Asp Phe Tyr Gly Arg Asp
 145 150 155 160
 Ser Phe Ala Val Leu Gly Ala Glu Leu Ser Gln Met Asp Gly Lys Lys
 165 170 175
 Asn Asp Tyr Cys Met Val Gly Tyr Arg Val Gly Asn Thr Leu Ser Glu
 180 185 190
 Ser Gly Ser Val Ala Arg Gly Val Cys Glu Thr Asn Ala Glu Gly Tyr
 195 200 205
 Leu Thr Thr Val Val Glu Arg Thr Ala Ile Glu Arg Ile Asp Gly Lys
 210 215 220
 Val Ser Phe Lys Asp Glu Asn Gly Glu Met Gln Thr Ile Gly Asp Asn
 225 230 235 240
 Thr Pro Val Ser Met Asn Met Trp Gly Phe Thr Pro Asp Tyr Phe Ala
 245 250 255
 Tyr Ser Glu Glu Tyr Phe Lys Glu Phe Leu Lys Glu Asn Glu Gly Asn
 260 265 270
 Leu Lys Ser Glu Tyr Phe Ile Pro Leu Met Val Asn Lys Leu Val Asn
 275 280 285
 Glu Gly Thr Ala Arg Val Lys Val Leu Asp Thr Thr Ser Lys Trp Phe
 290 295 300
 Gly Val Thr Tyr Ala Ala Asp Arg Gln Gly Val Val Asp Lys Ile Gln
 305 310 315 320
 Ala Leu Val Asp Ala Gly Glu Tyr Pro Asp Lys Leu Phe
 325 330

<210> 8207

<211> 256

<212> PRT

<213> B.fragilis

<400> 8207

Gln Ile Met Lys Thr Glu Leu Lys Gly Trp Leu Ala Asp Asn Thr Val
 1 5 10 15
 Thr Thr Asp Asn Lys Glu Asp Lys Ile Leu Val Leu Glu Ser Ala Gly
 20 25 30
 Asn Leu Thr Leu Ser Asp Val Leu Asp Glu Met Lys Lys Glu Asp Thr
 35 40 45
 Gly Leu Arg Ala Glu Thr Leu Lys His Ala Val Asp Leu Phe Gln Arg
 50 55 60
 Thr Val Ser Glu Leu Val Leu Asn Gly Tyr Ser Val Asn Thr Gly Leu
 65 70 75 80

Phe Arg Ala Val Pro Gln Phe Arg Gly Val Ile Asp Gly Gly Val Trp
 85 90 95
 Asn Ser Glu Lys Asn Ser Ile Tyr Val Ser Phe Asn Gln Asp Lys Asp
 100 105 110
 Leu Arg Glu Thr Ile Ala Arg Thr Gly Val Lys Ile Leu Gly Ala Lys
 115 120 125
 Gly Asp Ser Ala Tyr Phe Ile Gly Gly Glu Asp Ala Ala Thr Arg Ala
 130 135 140
 Thr Asp Gly Ser Ala Thr Ala Gly Arg Asn Tyr Arg Leu Gln Gly Lys
 145 150 155 160
 Asn Ile Lys Val Thr Gly Thr Asp Pro Ala Val Gly Ile Val Leu Ile
 165 170 175
 Asp Glu Lys Gly Thr Glu Thr Lys Leu Pro Met Asp Met Ile Ala Val
 180 185 190
 Asn Asn Pro Ser Glu Val Leu Val Leu Leu Pro Ala Asp Leu Lys Asp
 195 200 205
 Gly Ile Tyr Glu Leu Arg Leu Thr Thr Gln Tyr Cys His Ser Ser Gln
 210 215 220
 Thr Met Leu Lys Thr Pro Arg Thr Val Ser Arg Phe Ile Asn Ile Gly
 225 230 235 240
 Ala Ser Gln Gly Ser Gly Asp Asp Asp Ile Val Asp Asp Pro Thr Ala
 245 250 255

<210> 8208
 <211> 726
 <212> PRT
 <213> B.fragilis

<400> 8208
 Arg Leu Lys Trp His Tyr Asn Ser Ala Tyr Asp Ala Val Asn Arg Leu
 1 5 10 15
 Ala Thr Phe Ala Asp Ile Asp Leu Val Tyr Ala His Asn Asp Val Met
 20 25 30
 Ala Leu Ala Ala Arg Asp Val Ile Met Lys Arg Asp Ser Val Ser Gly
 35 40 45
 Lys Arg Ile Arg Phe Ile Gly Ile Asp Gly Val Tyr Gly Asp Gly Ala
 50 55 60
 Gly Leu Gln Ala Val Ala Asp Glu Lys Leu Glu Ala Ser Phe Gln Tyr
 65 70 75 80
 Pro Thr Gly Gly Ala Ile Ser Ile Gln Val Ala Met Gln Ile Ile Asn
 85 90 95
 Gly Glu Lys Val Lys Lys Asn Tyr Val Leu Asn Thr Ala Ile Ile Asn
 100 105 110
 Arg Gly Asn Ala Lys Thr Ile Leu Ala Gln Ser Glu Gln Leu Asn His
 115 120 125
 Tyr Gln Lys Arg Ile Asn Arg Gln Lys Gln Glu Glu Asp Asn Leu Leu
 130 135 140
 Ser Arg Phe Lys Phe Leu Arg Asn Ser Thr Ile Leu Ile Leu Ala Leu
 145 150 155 160
 Met Leu Leu Ile Ile Pro Leu Leu Gly Tyr Val Met Tyr Met Asn Leu
 165 170 175
 Arg Val Lys Asn Lys Asn Lys Glu Leu His Asp Lys Asn Gln Leu Val
 180 185 190
 Glu Ala Gln Lys Glu Glu Leu Ala Val Lys Asn Ser Gln Ile Glu Asn
 195 200 205
 Ile Ser Asn Gln Lys Leu Gln Phe Phe Thr Asn Ile Ser His Glu Ile
 210 215 220
 Arg Thr Pro Leu Thr Leu Ile Leu Gly Pro Val Asn Lys Leu Ile Lys
 225 230 235 240

Asn	Ser	Lys	Leu	Asp	Pro	Ser	Ile	Gln	Glu	Asp	Val	Ala	Leu	Met	Lys
				245					250					255	
Arg	Asn	Val	Asp	Arg	Leu	Tyr	Arg	Ile	Val	Asn	Gln	Ile	Leu	Asp	Phe
			260					265					270		
Arg	Arg	Ile	Asp	Asn	Asp	Lys	Met	Lys	Leu	Ile	Leu	Arg	Gln	Val	Asp
		275					280					285			
Leu	Ile	Gly	Met	Val	Arg	Glu	Val	Phe	Asp	Tyr	Phe	Thr	Gly	Ile	Ala
	290					295					300				
Glu	Glu	Lys	Gln	Ile	His	Tyr	Arg	Phe	Ser	Thr	Asn	Ile	Asp	Glu	Leu
305					310					315				320	
Asn	Ile	Tyr	Ile	Asp	Val	Asn	Lys	Ile	Glu	Gln	Val	Leu	Val	Asn	Ile
				325					330					335	
Ile	Ser	Asn	Ala	Phe	Lys	Tyr	Ser	Asp	Ser	Gly	Gly	Asp	Ile	Ser	Val
			340					345					350		
Arg	Ile	Thr	Gly	Glu	Ala	Glu	Thr	Val	Leu	Leu	Glu	Val	Glu	Asp	His
		355					360					365			
Gly	Arg	Gly	Ile	Ser	Lys	Glu	Ser	Met	Glu	His	Leu	Phe	Glu	Arg	Phe
	370					375					380				
Tyr	Thr	Gly	Asn	Lys	Thr	Phe	Gly	Thr	Val	Gly	Phe	Gly	Ile	Gly	Leu
385					390					395				400	
Asn	Leu	Ser	Lys	Glu	Tyr	Val	Asp	Leu	His	Asp	Gly	Glu	Ile	Arg	Ala
				405					410					415	
Glu	Ser	Gln	Pro	Gly	Glu	Tyr	Thr	Leu	Phe	Ser	Val	Arg	Leu	Tyr	Lys
			420					425					430		
Asp	Ile	Ala	His	Tyr	Thr	His	Glu	Tyr	Ile	Leu	Glu	Glu	Thr	Asp	Arg
		435					440					445			
Phe	Asn	Leu	Ser	Tyr	His	Asp	Met	Glu	Val	Asp	Thr	Thr	Val	Val	Asn
	450					455					460				
Glu	Met	Leu	Ser	Lys	Thr	Tyr	Asp	Tyr	His	Val	Leu	Val	Val	Glu	Asp
465					470					475				480	
Asp	Pro	Asp	Val	Arg	Tyr	Ser	Leu	Arg	Lys	Glu	Leu	Ser	Ala	Asn	Phe
				485					490					495	
Gln	Val	Glu	Val	Ala	Gly	Asn	Gly	Asn	Glu	Ala	Leu	Asp	Leu	Leu	Gly
			500					505					510		
Gln	Gly	Asp	Ala	Phe	His	Leu	Ile	Leu	Ser	Asp	Val	Leu	Met	Pro	Gly
	515						520					525			
Met	Asn	Gly	Phe	Gln	Leu	Val	Asn	Arg	Val	Lys	Asn	Asp	Leu	Ala	Phe
	530					535					540				
Ser	His	Ile	Pro	Ile	Ile	Leu	Leu	Thr	Ala	Leu	Ser	Glu	Asp	Ser	Gln
545					550					555				560	
Arg	Ile	Tyr	Gly	Ile	Ala	Glu	Gly	Ala	Asp	Glu	Tyr	Ile	Pro	Lys	Pro
				565					570					575	
Phe	Asn	Ile	Asp	Phe	Leu	Lys	Ile	Arg	Ile	Ile	Asn	Met	Ile	Ser	Glu
			580					585					590		
Arg	Gln	Lys	Met	Lys	Glu	Ala	Tyr	Met	Lys	Asn	Leu	Arg	Ala	Gly	Thr
			595					600				605			
Met	Asp	Asn	Val	Glu	Val	Cys	Lys	Leu	Met	Lys	Val	Asp	Glu	Leu	Phe
	610					615					620				
Arg	Asp	Lys	Leu	Leu	Ser	Ile	Val	Asp	Thr	Gln	Tyr	Glu	Asn	Ser	Asp
625					630					635				640	
Phe	Ser	Ile	Glu	Asp	Leu	Ser	Glu	His	Leu	Gly	Leu	Ser	Arg	Val	His
			645					650						655	
Leu	Tyr	Arg	Lys	Met	Lys	Thr	Leu	Phe	Gly	Val	Ser	Pro	Thr	Asp	Tyr
			660					665					670		
Leu	Arg	Asn	Tyr	Arg	Leu	Asn	Lys	Ala	Met	Leu	Leu	Leu	Lys	Ala	Arg
		675					680					685			
Gln	Tyr	Asn	Ile	Ser	Glu	Ile	Ala	Tyr	Met	Thr	Gly	Phe	Thr	Ser	Pro
	690					695					700				
Ala	Tyr	Phe	Thr	Lys	Cys	Phe	Arg	Thr	Leu	Tyr	Gly	Val	Thr	Pro	Thr

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<210> 8209
<211> 536
<212> PRT
<213> B.fragilis
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Tyr 1	Met	Asn	Arg	Thr 5	Phe	Ile	Met	Arg	Glu 10	Cys	Leu	Gly	Lys	Ala 15	Leu
Trp	Leu	Cys	Phe	Cys	Leu	Ser	Ile	Ala	Gly	Cys	Ala	Glu	Asp	Asp	Arg
			20					25					30		
Met	Thr	Pro	Leu	Ser	Ala	Asp	Ser	Gly	Asp	Thr	Ala	Asp	Glu	Leu	Ile
		35				40					45				
Pro	Ile	His	Ile	Ser	Leu	Thr	Gly	Asp	Asn	Asp	Tyr	His	Ser	Ser	Ser
	50					55				60					
Phe	Asn	Asn	Ala	Ser	Thr	Arg	Ser	His	Ser	Pro	Leu	Ile	Ala	Glu	Trp
65					70					75					80
Val	Gly	Val	Lys	Ala	Phe	Ser	Pro	Thr	Arg	Thr	Gly	Glu	Gln	Pro	Asp
				85					90					95	
Tyr	Asp	Gly	Pro	Arg	Ile	Ala	Ser	Met	Glu	Leu	Thr	Glu	Asp	Thr	Leu
			100					105					110		
Pro	Arg	Val	Ser	Thr	Arg	Ala	Thr	Val	Pro	Ala	Gly	Val	Tyr	Phe	Arg
		115					120					125			
Leu	Ile	Val	Phe	Arg	Lys	Ser	Gly	Asn	Asn	Tyr	Val	Phe	Gln	Ser	Val
		130				135					140				
Ala	Asp	Tyr	Ala	Ser	Asn	Gly	Thr	Gly	Thr	Pro	Val	Leu	Lys	Gln	Gly
145					150					155					160
Lys	Leu	Leu	Thr	Arg	Ser	Gly	Thr	Ile	Arg	Met	Val	Gly	Tyr	Ser	Phe
				165					170					175	
Asn	Thr	Ala	Thr	Ala	Ala	Asp	Leu	Gly	Thr	Met	Leu	Ser	Thr	Tyr	Ala
			180					185						190	
Tyr	Asn	Ser	Ser	Thr	Val	Ser	Ile	Pro	Asn	Met	Ser	Lys	Asp	Phe	Met
		195					200					205			
Thr	Phe	Asp	Ser	Gly	Asp	Ile	Thr	Asn	Val	Asn	Ser	Leu	Ser	His	Asn
	210				215						220				
Leu	Pro	Val	Ser	Phe	Asn	Gln	Lys	Leu	Cys	Lys	Leu	Thr	Ile	Thr	Ile
225					230					235					240
Ser	Pro	Thr	Gly	Phe	Pro	Ser	Asn	Thr	Ile	Thr	Asn	Cys	Thr	Gly	Val
				245					250					255	
Tyr	Val	Lys	Gln	Gly	Gly	Asn	Ser	Thr	Ser	Trp	Lys	Ile	Gly	Pro	Ser
			260					265					270		
Thr	Asn	Val	Val	Ala	Thr	Asn	Thr	Asn	Asn	Thr	Ala	Ala	Phe	Ser	Pro
		275					280					285			
Ser	Thr	Ala	Leu	Ser	Thr	Thr	Ile	Arg	Met	Val	Pro	Phe	Ala	Gly	Ala
	290					295					300				
Arg	Thr	Ile	Thr	Val	His	Phe	Asn	Thr	Leu	Thr	Val	Gly	Gly	Arg	Ile
305					310					315					320
Val	Asn	Asn	Asn	Thr	Glu	Ile	Thr	Ser	Thr	Gln	Ser	Val	Gln	Leu	Lys
				325						330				335	
Glu	Gly	Lys	Ser	Tyr	Thr	Leu	Lys	Ile	Gln	Phe	Lys	Lys	Gly	Pro	Gly
			340					345					350		
Ile	Asn	Val	Leu	Glu	Ser	Asp	Ile	Asn	Leu	Thr	Gly	Asn	Gly	Cys	Thr
</															

385 390 395 400
 Arg Gly Tyr Tyr Tyr Thr Trp Tyr Ser Thr Tyr Thr Gly Asn Thr Ser
 405 410 415
 Gln Asn Asn Thr Asp Pro Cys Ser Lys Leu Asn Val Ser Thr Tyr Gly
 420 425 430
 Thr Gly Trp Arg Thr Pro Ser Arg Asn Glu Leu Thr Lys Leu Ser Arg
 435 440 445
 Cys Thr Asn Lys Ala Lys Val Asn Asn Gly Met Trp Phe Met Asn Ser
 450 455 460
 Ser Lys Gly Leu Phe Leu Pro Leu Ala Gly His Thr Pro Ser Ala Ser
 465 470 475 480
 Gly Ala Ser Thr Gly Gly Asn Ala Val Val Asn Gly Asn Arg Asp Gly
 485 490 495
 Asn Tyr Trp Cys Thr Glu Lys Tyr Tyr Arg Phe Leu Phe Gly Thr Asn
 500 505 510
 Gly His Thr Val Ser Asp Ala Ala Ser Gly Ala Phe Gly Cys Ser Val
 515 520 525
 Arg Cys Val Lys Gly Thr Lys Gln
 530 535

<210> 8210
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 8210
 Val Cys Val Leu Gln Ser Asp Met Thr Val Leu Asn Thr Gln Trp Cys
 1 5 10 15
 Phe Lys Lys Arg Thr Ser Asp Ala Thr Lys Ile Arg Arg Phe Phe His
 20 25 30
 Leu Cys Lys Phe Phe Tyr Ile Val Leu Ile Ile Ser His Leu Ser Ile
 35 40 45
 Leu Leu Ala Phe Ser Ala Glu Ser Lys Asn Ser Val Ser Lys Asp Val
 50 55 60
 Arg Leu Leu Lys His Arg Leu Lys Asn
 65 70

<210> 8211
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 8211
 Leu Phe Pro Ser Phe Asn Cys Thr Leu Trp Val Asp Val Ile Ser Val
 1 5 10 15
 Leu Leu Phe Thr Ile Arg Pro Pro Thr Val Ser Val Leu Lys Cys Thr
 20 25 30
 Val Ile Val Leu Ala Pro Ala Asn Gly Thr Met Arg Met Val Val Leu
 35 40 45
 Arg Ala Val Leu Gly Leu Asn Ala Ala Val Leu Phe Val Leu Val Ala
 50 55 60
 Thr Thr Leu Val Glu Gly Pro Ile Phe His Asp Val Glu Phe Pro Pro
 65 70 75 80
 Cys Phe Thr Tyr Thr Pro Val Gln Leu Val Ile Val Leu Leu Gly Asn
 85 90 95
 Pro Val Gly Leu Met Val Ile Val Ser Leu His Asn Phe
 100 105

<210> 8212

<211> 124
 <212> PRT
 <213> B.fragilis

<400> 8212

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Pro Thr Leu Ser Thr Thr Gln Ile Thr Thr Leu Met Leu Thr Gln Phe
1          5          10          15
Leu Asn Leu Leu Ala Thr Ile Ile Ser Val Ile Ser Leu Leu Ile Val
20          25          30
Thr Tyr Gly Ala Leu Ile Ala Ile Ile Ser Phe Ile Ile Asn Glu Leu
35          40          45
Lys Arg Val Thr Gly Ala Tyr Thr Pro Thr Asn Ile Arg Lys Leu Arg
50          55          60
Ala Val Phe Gly Thr Tyr Leu Leu Leu Gly Leu Glu Phe Leu Ile Ala
65          70          75          80
Ser Asp Ile Leu Lys Thr Val Leu Glu Pro Thr Met Asn Glu Leu Ile
85          90          95
Ile Leu Gly Gly Ile Val Val Val Arg Thr Ile Leu Ser Val Phe Leu
100         105         110
Asn Lys Glu Ile Lys Glu Leu Glu Thr Glu Asn Asn
115         120

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<210> 8213
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 8213

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1          5          10          15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
20          25          30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
35          40          45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
50          55          60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65          70          75          80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
85          90          95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
100         105         110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
115         120         125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
130         135         140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145         150         155         160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
165         170         175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
180         185         190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
195         200         205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
210         215         220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225         230         235         240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu

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                245                250                255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
                260                265                270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
                275                280                285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
                290                295                300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
305                310                315                320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
                325                330                335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
                340                345                350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
355                360                365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
370                375                380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
385                390                395                400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
                405                410                415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
                420                425                430

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<210> 8214
 <211> 76
 <212> PRT
 <213> B.fragilis

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<400> 8214
Asn Val Glu His Met Ala Lys Val Ile Asn Arg Asp Val Pro Ile Ala
1                5                10                15
Glu Glu Asn Thr Thr Leu Thr Gly Gln Pro Ala Thr Asn Met Tyr Asp
                20                25                30
Asp Trp Ser Glu Glu Met Glu Asp Arg Ala Asp Asn Val Tyr Asp Asp
35                40                45
Thr Lys Lys Lys Ser Ala Gly Asn Lys Lys Ser Lys Glu Lys Lys Leu
50                55                60
Lys Glu Ile Asp Glu Val Val Lys Glu Asp Leu Glu
65                70                75

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<210> 8215
 <211> 687
 <212> PRT
 <213> B.fragilis

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<400> 8215
His His Lys His Ile Asn Asn Ser Val Ser Thr Ser Trp Leu Phe Gly
1                5                10                15
Ile Leu Leu Glu Thr Leu Phe Val Lys Thr Arg Thr Arg Met Ile Arg
20                25                30
His Tyr Phe Lys Ile Ala Phe Arg Asn Leu Leu Lys Tyr Lys Thr Gln
35                40                45
Ser Ile Ile Ser Ile Ile Gly Leu Ala Val Gly Ile Thr Cys Phe Ala
50                55                60
Leu Ala Thr Leu Trp Ile Arg Tyr Glu Met Thr Tyr Asp Thr Phe His
65                70                75                80
Arg Arg Ala Asp Asp Ile Tyr Leu Val Arg Ala Gln Leu Thr Ile Thr
85                90                95

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Asp Gly Thr Leu Ser Asn Ser Met Pro Tyr Pro Ala Ile Glu Tyr Leu
 100 105 110
 Arg Lys Asn Ile Ser Glu Ile Glu Asp Ile Cys Gly Ile Ser Pro Phe
 115 120 125
 Lys Thr Asn Leu Arg Phe Lys Asp Lys Gly Gly Asp Leu Leu Ala Ile
 130 135 140
 Glu Val Asp Ser Ala Phe Ile Arg Met Phe Asp Val Arg Ile Leu Gln
 145 150 155 160
 Gly Asn Val Asn Phe Leu Lys Lys Lys Ser Asn Glu Ile Ala Ile Thr
 165 170 175
 Glu Ala Val Ala Lys Glu Trp Phe Gly Asn Glu Ser Pro Leu Gly Lys
 180 185 190
 Glu Ile Glu Leu Gly Ser Arg Pro Cys Lys Val Cys Ala Val Val Ser
 195 200 205
 Gly Trp Ser Gln His Ser Asn Leu Ser Tyr Gly Ala Leu Leu Pro Ala
 210 215 220
 Arg His His Pro Ser Trp Gln Ser Asn Ser Glu Gln Ile Phe Val Arg
 225 230 235 240
 Ile Leu Pro Asp Thr Asp Lys Ser Ala Leu Gln Lys Arg Ile Ser Ser
 245 250 255
 Leu Asp Ala Ser Ser Gln Glu Lys Glu Ser Thr Leu Gly Lys Leu Asn
 260 265 270
 Phe Thr Pro Ile Thr Ser Leu Arg Tyr Ser Asp Tyr Leu Gln Lys Asp
 275 280 285
 Glu Ile Val Ile Ser Phe Asn Tyr Ile Arg Tyr Phe Ala Met Ala Gly
 290 295 300
 Val Leu Val Ile Val Cys Ser Leu Phe Asn Tyr Leu Thr Leu Phe Val
 305 310 315 320
 Ser Arg Leu Arg Met Arg Gly Arg Glu Leu Gly Leu Arg Lys Val Cys
 325 330 335
 Gly Ser Thr Asn Arg Ser Leu Phe Ala Leu Leu Ser Val Glu Tyr Leu
 340 345 350
 Ile Val Leu Leu Ala Gly Ser Leu Leu Gly Met Ala Phe Ile Glu Ala
 355 360 365
 Cys Leu Pro His Phe Ile Glu Leu Ala Gln Ile Ser Glu Ala Thr Pro
 370 375 380
 Leu Tyr Thr Glu Val Ile Ile Tyr Ile Leu Ala Val Ile Val Leu Ser
 385 390 395 400
 Phe Gly Ile Ser Gln Ile Pro Leu Tyr Tyr Phe Arg Ser Arg Thr Leu
 405 410 415
 Gln Ser Ser Ile Arg Asn Lys Lys Gly Ser Pro Gln Arg Gly Ile Phe
 420 425 430
 Arg Arg Leu Gly Leu Ile Ala Gln Leu Ile Ile Ser Leu Gly Phe Ile
 435 440 445
 Phe Cys Thr Thr Ile Met Met Lys Gln Leu Tyr Tyr Leu Lys Asn Thr
 450 455 460
 Asp Leu Gly Ile Glu Arg His Asn Ile Gly Asn Val Ala Val Trp Met
 465 470 475 480
 Lys Gly Asp Ile Asn Glu Trp Ser Ser Lys Ile Ala Asn Leu Pro Met
 485 490 495
 Val Thr Glu Ala Leu Pro Pro His Tyr Phe Pro Ile Val Pro Thr Gly
 500 505 510
 Pro Met Met Tyr Thr Asp Ile Asn Gly Trp Asp Gly Leu Asn Glu Thr
 515 520 525
 Thr Asp Glu Thr Tyr Ser Val Gly Leu Ile Pro Ser Gly Lys Glu Phe
 530 535 540
 Phe Asp Phe Tyr Gly Leu Gln Leu Thr Glu Gly Glu Trp Leu Ser Glu
 545 550 555 560
 Lys Asn Ser Pro Gly Asp Val Ile Ile Asn Glu Thr Ala Ala Leu Thr

				565					570					575					
Phe	Gly	Trp	Arg	Asn	Pro	Val	Gly	Lys	Gln	Phe	Tyr	Ser	Glu	Tyr	Glu				
			580					585					590						
His	Asn	Arg	Thr	Tyr	Tyr	Thr	Val	Val	Gly	Val	Val	Lys	Asp	Phe	Ser				
		595					600					605							
Tyr	Leu	Pro	Pro	Thr	Ile	Ala	Pro	Arg	Pro	Leu	Ala	Phe	Val	Arg	Thr				
	610					615					620								
Glu	Glu	Gln	Lys	Tyr	Leu	Trp	Ser	Arg	Ala	Ser	Ile	Leu	Phe	Lys	Phe				
625					630					635					640				
Thr	Glu	Gly	Ser	Trp	Glu	Ala	Cys	Lys	Asp	Thr	Ile	Arg	Lys	Met	Lys				
			645					650						655					
Glu	Glu	Asp	Phe	Pro	Ser	Ser	Phe	Leu	Arg	Leu	Tyr	Asn	Glu	Glu	Glu				
		660						665					670						
Glu	Tyr	Asn	Lys	Pro	Lys	Ile	Arg	Asn	Tyr	His	Pro	Ile	His	Asp					
	675						680					685							

<210> 8216

<211> 83

<212> PRT

<213> B.fragilis

<400> 8216

Val	Pro	Glu	His	Gln	Ile	Val	Ala	Gln	Asp	Phe	Ala	Met	Ser	Glu	Phe				
1			5					10				15							
Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Met				
		20					25					30							
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu				
	35					40					45								
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu				
	50					55					60								
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser				
65					70					75					80				
Ser	Ala	Arg																	

<210> 8217

<211> 837

<212> PRT

<213> B.fragilis

<400> 8217

Phe	Ser	Leu	Asn	Ile	Leu	Ile	Ser	Lys	Arg	Leu	Lys	Phe	Phe	Gln	Thr				
1			5					10					15						
Leu	Cys	Tyr	Ser	Val	Val	Asn	Gln	Thr	Gln	Asn	His	Thr	Asn	Met	Lys				
		20					25					30							
Thr	Ile	Arg	Leu	Ala	Trp	Lys	Ala	Leu	Ala	Arg	Phe	Arg	Thr	Tyr	Thr				
	35					40					45								
Phe	Ile	Asn	Ile	Leu	Gly	Leu	Ala	Leu	Ser	Leu	Ala	Cys	Val	Leu	Ile				
	50				55					60									
Ile	Leu	Arg	Tyr	Ile	His	Gln	Glu	Val	Thr	Val	Asn	His	Phe	Cys	Lys				
65					70				75						80				
Asp	Leu	Glu	Asn	Thr	Tyr	Leu	Leu	Tyr	Ile	Glu	Tyr	Glu	Asp	Gly	Arg				
			85					90					95						
Arg	Thr	Ile	Ser	Ser	Asn	Glu	Asp	Arg	Asn	Asn	Asp	Pro	Asn	Phe	Ile				
		100					105						110						
Asp	Pro	Leu	Asn	Asp	Pro	Ser	Val	Leu	Lys	Ser	Thr	Arg	Trp	Ile	Asn				
	115						120					125							
Phe	Pro	Glu	Asp	Arg	Ile	Thr	Val	Gly	Lys	Gln	Ile	Tyr	Asn	Val	Lys				
	130					135					140								

Thr Val Val Thr Asp Ser Val Phe Leu Gln Ile Leu Pro Tyr Pro Ser
 145 150 155 160
 Val Ser Gly Ile Ser Ser Leu Lys Ser Pro Asn Asp Ala Ile Ile Thr
 165 170 175
 Arg Arg Leu Ala Glu Arg Leu Phe Gly Lys Glu Asn Pro Ile Gly Lys
 180 185 190
 Thr Met Thr Tyr Ser Thr Gly Asp Ile Val Thr Val Thr Gly Val Ile
 195 200 205
 Gly Glu Pro Thr Thr Lys Ser Phe Leu Asp Phe Asp Leu Ile Ile Ser
 210 215 220
 Glu Arg Leu Gln His Ser Trp Ser Arg Leu Ser Asn Ser Leu Val Gln
 225 230 235 240
 Leu Ile Pro Gly Thr Asp Phe Lys Lys Leu Asn Val Lys Asn Glu Lys
 245 250 255
 Phe Met Lys Leu Arg Cys His Met Asp Ala Pro Thr Arg Leu Gln Phe
 260 265 270
 Phe Pro Leu Lys Asp Phe Tyr Phe Asp Lys Thr Val Arg Val Tyr Asn
 275 280 285
 Asn Asn Ile Arg Lys Gly Asn Tyr Asn Asn Ile Leu Val Leu Ala Val
 290 295 300
 Val Thr Ile Ala Leu Leu Ile Ile Gly Leu Phe Asn Phe Ile Asn Ile
 305 310 315 320
 Tyr Thr Val Met Met Leu Lys Arg Ala Arg Glu Phe Gly Val Lys Lys
 325 330 335
 Val Tyr Gly Ala Gly Ala Lys Asp Val Phe Ala Gln Ile Phe Thr Glu
 340 345 350
 Asn Phe Ile Leu Thr Gly Met Ala Leu Cys Ile Ser Trp Cys Ile Ile
 355 360 365
 Glu Ile Thr Gly Gly Met Met Glu His Val Leu Arg Ile Pro Gln Thr
 370 375 380
 Ser Asn Thr Glu Phe Ser Ala Thr Leu Ser Val Gly Ile Leu Ile Leu
 385 390 395 400
 Leu Pro Leu Leu Thr Ser Ile Tyr Pro Phe Ile Arg Tyr Asn Tyr Val
 405 410 415
 Ser Pro Ser Val Ser Ile Arg Ser Val Asn Ala Gly Gly His Ser Ile
 420 425 430
 Val Ser Arg Val Leu Phe Leu Phe Val Gln Tyr Ile Ile Thr Phe Val
 435 440 445
 Leu Ile Ile Val Ser Leu Phe Phe Thr Lys Gln Val Arg Phe Met Leu
 450 455 460
 Ser Ala Asp Leu Asn Tyr Thr Thr Lys Asp Ile Ile Gln Cys Gln Leu
 465 470 475 480
 Tyr Ala Glu Arg Ser Ser Tyr Asp Ile Asn Ile Ser Asp Glu Glu Trp
 485 490 495
 Glu Arg Arg Lys Gln Arg Glu Lys Ser Asn Leu Ala Tyr Ile Lys Glu
 500 505 510
 Glu Met Asp His Ser Pro Leu Phe Ile Arg Trp Glu Tyr Gly Glu Asn
 515 520 525
 Pro Asn Gln Leu Asp Asp Asn Tyr Ile Asn Val Arg Asn Ala Gln Arg
 530 535 540
 Asp Glu Phe Lys Gln Val Ile Tyr Ser Ser Leu Ser Asn Lys Tyr Ile
 545 550 555 560
 Glu Leu Phe Gly Phe Gln Leu Lys Glu Gly Arg Leu Trp Asn Asp Ser
 565 570 575
 Val Asp Gln Trp Thr Asp Tyr Lys Met Ile Ile Asn Glu Ser Ala Lys
 580 585 590
 Ser Leu Leu Glu Ile Asp Asn Ile Glu Thr Ala Leu Ile Gln Pro Glu
 595 600 605
 Arg Arg Leu Trp Trp Ser Leu Ser Lys Ser Glu Glu Met Lys Lys Asn


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      610              615              620
Pro Pro Tyr Gln Val Ile Gly Val Ile Lys Asp Phe Lys Ile Gly His
625              630              635              640
Leu Ser Lys Thr Thr Pro Pro Leu Phe Ile Val Tyr Glu Asp Pro Arg
      645              650              655
Gly Ser Tyr Arg Asp Arg Leu Met Ala Gln Ile Val Pro Gly Lys Lys
      660              665              670
Gln Glu Ala Ile Ala Phe Leu Lys Lys Leu Arg Asp Glu Ile Leu Gly
      675              680              685
Glu Gly Glu Phe Glu Tyr Ser Phe Leu Glu Asp Glu Ile Ala Thr Met
      690              695              700
Tyr Gln Glu Asp Lys Arg Thr Ala Glu Ile Tyr Ser Leu Phe Ser Ile
705              710              715              720
Ile Ala Ile Leu Ile Ser Cys Leu Gly Leu Phe Gly Leu Ser Met Phe
      725              730              735
Asp Ile Arg Gln Arg Tyr Arg Glu Ile Ala Leu Arg Lys Val Asn Gly
      740              745              750
Ala Thr Leu Lys Glu Ile Tyr Pro Leu Leu Leu Lys Lys Tyr Ser Ile
      755              760              765
Ile Leu Gly Met Ala Phe Ile Ile Ser Ala Pro Leu Ser Trp Tyr Ile
      770              775              780
Ile Ser Lys Tyr Leu Glu Gly Phe Ala Asn Lys Ala Pro Ile Ser Trp
785              790              795              800
Trp Leu Phe Ala Ile Ala Ala Ile Val Thr Ala Phe Ile Ser Leu Ala
      805              810              815
Thr Leu Ile Trp Gln Ile Arg Lys Ala Ala Asn Ile Asn Pro Ala Lys
      820              825              830
Val Leu Lys Gly Glu
      835

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<210> 8218
<211> 85
<212> PRT
<213> B.fragilis

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<400> 8218
Glu Thr Ser Lys Ser Gln Pro Ile Leu Phe Ser Tyr Asp Thr Ala His
1              5              10              15
Ser Ser Leu Glu Val Thr Ser Thr Val Cys Pro Val Pro Thr Phe Thr
      20              25              30
Ser Asp Ser Glu Asp Leu Phe Thr Glu Arg Ala Asp Ala Pro Ala Ala
      35              40              45
His Leu Asn Trp His Leu Thr Ile Phe Pro Ala Leu Ser Val Thr Ser
      50              55              60
Thr Leu Gly Ala Asn Gly Val Gly Asn Gly Leu Arg Ala Ile Ser Ser
65              70              75              80
Leu Met Glu Asn Ala
      85

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<210> 8219
<211> 148
<212> PRT
<213> B.fragilis

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<400> 8219
Asn Tyr Ile Asp Met Lys Leu Ile Ile Tyr Asn Ser Arg Leu Ala Lys
1              5              10              15
Arg Met Leu Phe Pro Gly Tyr Ser Thr Ile Met Leu Phe Gly Ile Ile
      20              25              30

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<210> 8220
<211> 456
<212> PRT
<213> B.fragilis
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Tyr 1	Asn	Met	Asp	Gln 5	Leu	Gly	Lys	Ile	Leu 10	Ile	Val	Gly	Asp	Asn 15	Glu
Asp	Val	Leu	Phe 20	Ala	Leu	Asn	Leu	Leu 25	Leu	Glu	Pro	Tyr	Thr 30	Glu	Lys
Ile	Lys 35	Val	Ala	Thr	Thr	Pro	Asp 40	Arg	Ile	Glu	His	Phe 45	Met	Thr	Thr
Phe 50	Gly	Pro	Asp	Ile	Ile	Leu 55	Leu	Asp	Met	Asn	Phe 60	Ser	Arg	Asp	Ala
Ile 65	Ser	Gly	Gln	Glu	Gly 70	Phe	Glu	Ser	Leu	Glu 75	Gln	Ile	Leu	Lys	Ile 80
Asp	Pro	Gln	Ala	Ile 85	Val	Ile	Phe	Met 90	Thr	Ala	Tyr	Ala	Asp 95	Thr	Asp
Lys	Ala	Val	Arg 100	Ala	Ile	Lys	Ala	Gly 105	Ala	Thr	Asp	Phe	Ile 110	Pro	Lys
Pro	Trp	Glu	Lys 115	Glu	Lys	Leu	Leu	Ala 120	Thr	Leu	Ser	Ser	Gly 125	Met	Lys
Leu	Arg 130	Gln	Ser	Arg	His	Glu 135	Val	Asn	Met	Leu	Lys 140	Glu	Gln	Val	Glu
Val 145	Leu	Ser	Gly	Gln	Gly 150	Gly	Pro	Glu	Asn	Glu 155	Ile	Ile	Gly	Glu	Ser 160
Glu	Ala	Met	Gln 165	Glu	Val	Phe	Ser	Thr	Ile 170	Asn	Lys	Leu	Ser	Glu	Thr 175
Asp	Ala	Asn	Ile 180	Leu	Ile	Leu	Gly	Glu 185	Asn	Gly	Thr	Gly	Lys 190	Asp	Val
Ile	Ala 195	Arg	Leu	Leu	Tyr	Arg	Cys 200	Ser	Pro	Arg	Tyr	Gly 205	Lys	Pro	Phe
Val 210	Thr	Ile	Asp	Leu	Gly	Ser	Ile 215	Pro	Glu	Gln	Leu 220	Phe	Glu	Ser	Glu
Leu 225	Phe	Gly	Tyr	Glu	Lys 230	Gly	Ala	Phe	Thr	Asp 235	Ala	Arg	Lys	Ala	Lys 240
Ala	Gly	Arg	Met 245	Glu	Val	Ala	Thr	Gly	Gly 250	Thr	Leu	Phe	Leu	Asp 255	Glu
Ile	Gly	Asn 260	Leu	Ser	Leu	Pro	Met 265	Gln	Ser	Lys	Leu	Leu	Thr 270	Ala	Ile
Glu	Lys 275	Arg	Gln	Ile	Ser	Arg	Leu 280	Gly	Ser	Thr	Gln	Ser	Val	Pro	Ile

Asp Val Arg Leu Ile Cys Ala Thr Asn Ala Asp Ile Arg Ala Met Val
 290 295 300
 Asp Glu Gly Asn Phe Arg Gln Asp Leu Leu Tyr Arg Ile Asn Thr Ile
 305 310 315 320
 Glu Ile His Ile Pro Leu Arg Glu Arg Gly Asn Asp Val Ile Leu
 325 330 335
 Leu Ala Glu Phe Phe Leu Glu Arg Tyr Ala Arg Lys Tyr Lys Lys Glu
 340 345 350
 Met His Gly Leu Thr Arg Glu Ala Lys Asn Lys Leu Leu Lys Tyr Asn
 355 360 365
 Trp Pro Gly Asn Val Arg Glu Leu Gln His Thr Ile Glu Arg Ala Val
 370 375 380
 Ile Leu Gly Asp Gly Ser Leu Leu Lys Pro Glu Asn Phe Leu Phe His
 385 390 395 400
 Ser Ser Val Arg Gln Lys Lys Glu Glu Glu Val Leu Asn Leu Glu Leu
 405 410 415
 Leu Glu Arg Gln Ala Val Glu Lys Ala Met Arg Leu Ser Glu Gly Asn
 420 425 430
 Ile Thr Arg Ala Ala Glu Tyr Leu Gly Ile Thr Arg Phe Ala Leu Tyr
 435 440 445
 Arg Lys Leu Glu Lys Leu Gly Leu
 450 455

<210> 8221
 <211> 495
 <212> PRT
 <213> B.fragilis

<400> 8221
 Lys Lys Lys Cys Thr Met Asn Leu Lys Thr Ile Leu Ile Ile Ala Gly
 1 5 10 15
 Cys Ser Tyr Ile Phe Pro Ala Thr Ala Gln Glu Arg Thr Met Glu Leu
 20 25 30
 Ser Leu Asp Glu Thr Val Lys Leu Ala Lys Leu Gln Ser Pro Asp Ala
 35 40 45
 Gln Thr Ala Arg His Ser Phe Arg Ser Ala Tyr Trp Asn Tyr Lys Tyr
 50 55 60
 Tyr Arg Ala Asn Tyr Leu Pro Ala Leu Ser Leu Thr Ser Asp Pro Asn
 65 70 75 80
 Leu Asn Arg Ala Ile Asn Lys Val Thr Leu Gly Asp Gly Thr Val Lys
 85 90 95
 Phe Val Glu Gln Asn Met Leu Ser Thr Asp Leu Thr Leu Asn Leu Thr
 100 105 110
 Gln Asn Ile Pro Trp Thr Gly Gly Ser Leu Phe Val Glu Thr Ala Ala
 115 120 125
 Gln Arg Met Asp Ile Phe Ser Asp His Thr Thr Ala Trp Gln Thr Ser
 130 135 140
 Pro Ile Asn Ile Gly Tyr Arg Gln Ser Leu Phe Gly Tyr Asn Ser Leu
 145 150 155 160
 Lys Trp Asp Arg Arg Ile Glu Pro Val Arg Tyr Arg Glu Ala Lys Lys
 165 170 175
 Ser Tyr Val Glu Thr Leu Glu Leu Val Ala Thr Arg Ala Thr Gln Lys
 180 185 190
 Phe Phe Asn Leu Ala Thr Ala Gln Ser Asn Tyr Glu Thr Ala Thr Thr
 195 200 205
 Asn Tyr Ala Asn Ala Asp Thr Leu Tyr Gln Tyr Ala Gln Gly Arg Tyr
 210 215 220
 Asn Ile Gly Thr Ile Thr Glu Asn Glu Met Leu Gln Leu Glu Leu Asn
 225 230 235 240

Lys Leu Thr Glu Glu Thr Asn Arg Met Asn Ala Arg Ile Glu Met Asp
 245 250 255
 Asn Cys Met Gln Glu Leu Arg Ser Tyr Leu Gly Ile Gln Ser Asp Glu
 260 265 270
 Glu Leu Lys Val Lys Ile Asn Asp His Val Pro Asp Phe Ser Val Glu
 275 280 285
 Leu His Glu Ala Leu Leu Leu Ala Asn Glu Asn Ser Pro Glu Ile Gln
 290 295 300
 Asn Met Ile Arg Arg Lys Leu Glu Ser Glu Ser Asn Val Ser Tyr Ala
 305 310 315 320
 Arg Ala Asn Ala Gly Leu Lys Ala Asp Ile Tyr Leu Arg Phe Gly Leu
 325 330 335
 Thr Gln Thr Ala Asp Lys Leu Gly Ser Ala Tyr Lys Arg Pro Leu Asp
 340 345 350
 Gln Gln Tyr Val Ser Leu Ser Val Ala Leu Pro Ile Leu Asp Trp Gly
 355 360 365
 Arg Gly Lys Gly Lys Val Arg Val Ala Arg Ser Asn Arg Asp Leu Val
 370 375 380
 Tyr Thr Gln Val Glu Gln Asp Lys Thr Asp Phe Glu Leu Asn Ile Arg
 385 390 395 400
 Lys Leu Val Lys Gln Phe Asn Leu Gln Ala Gln Arg Val Arg Ile Ala
 405 410 415
 Ala Arg Thr Asp Glu Thr Ala Gln Arg Arg Ser Asp Val Ala Arg Lys
 420 425 430
 Leu Tyr Leu Leu Gly Lys Ser Thr Ile Leu Asp Leu Asn Ala Ser Ile
 435 440 445
 Thr Glu Lys Asp Gln Ala Arg Arg Asn Tyr Ile Thr Ala Leu Tyr Asn
 450 455 460
 Tyr Trp Ser Leu Tyr Tyr Thr Leu Arg Ser Leu Thr Leu Phe Asp Phe
 465 470 475 480
 Glu Gly Lys Thr Pro Leu Thr Glu Asn Tyr Asp Leu Leu Ile Asp
 485 490 495

<210> 8222

<211> 153

<212> PRT

<213> B.fragilis

<400> 8222

His Asp Cys Arg Ile Pro Arg Lys Gln His Ala Phe Cys Lys Pro Ala
 1 5 10 15
 Val Ile Asn Asn Lys Phe His Val Asp Val Ile Leu Met Val Ala Ala
 20 25 30
 Lys Phe Ala Tyr Ser Phe Gln Gly Val Lys Asp Ile Leu Val Leu Met
 35 40 45
 Glu Leu Gly Lys Tyr Pro Gly Arg Gly Val Lys Ala Lys Arg Ile Lys
 50 55 60
 Thr Val Glu Ile Asn His Leu Ile Asn Tyr Lys Tyr Gly Lys Ser Lys
 65 70 75 80
 Leu Val Gln Cys Lys Pro His Val Gly Gln Glu Arg Trp Arg Phe Asp
 85 90 95
 Asn Gln Cys Gly Cys Ser His Arg Thr Cys Ser Thr Lys Tyr Ser Ser
 100 105 110
 Tyr Arg Asn Ser Gly Lys Arg Asn Glu Thr Leu Ser Gln Tyr Ser Gly
 115 120 125
 Ile Ser Gly Arg Cys Arg Gly Ile His Asn His Gly Tyr Lys Gln Thr
 130 135 140
 Gly Pro Ser Leu Phe Arg Arg Ser Arg
 145 150

<210> 8223
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8223
 His Asp Cys Arg Ile Pro Arg Lys Gln His Ala Phe Cys Lys Pro Ala
 1 5 10 15
 Val Ile Asn Asn Lys Phe His Val Asp Val Ile Leu Met Val Ala Ala
 20 25 30
 Lys Phe Ala Tyr Ser Phe Gln Gly Val Lys Asp Ile Leu Val Leu Met
 35 40 45
 Glu Leu Gly Lys His Leu Gly Arg Gly Val Lys Ala Lys Arg Ile Lys
 50 55 60
 Asn Ser Arg Asn His Leu Ile Asn Tyr Asp
 65 70

<210> 8224
 <211> 212
 <212> PRT
 <213> B.fragilis

<400> 8224
 Ile Thr Ile Ser Met Ala Lys Ala Ser Trp Cys Asn Val Ser Pro Met
 1 5 10 15
 Ser Gly Ser Glu Asn Gly Thr Leu Thr Ile Ser Ala Ala Ala His Ala
 20 25 30
 Gly Arg Glu Ala Arg Ser Thr Thr Val Thr Val Thr Ala Lys Asn Gly
 35 40 45
 Thr Lys Pro Ser Ala Ser Ile Ala Val Ser Gln Ala Gly Val Gly Val
 50 55 60
 Gln Leu Thr Met Asp Thr Ser Lys Pro Asp Leu Pro Gly Glu Gly Gly
 65 70 75 80
 Ser Val Thr Ile Asn Gly Asn Ser Asn Ser Pro Thr Leu Lys Ile Ser
 85 90 95
 Val Pro Leu Ile Asn Phe Pro Gly Val Thr Ala Ser Ala Lys Phe Asn
 100 105 110
 Ala Pro Gly Ile Thr Asp Lys Val Leu Ala Ala Ser Glu Thr Val Thr
 115 120 125
 Ile Pro Gly Asp Pro Gly Ala Asn Gly Ser Tyr Ala Phe Ser Ile Lys
 130 135 140
 Leu Glu Ile Ala Arg Asn Pro Leu Pro Thr Pro Leu Ala Pro Asn Val
 145 150 155 160
 Asp Val Thr Asp Ser Ala Gly Lys Met Val Arg Cys Gln Phe Lys Trp
 165 170 175
 Ala Ala Gly Ala Ser Ala Leu Ser Val Asn Lys Ser Ser Leu Ser Leu
 180 185 190
 Val Asn Val Gly Thr Gly Gln Thr Val Asp Val Thr Ser Asn Asp Glu
 195 200 205
 Trp Ala Val Ser
 210

<210> 8225
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8225

Leu Lys His Ser Glu Pro Thr Ile Cys Asn Gly Val Tyr Ile Ile Ile
 1 5 10 15
 Asn Lys Arg Lys Glu Ile Gly Leu Met Asn Thr Glu Lys Glu Lys Thr
 20 25 30
 Ser Ser Glu Glu Gln Lys Lys Ala Glu Lys Val Leu Lys Asp Lys Val
 35 40 45
 Pro Val Gln Gln Thr Gly Thr Tyr Ser Glu Ala Thr Lys Lys Glu Val
 50 55 60
 Arg Asp Ala Val Lys Glu Leu Asn Pro Asp Met Ser Gly Leu Asp Arg
 65 70 75 80
 Gly

<210> 8226

<211> 434

<212> PRT

<213> B.fragilis

<400> 8226

Pro Ala Asp Arg Leu Thr Gly Ile Ile Asn Cys Lys Ser Lys Lys Gln
 1 5 10 15
 Asn Asn Met Asp Ile Lys Ile Glu Lys Lys Pro Trp Tyr Ile Arg Tyr
 20 25 30
 Lys Phe Tyr Ile Ala Gly Gly Ile Ala Phe Val Ala Phe Leu Val Tyr
 35 40 45
 Val Ile Ile Leu Ser Ala Gly Pro Arg Lys Leu Arg Ile Glu Ser Glu
 50 55 60
 Asn Ile Gln Ile Ala Glu Val Lys Asp Asp Lys Phe Met Glu Tyr Val
 65 70 75 80
 Asp Val Glu Gly Leu Ile Gln Pro Ile Leu Thr Ile Lys Val Asn Thr
 85 90 95
 Arg Glu Ala Gly Ser Val Glu Arg Ile Ile Ala Glu Glu Gly Ser Leu
 100 105 110
 Leu Gln Lys Gly Asp Thr Ile Leu Thr Leu Ser Asn Pro Asp Leu Leu
 115 120 125
 Arg Ser Ile Glu Asp Gln Arg Asp Asp Trp Glu Lys Gln Arg Ile Thr
 130 135 140
 Tyr Gln Glu Lys Glu Ile Glu Met Glu Gln Lys Ser Leu Ser Leu Lys
 145 150 155 160
 Gln Gln Thr Leu Glu Thr Asn Tyr Glu Leu Ala Arg Leu Lys Lys Ser
 165 170 175
 Phe Thr Leu Asp Lys Glu Glu Phe Arg Met Gly Ile Lys Ser Lys Ala
 180 185 190
 Gln Leu Glu Val Ser Glu Asp Glu Tyr Asn Tyr Lys Val Lys Asn Ala
 195 200 205
 Glu Leu Gln Arg Glu Gly Leu Arg His Asp Ser Ala Val Thr Ile Ile
 210 215 220
 Arg Lys Asp Leu Ile Arg Thr Asp Met Glu Arg Glu Arg Lys Lys Tyr
 225 230 235 240
 Glu Arg Ala Thr Glu Arg Leu Gly Asn Leu Val Val Lys Ala Pro Ile
 245 250 255
 Ser Gly Gln Leu Ser Phe Val Lys Val Thr Pro Gly Gln Gln Val Gly
 260 265 270
 Ser Ser Glu Ser Ile Ala Glu Ile Lys Val Leu Asp Gln Tyr Lys Ile
 275 280 285
 His Thr Ser Leu Ser Glu Tyr Tyr Ile Asp Arg Ile Thr Thr Gly Leu
 290 295 300
 Pro Ala Thr Val Asn Tyr Gln Gly Lys Lys Tyr Pro Leu Arg Ile Thr
 305 310 315 320

Lys Val Val Pro Glu Val Lys Asp Arg Met Phe Asp Val Asp Leu Val
 325 330 335
 Phe Thr Gly Glu Met Pro Asp Asn Val Arg Val Gly Lys Ser Phe Arg
 340 345 350
 Val Gln Ile Glu Leu Gly Gln Pro Glu Gln Ala Ile Val Ile Pro Arg
 355 360 365
 Gly Asn Phe Tyr Gln Ala Thr Gly Gly Gln Trp Ile Tyr Lys Ala Asn
 370 375 380
 Ala Ser Arg Thr Lys Ala Val Arg Thr Pro Ile Thr Ile Gly Arg Gln
 385 390 395 400
 Asn Pro Gln Gln Tyr Glu Ile Thr Gly Gly Leu Glu Pro Gly Asp Tyr
 405 410 415
 Val Val Thr Thr Gly Tyr Asp Thr Phe Gly Glu Ala Glu Glu Leu Ile
 420 425 430
 Leu Lys

<210> 8227

<211> 429

<212> PRT

<213> B.fragilis

<400> 8227

Lys Thr Gly Leu Met Lys Arg Tyr Ser Ile Ser Val Val Leu His Ile
 1 5 10 15
 Leu Leu Leu Val Val Leu Ser Ile Gly Gly Tyr Leu Leu Phe Cys Tyr
 20 25 30
 Glu Leu Trp Phe Ser Thr Leu Ile Val Gly Ile Leu Leu Ile Ala Thr
 35 40 45
 Gly Val His Leu Tyr Ser Ile Gln Met Lys Leu Ala Gly Met Met Arg
 50 55 60
 Arg Leu Thr Asp Cys Ile Arg Phe Asn Asp Met Thr Gln Asn Phe Gln
 65 70 75 80
 Pro Pro Phe Lys Ser Lys Met Met Val Glu Leu Ala Asp Glu Leu Ser
 85 90 95
 Gln Thr Leu Arg Leu Phe Arg Gly Arg Leu Leu Glu Glu Glu Ile Lys
 100 105 110
 His Gln Tyr Thr Glu Asn Leu Leu Asn Lys Val Asp Thr Ala Val Val
 115 120 125
 Val Thr Asp Arg Ser Gly Arg Val Glu Trp Met Asn Arg Ala Ala Val
 130 135 140
 Ala Leu Val Gly Gln Glu Ser Arg Leu Pro Gln Glu Trp Leu Thr Thr
 145 150 155 160
 Ser Trp Asn Glu Thr Gln Val Val Arg Ile Arg Gln Gln Gly Ala Ser
 165 170 175
 Val Glu Met Ala Val Ser Cys Thr Leu Phe Ala Ala Gln Asn Lys Glu
 180 185 190
 Arg Leu Leu Val Ser Leu Lys Asn Ile His Ser Val Leu Glu Arg Asn
 195 200 205
 Glu Met Glu Ala Trp Gln Lys Leu Ile Arg Val Leu Thr His Glu Ile
 210 215 220
 Met Asn Ser Ile Thr Pro Ile Ile Ser Leu Ser Glu Thr Leu Ser Glu
 225 230 235 240
 Arg Gly Ile Pro Glu Arg Leu Ser Glu Lys Glu Tyr Gly Val Met Leu
 245 250 255
 Gln Ala Met Gln Thr Ile His Arg Arg Ser Lys Gly Leu Leu Gly Phe
 260 265 270
 Val Glu Asn Tyr Arg Arg Leu Thr Arg Ile Pro Thr Pro Ala Arg Thr
 275 280 285

8227
 429
 PRT
 B.fragilis
 8227

Leu Val Ala Val Asp Glu Leu Phe Ser Asp Leu Arg Lys Leu Phe Pro
 290 295 300
 Asp Ser Phe Ile His Phe Ala Ala Thr His Arg Gly Ala Thr Leu Tyr
 305 310 315 320
 Ile Asp Arg Ala Gln Ile Glu Gln Val Leu Ile Asn Leu Ile Lys Asn
 325 330 335
 Ala Lys Glu Ser Cys Gly Gln Asn Thr Ala Pro Gln Ile Glu Val Glu
 340 345 350
 Leu Glu Gln Val Pro Gly Lys Val Cys Ser Leu Thr Val Arg Asp Asn
 355 360 365
 Gly Glu Gly Ile Leu Pro Glu Val Ile Asp Lys Val Phe Val Pro Phe
 370 375 380
 Phe Thr Thr Lys Pro Ser Gly Ser Gly Ile Gly Leu Ser Leu Cys Lys
 385 390 395 400
 Gln Ile Met Asn Leu His Gly Gly Thr Ile Thr Val Ser Ser Glu Ile
 405 410 415
 Gly Lys Gly Ser Cys Phe Thr Leu Met Phe Pro Gly Arg
 420 425

<210> 8228

<211> 417

<212> PRT

<213> B.fragilis

<400> 8228

Val Phe Ile Met Ala Ser Ile Lys Leu Tyr Phe Asp Lys Arg Val Asn
 1 5 10 15
 Arg Lys Asp Gly Lys Phe Pro Leu Lys Ile Asn Val Thr His Lys Arg
 20 25 30
 Gln Gln Ala Leu Ile Asn Leu Gly Val Leu Leu Ser Pro Asp Gln Trp
 35 40 45
 Asp Ser Thr Lys Gly Lys Val Ile Asn Gly Pro Asn Lys Ser Phe Leu
 50 55 60
 Asn Gly Tyr Ile Ser Gln Arg Val His Cys Ala Glu Thr Glu Leu Leu
 65 70 75 80
 Asn Leu Arg Ile Ala Gly Lys Leu Asp Leu Met Thr Gly Lys Gln Phe
 85 90 95
 Lys Glu His Leu Gln Arg Ile Leu Leu Arg Gly Lys Leu Glu Glu Lys
 100 105 110
 Gln Glu Glu Thr Gly Cys Ser Phe Val Gln Tyr Tyr Thr Arg Phe Val
 115 120 125
 Glu Gly Lys Lys Asn Pro Gln Thr Lys Ala Val Tyr Gln Tyr Thr Leu
 130 135 140
 Asp Arg Ile Cys Arg Phe Val Asp Val Pro Asp Lys Phe Arg Phe Glu
 145 150 155 160
 Asp Val Thr Tyr Ala Trp Leu Lys Ser Phe Glu Ile His Leu Ser Glu
 165 170 175
 Thr Ser Lys Val Asn Ser Ile Ser Ile His Met Arg Asn Ile Arg Ala
 180 185 190
 Val Phe Asn Asp Ala Leu Asn Thr Glu Thr Ile Ser Cys Tyr Pro Phe
 195 200 205
 Arg Arg Phe Lys Ile Lys Gln Glu Ala Thr Ala Lys Arg Ala Leu Thr
 210 215 220
 Pro Glu Glu Leu Val Thr Leu Arg Asp Tyr Pro Cys Glu Glu His Gln
 225 230 235 240
 Lys Gln Tyr Val Asp Ile Phe Met Leu Ile Phe Tyr Leu Val Gly Ile
 245 250 255
 Asn Thr Val Asp Leu Cys Arg Leu Glu Lys Ile Arg Asn Gly Arg Ile
 260 265 270

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Glu Tyr Arg Arg Ala Lys Thr Lys Lys Ile Tyr Asn Ile Lys Val Glu
 275 280 285
 Pro Glu Ala Ala Glu Ile Ile Glu Arg Tyr Lys Gly Ser Lys Tyr Leu
 290 295 300
 Leu Asn Ile Leu Glu Arg Tyr Lys Asn Tyr Lys Asp Tyr Ala His Arg
 305 310 315 320
 Leu Asn Glu Asn Leu Gln Glu Ile Gly Ser Val Glu Leu Val Glu Lys
 325 330 335
 Val Ile Asn Gly Lys Arg Arg Arg Val Lys Lys Arg Phe Pro Leu Phe
 340 345 350
 Pro Glu Leu Thr Val Tyr Trp Ala Arg His Thr Trp Ala Thr Ile Ala
 355 360 365
 His Lys Ile Gly Val Ser Lys Asp Val Ile Ser Leu Ala Leu Gly His
 370 375 380
 Glu Phe Gly Cys Lys Thr Thr Ser Ile Tyr Ile Asp Tyr Asp Met Glu
 385 390 395 400
 Lys Val Asp Lys Ala Asn Arg Gln Val Leu Asp Tyr Leu Glu Asn Leu
 405 410 415
 Lys

<210> 8229
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 8229
 Ile Thr Ser Met Ala Lys Ala Ser Trp Cys Asn Val Ser Pro Met Ser
 1 5 10 15
 Gly Lys Arg Asp Gly Val Leu Thr Ile Ser Ala Gly Ala His Thr Gly
 20 25 30
 Arg Val Ala Arg Asn Thr Val Val Thr Val Thr Ala Ala Asn Gly Thr
 35 40 45
 Arg Pro Ser Ala Ser Ile Ala Val Ser Gln Ala Gly Ala Gly Val Ser
 50 55 60
 Thr Thr Met Asp Thr Ser Lys Pro Asp Leu Pro Ser Ser Gly Gly Val
 65 70 75 80
 Val Asn Ile Asn Gly Thr Ser Asn Ser Ser Lys Leu Lys Trp Thr Cys
 85 90 95
 Thr Ala Arg Val Met Gly Val Asp Met Pro Ile Asp Gly Asn Tyr Val
 100 105 110
 Lys Val Ala Val Asn Gly Gly Asn Ile Gly Asn Asn Val Ala Ile Pro
 115 120 125
 Gly Asp Pro Gly Ala Ser Gly Arg Phe Asn Phe Val Ala Thr Leu Thr
 130 135 140
 Phe Pro Ala Ser Met Phe Pro Val Asp Ala Val Val Thr Phe Arg Leu
 145 150 155 160
 Thr Asp Asp Thr Asn Ser Ala Lys Gln Cys Thr Phe Thr Trp Lys Ala
 165 170 175
 Gly Ala Ser Ser Leu Ser Val Asn Lys Ser Ser Leu Ser Leu Val Asn
 180 185 190
 Gly Gly Thr Gly Gln Thr Val Asn Val Thr Ser Asn Asp Asp Trp Asn
 195 200 205
 Val Ser
 210

<210> 8230
 <211> 125
 <212> PRT

<213> B.fragilis

<400> 8230

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Ile Lys Leu Val Leu Ile Ile His Thr Lys Asn Val Ile Met Lys Lys
1           5           10           15
Val Leu Val Ala Leu Thr Met Val Met Gly Met Gly Ser Ala Val Ala
          20           25           30
Phe Ala Gln Glu Pro Val Lys Leu Pro Ala Met Glu Gln Asn Gln Gln
          35           40           45
Thr Ser Gln Asp Lys Phe Thr Lys Ile Thr Val Lys Glu Leu Pro Gln
          50           55           60
Val Val Lys Ser Thr Leu Ser Lys Asp Tyr Glu Gly Thr Ile Val Lys
65           70           75           80
Glu Ala Phe Val Ala Glu Lys Glu Asn Gly Lys Val Tyr Lys Ile Ile
          85           90           95
Val Thr Ala Ile Lys Glu Asp Gln Ser Thr Glu Glu Ile Thr Val Leu
          100          105          110
Leu Asn Glu Lys Gly Glu Pro Val Asn Glu Lys Asp Cys
          115          120          125

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<210> 8231

<211> 229

<212> PRT

<213> B.fragilis

<400> 8231

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Asn Leu Pro Ser Lys Pro Asn Leu Pro Pro Ser Val Lys Glu Gln Ala
1           5           10           15
Asp Asp Glu Ala Ile Arg Val Phe Thr Glu Asn Leu Arg Gln Leu Leu
          20           25           30
Leu Ala Pro Pro Leu Gly Gln Lys Arg Val Met Gly Ile Asp Pro Gly
          35           40           45
Phe Arg Thr Gly Cys Lys Val Val Cys Leu Asp Ala Gln Gly Asn Leu
          50           55           60
Val His Asn Glu Asn Ile Tyr Pro His Pro Pro Val Asp Lys Lys Thr
65           70           75           80
Glu Ala Ala Ser Lys Leu Arg Lys Met Ile Glu Ala Tyr Lys Ile Glu
          85           90           95
Ala Ile Ala Ile Gly Asn Gly Thr Ala Ser Arg Glu Thr Glu Asn Phe
          100          105          110
Val Thr His Gln Gln Phe Asp Arg Pro Val Gln Val Phe Val Val Ser
          115          120          125
Glu Gln Gly Ala Ser Ile Tyr Ser Ala Ser Lys Thr Ala Arg Asp Glu
          130          135          140
Phe Pro Asp Tyr Asp Val Thr Val Arg Gly Ala Val Ser Ile Ala Arg
145          150          155          160
Arg Leu Met Asp Pro Leu Ala Glu Leu Val Lys Ile Ala Pro Lys Pro
          165          170          175
Ile Gly Val Gly Gln Tyr Gln His Asp Val Asp Gln Thr Lys Leu Lys
          180          185          190
Lys Ser Leu Asp Gln Thr Val Glu Asn Cys Gly Met Ser Glu Thr Thr
          195          200          205
Lys Gly Ser Val Ile Lys Lys Arg Ile Leu Ala Ile Phe Leu Arg His
          210          215          220
Tyr Ser Ala Asn Gly
225

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<210> 8232

<211> 982

<212> PRT

<213> B.fragilis

<400> 8232

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Phe Glu Thr Ser Asn Leu Met Lys Gln Asn Thr Phe Ile Tyr Ala Ala
1      5      10      15
Ile Ala Phe Phe Val Cys Ser Ser Cys Thr Ser Gly Lys Tyr Ser Pro
20      25      30
Val Asp Tyr Val Asp Pro Phe Ile Gly Thr Gly Phe His Gly His Thr
35      40      45
Tyr Pro Gly Ala Thr Val Pro Phe Gly Ala Val Gln Leu Ser Pro Asp
50      55      60
Thr Arg Ala Gly Asn Trp Asp Ala Cys Ala Gly Tyr His Tyr Asp Asp
65      70      75      80
Thr Thr Leu Lys Gly Phe Ser His Thr His Leu Ser Gly Thr Gly Cys
85      90      95
Ile Asp Leu Gly Asp Ile Leu Phe Arg Pro Thr Thr Leu Lys Pro Asp
100     105     110
Leu Thr Ala Glu Ser Ile Cys Arg Pro Ala Asn Phe Ser His Lys Asp
115     120     125
Glu Arg Ala Ser Ala Gly Tyr Ser Val Ile Leu Lys Gly Glu Gly
130     135     140
Ile Lys Ala Glu Leu Thr Ala Thr Thr His Thr Gly Met His Arg Tyr
145     150     155     160
Thr Phe Pro Ser Gly Lys Pro Val Thr Ile Ile Val Asp Leu Ala His
165     170     175
Leu Leu Asp Asn Glu Tyr Ile Tyr Glu Ala Glu Leu Glu Arg Thr Thr
180     185     190
Ser Asn Glu Ile Val Gly Met Arg Arg Thr Arg Gly Trp Thr Asp Asn
195     200     205
Gln Tyr Val Tyr Phe Ala Ala Gln Phe Ser Glu Pro Phe Gln Thr Val
210     215     220
Glu Phe Val Gln Asp Lys Lys Ile Val Ser Ala Glu Thr Lys Gln Val
225     230     235     240
Gly Thr Asp Leu Gln Ala Ile Leu Thr Phe Ala Asp Lys Asp Gly Glu
245     250     255
Pro Ile Ile Ala Lys Val Gly Leu Ser Leu Val Ser Val Asp Asn Ala
260     265     270
Arg Lys Asn Leu Ala Glu Glu Val Lys Asp Phe Asn Phe Asp Ala Val
275     280     285
Cys Ala Ala Ala Arg Asn Asp Trp Glu Gln Ala Leu Ser Ser Ile Thr
290     295     300
Val Glu Gly Gly Gly Thr Asp Asp Leu Lys Asn Phe Tyr Thr Ala Ile
305     310     315     320
Tyr His Ala Met Val Val Pro Asn Val Val Ser Asp Val Asn Gly Glu
325     330     335
Tyr Arg Arg His Asn Met Gln Ile Gly Gln Leu Pro Lys Gly Lys Met
340     345     350
Gln Tyr Ser Thr Phe Ser Leu Trp Asp Thr Phe Arg Ala Trp Asn Pro
355     360     365
Leu Met Thr Leu Ile Asp Thr Ala Leu Val Asn Asn Met Val Asn Ser
370     375     380
Tyr Leu Asp Ile Tyr Asp Ala Ser Gly Glu Leu Pro Ile Trp Pro Leu
385     390     395     400
Ser Ala Ala Glu Thr Gly Thr Met Ile Gly Tyr His Ser Val Ser Val
405     410     415
Ile Ala Asp Ala Tyr Leu Lys Gly Ile Arg Gly Phe Asp Ala Glu Lys
420     425     430
Ala Leu Asp Ala Met Lys Val Ser Ser Glu Lys Asn Lys Lys Gly Ala

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435				440				445							
Asp	Tyr	Tyr	Ile	Lys	Tyr	Gly	Phe	Ile	Pro	Ser	Asn	Ile	Lys	Lys	Glu
450						455					460				
Ser	Ile	Ser	Cys	Leu	Leu	Glu	Phe	Ala	Tyr	Asp	Asp	Trp	Cys	Ile	Ala
465						470				475					480
Arg	Met	Ala	Gln	Glu	Met	Gly	Lys	Glu	Asp	Val	Tyr	Arg	Lys	Tyr	Ile
					485				490						495
Glu	Arg	Ser	Gln	Asn	Tyr	Ile	Asn	Val	Phe	Asp	Gly	Ser	Thr	Lys	Phe
			500					505					510		
Phe	Arg	Gly	Lys	Arg	Met	Asp	Gly	Asn	Trp	Glu	Thr	Ser	Phe	Asn	Pro
		515					520					525			
Phe	Glu	Val	Gly	Arg	Ser	Tyr	Thr	Glu	Ala	Thr	Ala	Trp	Gln	Tyr	Arg
		530					535				540				
Phe	Ser	Val	Pro	Tyr	Asp	Val	Asn	Gly	Met	Val	Gln	Leu	Phe	Gly	Gly
545					550					555					560
Lys	Glu	Lys	Phe	Ile	Thr	Ala	Leu	Asp	Ser	Ile	Phe	Ile	Ala	Asp	Pro
					565				570						575
Asn	Val	His	Gly	Asp	Leu	Ala	Asp	Ile	Thr	Gly	Leu	Ile	Gly	Gln	Tyr
			580					585							590
Ala	His	Gly	Asn	Glu	Pro	Ser	His	Ile	Ala	Tyr	Leu	Tyr	Asp	Tyr	
		595					600				605				
Val	Gly	Gln	Pro	Trp	Lys	Thr	Gln	Glu	Met	Thr	Arg	His	Leu	Leu	Asp
		610					615				620				
Glu	Met	Tyr	Gln	Pro	Thr	Pro	Gly	Gly	Ile	Ser	Gly	Asn	Glu	Asp	Cys
625					630						635				640
Gly	Gln	Met	Ser	Ala	Trp	Tyr	Ile	Leu	Ser	Gly	Leu	Gly	Ile	Tyr	Ser
					645					650					655
Val	Cys	Pro	Gly	Ser	Asn	Glu	Phe	Ala	Leu	Thr	Thr	Pro	Leu	Phe	Glu
			660					665					670		
Lys	Ala	Val	Leu	Lys	Leu	Ala	Asn	Gly	Lys	Arg	Leu	Thr	Leu	Leu	Ala
		675					680					685			
Asn	Asp	Pro	Lys	Lys	Asn	Ile	Tyr	Ile	His	Lys	Val	Glu	Leu	Asn	Gly
		690				695					700				
Lys	Gln	Ile	Asp	Thr	Asn	Phe	Ile	Thr	Tyr	Ala	Gln	Leu	Met	Glu	Gly
705					710					715					720
Gly	Glu	Leu	Arg	Phe	Thr	Leu	Ser	Asp	Lys	Pro	Asp	Lys	Ser	Arg	Gly
					725				730						735
Ile	Ser	Glu	Glu	Ala	Ser	Pro	Tyr	Ser	Tyr	Thr	Lys	Glu	Lys	Val	Val
					740				745						750
Ser	Ile	Pro	Tyr	Val	Asp	Arg	Asp	Leu	Asn	Leu	Phe	Met	Asp	Lys	Val
		755					760								
Thr	Val	Ala	Leu	Ala	Thr	Thr	Thr	Glu	Gly	Ala	Glu	Leu	Arg	Tyr	Thr
		770					775								
Leu	Asp	Gly	Thr	Glu	Gln	Thr	Glu	Lys	Ser	Leu	Leu	Tyr	Asp	Lys	Pro
785					790					795					800
Phe	Arg	Val	Asp	Met	Val	Thr	Leu	Ile	Lys	Ala	Lys	Gly	Phe	Lys	Gln
					805					810					815
Gly	Phe	Arg	Pro	Ser	Arg	Thr	Leu	Ser	Ile	Ala	Ala	Thr	Ile	Ala	Glu
			820					825					830		
Leu	Lys	Gly	Ser	Leu	Pro	Val	His	Pro	Ser	Arg	Asn	Gly	Thr	Ser	Tyr
		835					840						845		
Lys	Tyr	Phe	Glu	Gly	Thr	Tyr	Gln	Lys	Val	Ala	Asp	Ile	Glu	Lys	Thr
		850					855				860				
Pro	Leu	Leu	Glu	Val	Gly	Val	Leu	Pro	Glu	Pro	Ser	Ile	Lys	Glu	Ala
865					870					875					880
Lys	Gln	Lys	Asp	His	Phe	Gly	Tyr	Ile	Phe	Ser	Gly	Leu	Ile	Asn	Val
					885					890					895
Pro	Glu	Asp	Gly	Val	Tyr	Ile	Phe	Gln	Thr	Arg	Ser	Asp	Asp	Gly	Ser
			900					905							910

Val Leu Tyr Ile Gly Asn Glu Leu Val Val Asn Asn Asp Gly Ala His
 915 920 925
 Ala Ala Ile Pro Asp Thr Gly Tyr Ile Ala Leu Glu Lys Gly Phe His
 930 935 940
 Pro Tyr Ile Leu Tyr Tyr Phe Glu Asp Tyr Glu Gly Glu His Leu Ser
 945 950 955 960
 Trp Phe Trp Lys Leu Pro Ser Ala Lys Glu Leu Ala Pro Ile Pro Thr
 965 970 975
 Ser Ala Leu Phe Val Lys
 980

<210> 8233
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8233
 Ser Met Arg Ser Thr Phe Lys Val Leu Phe Tyr Leu Lys Arg Asn Ala
 1 5 10 15
 Pro Lys Lys Asn Gly Leu Val Pro Val Met Tyr His Phe Ser Ile Tyr
 20 25 30
 Asp Asn Asn Thr Lys Leu Tyr Ser Arg Glu Gln Ser Arg Lys Glu Ala
 35 40 45
 Cys Ala Ile Asp Ile Arg Phe Leu Leu Asn Lys Lys
 50 55 60

<210> 8234
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 8234
 Lys Arg Leu Ser Met Lys Arg Asn Met Ser Arg Arg His Phe Leu Lys
 1 5 10 15
 Thr Gly Gly Leu Ala Leu Ala Ala Met Ala Met Cys Pro Pro Leu Ser
 20 25 30
 Phe Ala Ser Ser Glu Met Pro Val Gln Lys Tyr Ile Ser Leu Arg Pro
 35 40 45
 Pro Val Gly Lys Arg His Phe Val Ser Lys Ala Val Glu Ala Thr Ile
 50 55 60
 Glu Gln Thr Arg Pro Lys Ile Lys Asp Glu Lys Leu Arg Trp Met Phe
 65 70 75 80
 Glu Asn Cys Phe Pro Asn Thr Leu Asp Thr Thr Val Arg Tyr Lys Met
 85 90 95
 Lys Ala Gly Arg Ile His Ser Ser
 100

<210> 8235
 <211> 1054
 <212> PRT
 <213> B.fragilis

<400> 8235
 Thr Leu Asn Phe Glu Cys Met Lys Gln Val Asn Leu Arg Ile Tyr Gln
 1 5 10 15
 Thr Ile Leu Thr Leu Leu Val Gly Leu Phe Leu Ser Ala Gly Ala Tyr
 20 25 30
 Ala Gln Gln Ile Ser Val Arg Gly Ile Val Lys Asp Gln Met Gly Glu
 35 40 45

Pro Val Ile Gly Ala Asn Val Leu Val Lys Gly Thr Ser Asn Gly Val
 50 55 60
 Ile Thr Asp Ile Asp Gly Lys Phe Ala Leu Ser Ala Ala Lys Asn Asp
 65 70 75 80
 Ile Leu Ile Ile Ser Phe Val Gly Phe Met Ser Gln Glu Ile Pro Val
 85 90 95
 Thr Gly Lys Asp Leu Met Val Thr Leu Lys Glu Asp Thr Gly Leu Leu
 100 105 110
 Asp Glu Val Val Val Leu Gly Tyr Gly Ala Asn Ala Arg Lys Gln Asp
 115 120 125
 Leu Ser Ala Ala Val Gly Val Leu Ser Asn Thr Asp Asp Leu Thr Val
 130 135 140
 Arg Pro Val Ser Ser Thr Glu Ser Leu Leu Gln Gly Gln Leu Ala Gly
 145 150 155 160
 Val Thr Val Gln Ser Asn Gly Gly Asp Pro Thr Ser Thr Pro Ser Ile
 165 170 175
 Val Ile Arg Gly Gln Gly Ser Gln Asn Gly Asp Asn Val Leu Trp Val
 180 185 190
 Val Asp Gly Val Pro Gly Ala Pro Ile Ala Ser Met Ser Asp Ile Glu
 195 200 205
 Ser Ile Val Val Leu Lys Asp Ala Ala Ser Ala Ala Ile Tyr Gly Ala
 210 215 220
 Gln Ser Gly Ala Gly Gly Val Ile Leu Val Thr Thr Lys Lys Ala Lys
 225 230 235 240
 Ala Gly Ile Pro Thr Leu Ser Tyr Glu Gly Thr Tyr Gly Ile Arg Gln
 245 250 255
 Ala Thr Asn Leu Pro Glu Pro Leu Asn Ala Glu Glu Glu Leu Glu Met
 260 265 270
 Arg Lys Arg Ser Tyr Ala Asn Ala Asn Val Thr Leu Pro Asp Gly Trp
 275 280 285
 Asn Ile Glu Lys Asn Pro Trp Ile Gly Thr Thr Arg Thr Asn Trp Met
 290 295 300
 Asp Glu Ile Phe Arg Thr Ala Phe Tyr Gln Arg His Asn Ile Ala Leu
 305 310 315 320
 Asn Val Gly Thr Asp Asn Tyr Ser Ser Arg Leu Ser Phe Ser Phe Asp
 325 330 335
 Asn Asp Glu Gly Val Leu Ile Asn Thr Tyr Asn Lys Asn Tyr Ala Ile
 340 345 350
 Arg Tyr Asn Gly Lys Phe Asp Leu Asn Lys Trp Val Ser Ile Ser Glu
 355 360 365
 Asp Leu Val Trp Lys Asn Thr Glu Asn Arg Ser Lys Asp Thr Asn Asp
 370 375 380
 Ala Tyr Thr Gly Pro Val Leu Ser Ala Ile Tyr Met Pro Ala Ser Ala
 385 390 395 400
 Thr Val Tyr Asn Pro Leu Asp Gly Thr Trp Gly Gly Thr Thr Thr Glu
 405 410 415
 Asp Pro Glu Tyr Ile Ala Lys Tyr Gly Ser Asn Phe Ala Gly Ala His
 420 425 430
 Gly Asp Ala Val Asn Pro Val Arg Leu Leu Arg Ala Glu Asn Arg Phe
 435 440 445
 Asn Arg Thr Ser Asp Val Trp Ser Thr Thr Ser Leu Gln Ile Ala Asn
 450 455 460
 Ile Ile Gln Gly Leu Lys Phe Thr Ser Arg Phe Thr Tyr Asn Leu Lys
 465 470 475 480
 Thr Asn Asn Tyr Lys Asn Phe Arg Pro Ile Gln Asp Glu Pro Gly Lys
 485 490 495
 Pro Asn Asn Ser Asn Ser Leu Asp Val Thr Asn Tyr Arg Thr Asp Ala
 500 505 510
 Trp Lys Thr Glu Asn Thr Leu Thr Tyr Asp Asn Ser Phe Gly Asn His

	515		520		525
Thr	Val Gly Ala Leu Phe	Ser Thr Thr Ala Asp	His Tyr Asn Val Arg		
	530	535	540		
Gly	Leu Lys Val Asn Gly	Asn Phe Ala Asp	Glu Ser Pro Tyr Leu		
545		550	555		560
Gln	Tyr Leu Ala Tyr Ala	Gly Thr Thr Ser Ala	Thr Asp Tyr Leu Thr		
	565	570	575		
Gly	Pro Asp Ala Asn Val	Ser Leu Val Ala Arg	Leu Ala Tyr Ser Tyr		
	580	585	590		
Asp	Asp Arg Tyr Phe Val	Thr Ala Ser Trp Arg	Arg Asp Tyr Ala Gly		
	595	600	605		
Arg	Leu Pro Lys Glu Asn	Asn Phe Gly Asp Phe	Pro Ala Ala Thr Leu		
	610	615	620		
Ala	Trp Lys Ile Ser Asn	Glu Lys Phe Phe Lys	Lys Ser Asp Phe Ile		
625		630	635		640
Gly	Met Leu Lys Leu Arg	Ala Ser Trp Gly Arg	Val Gly Asn Leu Gly		
	645	650	655		
Ser	Ile Asp Tyr Asn Tyr	Lys Ser Leu Leu Leu	Gly Thr Ser Tyr Trp		
	660	665	670		
Gln	Glu Gln Ala Gln Tyr	Gly Val Ile Asn Asn	Ala Thr Trp Asn Asn		
	675	680	685		
Phe	Val Tyr Asn Ser Thr	Ala Met Asn Arg Asn	Leu Thr Trp Glu Thr		
	690	695	700		
Ser	Glu Gln Trp Asp Leu	Gly Leu Asp Val Glu	Phe Lys Asn Arg		
705		710	715		720
Leu	Ala Leu Ser Phe Asp	Tyr Phe Asp Lys Arg	Thr Phe Asn Leu Ile		
	725	730	735		
Gln	Lys Gln Thr Met Asn	Trp Pro Ser Ser Ile	Gly Leu Asp Pro Leu		
	740	745	750		
Leu	Ile Asn Gln Gly Glu	Ile Arg Asn Arg Gly	Ile Glu Ile Gln Ala		
	755	760	765		
Asn	Trp Asn Asp Arg Val	Asn Lys Asp Phe Ser	Tyr Phe Val Ser Gly		
	770	775	780		
Asn	Phe Ser Tyr Leu Lys	Asn Cys Val Ser Asp	Ile Gly Val Lys Asn		
785		790	795		800
Ala	Asp Gly Ser Pro Gly	Val Trp Thr Asp Ser	Asp Ser Lys Phe Arg		
	805	810	815		
Asn	Ile Pro Tyr Thr Arg	Gln Thr Ala Glu Gly	Glu Pro Leu Asn Ser		
	820	825	830		
Tyr	Tyr Leu Ile Lys Thr	Asp Gly Ile Phe Gln	Ser Asp Ala Glu Ala		
	835	840	845		
Ala	Ala Tyr Val Asp Lys	Asn Gly Lys Arg Ile	Gln Pro Asn Ala Val		
	850	855	860		
Ala	Gly Asp Leu Lys Phe	Ile Asp Tyr Asn Asn	Asp Gly Lys Ile Asp		
865		870	875		880
Asp	Lys Asp Arg Gln Tyr	Cys Gly Ser Ala Thr	Pro Lys Ile Thr Tyr		
	885	890	895		
Ser	Phe Ser Phe Gly Ala	Thr Tyr Lys Lys Phe	Ser Phe Ser Ala Met		
	900	905	910		
Phe	Gln Gly Val Gly Gly	Ala Gln Ala Phe Tyr	Ala Ala Lys Ser Val		
	915	920	925		
Ile	Leu Ser Asp Ala Asp	Gly Asn Phe Asn Arg	Val Lys Asp Ile Leu		
	930	935	940		
Asn	Ala Trp Ser Pro Thr	Asn Thr Ser Ser Asn	Ile Pro Arg Leu Ser		
945		950	955		960
Met	Asn Asp Pro Asn Ser	Asn Phe Ser Thr Ala	Ser Asp Trp Tyr Leu		
	965	970	975		
Glu	Ser Ala Ser Tyr Leu	Arg Leu Lys Asn Leu	Thr Leu Ser Tyr Asp		
	980	985	990		

Leu Thr Asp Val Leu Gln Lys Trp Ser His Leu Arg Glu Arg Asn Ser
 995 1000 1005
 Arg Met Ser Val Phe Phe Ser Gly Glu Asn Leu Phe Thr Ile Thr Asp
 1010 1015 1020
 Tyr Ser Gly Met Asp Pro Glu Cys Gly Gly Trp Asp Ala Met Lys Tyr
 1025 1030 1035 1040
 Pro Val Ser Arg Val Phe Ser Phe Gly Val Lys Leu Thr Tyr
 1045 1050

<210> 8236
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8236
 Phe Tyr Tyr Tyr His Ser Leu Ile Asn Leu Asn Tyr Val Tyr Tyr Cys
 1 5 10 15
 Ile Asn Phe Ser Phe Phe Leu Ser Val Asn Asn Val Gly Thr Val Ala
 20 25 30
 Ser Gly Ile Tyr Asn Val Met Pro Gln Cys Pro Ser Met Val Asn Pro
 35 40 45
 Pro Thr Leu Ser Gly Ile Lys Phe Ser Val Ala Ala Leu
 50 55 60

<210> 8237
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8237
 Tyr Phe Phe His Ile Cys Arg Leu Phe Asp Asn Tyr Ala Ala Leu Ser
 1 5 10 15
 Tyr Asn Glu Arg Glu Asn Asp Phe Ile Asn Ile Ile Ser Ile Tyr Asn
 20 25 30
 Thr Val Ser Tyr Phe Ile Ser His Leu Lys Met Phe Leu Ser Phe Phe
 35 40 45
 Ile Phe Arg Asn Lys Glu Lys Val Tyr Glu Cys Asn Thr Leu Ile Asn
 50 55 60
 Asn Thr Leu Leu Asn Ile Asp Ser Glu Thr Leu Ser Glu Thr
 65 70 75

<210> 8238
 <211> 250
 <212> PRT
 <213> B.fragilis

<400> 8238
 Cys Ile Ile Asn Gln Cys Ile Thr Phe Ile His Phe Phe Phe Val Ser
 1 5 10 15
 Glu Asn Lys Lys Thr Gln Lys His Phe Gln Met Gly Tyr Glu Val Thr
 20 25 30
 Tyr Cys Ile Ile Asn Ala Tyr Asn Ile Tyr Glu Val Ile Leu Pro Phe
 35 40 45
 Ile Ile Arg Lys Ser Arg Ile Ile Ile Lys Gln Thr Thr Asn Met Lys
 50 55 60
 Lys Ile Leu Cys Ile Trp Val Leu Thr Val Thr Phe Leu Gly Ala Phe
 65 70 75 80
 Pro Ala Leu Ala Asp Ala Gln Gln Trp Gly Leu Thr Ala Asn Gly Leu
 85 90 95

Tyr Trp Ala Thr Ala Thr Pro Asn Ile Gly Val Glu Tyr Ala Phe His
 100 105 110
 Ser Lys Met Ser Ile Ala Gly Leu Val Gln Tyr Asn Pro Phe Thr Tyr
 115 120 125
 Ala Lys Asn Arg Lys Met Lys His Leu Ala Gly Gln Leu Glu Tyr Arg
 130 135 140
 Tyr Trp Leu Ser Asp Val Phe Lys Gly His Tyr Leu Gly Val His Ala
 145 150 155 160
 Thr Gly Gly Ile Phe Asn Phe Gly Asn Leu Pro Leu Gly Ile Leu Lys
 165 170 175
 Asp Tyr Arg Leu Glu Gly Gln Leu Tyr Gly Gly Gly Leu Thr Tyr Gly
 180 185 190
 Tyr Gln Trp Ile Ile Ser Asn Arg Val Asn Ile Gly Val Asp Ile Gly
 195 200 205
 Leu Gly Tyr Leu Tyr Val Asp Tyr Asp Lys Phe Tyr Cys Pro Thr Cys
 210 215 220
 Gly Glu Arg Val Asp His Tyr Arg Thr Asn Tyr Leu Gly Pro Thr Lys
 225 230 235 240
 Val Gly Val Ser Ile Ile Tyr Leu Leu Lys
 245 250

<210> 8239

<211> 391

<212> PRT

<213> B.fragilis

<400> 8239

Glu Arg Asp Asn Leu Val Lys Val Met Ile Thr Met Lys Asn Ile Leu
 1 5 10 15
 Arg Asn Phe Val Phe Ile Val Trp Ala Val Ala Leu Leu Pro Val Asn
 20 25 30
 Val Ser Ala Gln Asn Arg Arg Asp Lys Glu Gln Thr Tyr Val Leu Glu
 35 40 45
 Gln Pro Tyr Glu Val Thr Lys Ile Thr Pro Ser Gln Gly Lys Lys Ile
 50 55 60
 Lys Asn Val Ile Leu Met Ile Gly Asp Gly Met Ser Leu Met His Val
 65 70 75 80
 Tyr Ser Ala Trp Thr Ala Asn Arg Gly Lys Leu Phe Leu Asp Asn Cys
 85 90 95
 Gln Ala Val Gly Leu Ser Lys Thr Tyr Cys Ala Asp Lys Leu Ile Thr
 100 105 110
 Asp Ser Gly Ala Gly Gly Thr Ala Ile Ala Ser Gly Gln Lys Thr Asn
 115 120 125
 Tyr His Tyr Val Gly Val Asp Thr Leu Gly His Pro Leu Lys Ser Leu
 130 135 140
 Val Asp Phe Ala Ala Ala Lys Gly Lys Ser Thr Gly Ile Ala Val Thr
 145 150 155 160
 Cys Arg Leu Trp Asp Ala Thr Pro Ala Asp Phe Cys Cys His Asn Lys
 165 170 175
 Asp Arg Asp Ala Glu Ser Glu Ile Val Thr Asp Tyr Val Asn Cys Asn
 180 185 190
 Ala Asp Tyr Val Phe Gly Gly Gly Ala Lys Leu Phe Glu Asn Arg Glu
 195 200 205
 Asp Gly Arg Asp Leu Phe Lys Glu Leu Arg Glu Lys Gly Phe Arg Thr
 210 215 220
 Pro Arg Ser Trp Asp Glu Leu Ala Gly Ile Lys Ser Gly Lys Val Phe
 225 230 235 240
 Ala Val Pro Tyr Pro Val Asp Thr Pro Leu Pro Ala Glu Arg Gly Asp
 245 250 255

Leu Leu Ala Arg Ala Ser Leu Lys Gly Ile Asp Leu Leu Asn Gln Asn
 260 265 270
 Lys Asn Gly Phe Phe Met Met Ile Glu Gly Ser Gln Leu Asp Asp Tyr
 275 280 285
 Gly His Phe Asn Asp Leu Asp Leu Leu Met Gln Glu Thr His Asp Phe
 290 295 300
 Asp Arg Thr Ile Gly Ala Ile Tyr Glu Trp Ala Ala Lys Asp Gly Glu
 305 310 315 320
 Thr Leu Val Val Val Thr Ala Asp His Glu Thr Gly Gly Leu Thr Leu
 325 330 335
 Val Asp Gly Asp Leu Lys Glu Gly Lys Ile Val Cys Lys Phe Ser Thr
 340 345 350
 Gly Gly His Ser Gly Val Met Val Pro Val Tyr Ala Phe Gly Pro Gly
 355 360 365
 Ala Gln Glu Phe Thr Gly Ile Tyr Glu Asn Thr Ala Ile Phe Asp Lys
 370 375 380
 Ile Lys Lys Leu Leu Asp Leu
 385 390

<210> 8240

<211> 98

<212> PRT

<213> B.fragilis

<400> 8240

Lys Pro Leu Asn Gly Tyr Ala Met Lys Leu Ser Ile Asp Leu Gly Gly
 1 5 10 15
 Thr Asn Val Arg Ile Ala Gln Val Glu Asn Gly Ile Cys Leu Asn Lys
 20 25 30
 Met Ser Val Pro Cys Leu Ala Gln Gln Asp Ala Ser Ala Val Leu Asp
 35 40 45
 Gln Leu Phe Gln Leu Ile Thr Gly Met Met Asn Val Gln Val Asp Gly
 50 55 60
 Ile Gly Ile Gly Val Pro Ser Ile Val Asp Val Glu Lys Gly Ile Val
 65 70 75 80
 Tyr Asn Val Ala Asn Ile Ser Ser Trp Lys Lys Ile His Leu Lys Asp
 85 90 95
 Ile Leu

<210> 8241

<211> 407

<212> PRT

<213> B.fragilis

<400> 8241

Thr Lys Leu Lys Leu Phe Leu Ser Phe Ile Leu Ile Leu Pro Asp Thr
 1 5 10 15
 Met Ile Arg Leu Ile Leu Leu Thr Asp Phe Thr Glu Ser Phe Ser Tyr
 20 25 30
 Asn Leu Leu Lys Gly Val Leu Ala Tyr Ser Lys Lys His Glu Pro Trp
 35 40 45
 Val Val Cys Arg Met Pro Pro Ser Tyr Lys Leu Thr Tyr Gly Ile Glu
 50 55 60
 Gly Val Leu Lys Trp Ala Lys Ala Trp Gln Ala Asp Ala Ile Ile Gly
 65 70 75 80
 Arg Phe Asp Asn Asp Asp Asn Val Glu Leu Phe Arg Lys Asn Gly Ile
 85 90 95
 Ile Ala Ile Ala Gln Asp Tyr Lys Ser Arg Phe Ser Asn Ile Pro Asn

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      100      105      110
Ile Thr Gly Asp Tyr His Lys Thr Gly Arg Met Ala Ala Glu Phe Phe
      115      120      125
Leu Ser Lys Gly Phe Arg Asn Phe Ala Phe Tyr Gly Tyr Arg Asp Thr
      130      135      140
Val Trp Ser Gln Glu Arg Cys Glu Gly Phe Tyr Glu Cys Ile Ala Glu
      145      150      155      160
His Gly Phe Gly Asn Asn Phe Tyr Ser Tyr Gln Glu Gln Ser Leu Asp
      165      170      175
Asp Leu Trp Phe Tyr Glu Ala Pro Pro Leu Leu Thr Trp Leu Lys Ser
      180      185      190
Leu Pro Gln Pro Thr Ala Leu Met Ala Cys Asp Asp Asn Gln Gly Asn
      195      200      205
Arg Ile Thr Glu Ile Cys Lys Val Asn Asn Ile Arg Val Pro Asp Lys
      210      215      220
Ile Ala Ile Leu Gly Val Asp Asn Asp Glu Ile Ile Cys Asn Leu Ser
      225      230      235      240
Asp Pro Pro Leu Ser Ser Ile Ser Gln Asn Ile Val Arg Gly Gly Phe
      245      250      255
Glu Ala Ala Glu Leu Ile Glu His Leu Leu Asn Asp Glu Glu Cys Ser
      260      265      270
Tyr Gln Asp Val Val Leu Gln Pro Val Asn Ile Val Asn Arg Leu Ser
      275      280      285
Thr Asp Phe Tyr Ser Thr Thr Asn Thr His Ile His Thr Ala Leu Lys
      290      295      300
Tyr Ile His Arg Asn Leu Ala Asn Asp Ile Thr Val Ser Asp Ile Val
      305      310      315      320
Lys Gln Val Pro Leu Ser Arg Arg Leu Leu Glu Ile Arg Phe Lys Glu
      325      330      335
Val Thr Lys Gln Ser Ile His Lys Tyr Ile Leu Asn Leu Arg Ile Glu
      340      345      350
Arg Phe Ala Gln Leu Leu Leu Ala Ser Asp Ala Pro Ile Ala Asp Val
      355      360      365
Ala Glu Gln Val Gly Ile Asn Asn Leu Lys Asn Leu Ser Arg Gln Phe
      370      375      380
Lys Thr Leu Lys Asn Val Ser Pro Tyr Glu Tyr Arg Lys Glu His Arg
      385      390      395      400
Met Met Ser Asn Asp Asn Tyr
      405

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<210> 8242

<211> 135

<212> PRT

<213> B.fragilis

<400> 8242

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Gln Arg Ser Lys Ile Ile Leu Leu Ile Phe Ser Ser Ile Val Thr Asn
1      5      10      15
Leu Ser Ser Ser Asn Pro Thr Thr Ser Arg Gly Ser Ser Ala Thr Pro
      20      25      30
Ile Tyr Arg Ser Pro Pro Ala Ser Leu Ala Asn Ala Thr Thr Val Leu
      35      40      45
Ala Lys Ser Glu Cys Ser Gly Asn Ser Ala Leu Asn Ser Asn Leu Arg
      50      55      60
Pro Ser Asp Trp Phe Ser Ile Ser Phe Met Phe Ile Leu Leu Leu Phe
      65      70      75      80
Cys Phe Val Ile Asn Leu Trp Gln Val Ile Glu Asn Leu Leu Asp Asp
      85      90      95
Lys Asp Arg Lys Arg Lys His Ser Phe Arg Ser Ile Phe Asn Val Ile

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100 105 110
 Phe Tyr Leu Val Lys Thr Gly Cys Gln Trp Arg Met Leu Pro Cys Asp
 115 120 125
 Phe Ala Leu Trp Asn Thr Val
 130 135

<210> 8243
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 8243
 Lys Asn Met Asn Ser Lys Tyr Leu Ser Leu Pro Lys Thr Lys Lys Tyr
 1 5 10 15
 Ile Gln Lys Lys Tyr Leu Gln Phe Lys Glu Ile Arg Asn Pro Lys Arg
 20 25 30
 Gln Thr Ile Tyr Phe Val Tyr Tyr Gly Thr Val Gly Cys Phe Ser Ile
 35 40 45
 Gly Ile Ile Ala Asp Leu Cys Val Tyr Leu Ile Arg Lys Asp Leu Leu
 50 55 60
 Leu Ala Leu Cys Asn Ile Leu Ser Leu Gly Leu Phe Leu Leu Phe Thr
 65 70 75 80
 Tyr Leu Leu Ile Arg Lys Lys Lys Gln Ile Thr Phe Leu Leu Lys Cys
 85 90 95
 Thr Phe Tyr Thr Ile Gln Ser Asn Ile Leu Ile Ser Met Tyr Cys Arg
 100 105 110
 Ile Tyr Leu Pro Pro Glu Glu Thr Gly Phe Phe Leu Ser Gln Asp Leu
 115 120 125
 Met Ile Gly Met Val Thr Cys Gly Leu Ala Ser Ile Ser Val Ser Arg
 130 135 140
 His Thr Val Met Ile Leu Ser Phe Ala Pro Ile Leu Leu Tyr Met Phe
 145 150 155 160
 Ile Gly Val Tyr Thr Ser Ser Glu Leu Tyr Leu Met Ser Leu Pro Ser
 165 170 175
 Leu Ala Val Ala Tyr Ile Phe Pro Pro Ile Met Leu Ala Arg Leu Gln
 180 185 190
 Glu Ile Leu Arg Thr Met Gln Arg Gln Lys Ala Arg Met Thr Ser Glu
 195 200 205
 Leu Lys Leu Trp Ala Ala Phe Asn Ala Leu His Leu Gln Pro Ser Ser
 210 215 220
 Lys Glu Ile Gln Leu Cys Cys Leu Ile Leu Glu Asn Lys Thr Thr Glu
 225 230 235 240
 Glu Ile Ala Ala Leu Gln Tyr Ile Ala Thr Ser Thr Val Arg Ser Asn
 245 250 255
 Arg Ser Arg Leu Arg Gln Lys Leu Gln Leu Asn Gln Glu Thr Asp Leu
 260 265 270
 Gln Thr Phe Leu Ser Glu Leu Ile Lys Lys Asp Phe Asp Tyr Leu Glu
 275 280 285
 Ser Pro Asp
 290

<210> 8244
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 8244
 Lys Ile Ser Glu Gln Asp Glu Ser Leu Phe Ala Asp Ala Phe Arg Ile
 1 5 10 15

Phe Ala Glu Leu Ser Trp Ala Asp Ile Tyr Asn Ser Glu Gly Leu Asp
 20 25 30
 Tyr Lys Glu Tyr Thr Asn Lys Gln Lys Asp Ser Phe Ala Ile Phe Arg
 35 40 45
 Ser Lys Lys Ile Phe Lys Phe Arg Ile Thr Gln Lys Tyr Arg Cys Phe
 50 55 60
 Gly Glu Val Val Asn Gly Val Phe His Val Leu Met Phe Asp Leu Thr
 65 70 75 80
 His Lys Leu Ser Asp
 85

<210> 8245

<211> 397

<212> PRT

<213> B.fragilis

<400> 8245

Arg Lys Asn Asp Lys Ala Met Lys Asn Met Glu Lys Ser Tyr Lys Arg
 1 5 10 15
 Ile Leu Leu Leu Gly Ile Gly Phe Ile Leu Cys Gly Thr Leu Ala Ala
 20 25 30
 Gln Glu Gln Lys Gln Asp Ser Thr Glu Gly Lys Asn Asn Ile Lys Ala
 35 40 45
 Ser Glu Tyr Leu Met Pro Lys Arg Lys Gly Ala Glu Lys Phe His Ser
 50 55 60
 Lys Arg Gly Ser Glu His Leu Phe Phe Ser Val Gly Ser Gly Ile Gly
 65 70 75 80
 Tyr Leu Phe Asn Val Gly Gly Gly Gln Thr Ala His Gly Pro Arg Ala
 85 90 95
 Ser Phe Met Ala Gly Asn Trp Leu Thr Pro Val Ile Gly Leu Arg Ala
 100 105 110
 Gly Gly Glu Tyr Thr Gln Trp Lys Gln Gly Asn Thr Asn Met His Leu
 115 120 125
 Ala Gly Ala Asn Val Asp Tyr Leu Ile Asn Ile Ser Ala Phe Ala Ala
 130 135 140
 Arg Tyr Asn Pro Lys Arg Val Phe Glu Val Ile Gly Ala Leu Gly Leu
 145 150 155 160
 Ser Tyr Gln Ala Thr Ile Val Lys Asp Gln Lys Thr Ile His Ser Tyr
 165 170 175
 Gly Leu Arg Ala Gly Leu Gln Gly Lys Leu Asn Val Ser Ser Ala Phe
 180 185 190
 Asn Leu Phe Ile Glu Pro Gln Leu Ala Leu Tyr Pro Asp Arg Val Asp
 195 200 205
 Asn Gln Ser Ser Trp Lys Arg Tyr Asn Leu Ala Gly Ser Leu Met Ala
 210 215 220
 Gly Ile Thr Tyr Lys Pro Ala Gly Tyr Ala Thr Leu Thr Phe Leu Lys
 225 230 235 240
 Gly Gly Phe Ala Ser Leu Ala Ala Gly Thr Gly Asn Thr Gly Asn Val
 245 250 255
 Leu Phe Asp Thr Glu Phe Ala Leu Gly Lys Trp Phe Asp Lys Phe Asn
 260 265 270
 Gly Met Arg Ile Ser Ala Gly Ser Ser Thr Ala Phe Leu Asp Asn Glu
 275 280 285
 Asp Ser Gly Ser Asn Arg Asp Phe Asn Ile Ser Leu Asn Ile Asp Tyr
 290 295 300
 Leu Cys Ser Leu Thr Arg Leu Phe Ser Asp Arg Asp Ser His Val Phe
 305 310 315 320
 Asn Leu Ile Val Ala Gly Gly Ile Gly Ser Tyr Phe Pro Gly Ala Glu
 325 330 335

Ser Ser Ser Ser Ile Ile Leu Asn Gly Arg Ile Gly Leu Gln Gly Glu
 340 345 350
 Ile Arg Leu Ser Ala His Ser Gly Leu Trp Leu Glu Pro Arg Ile Asn
 355 360 365
 Ile Phe Lys Asp Arg Ser Tyr Arg Ala Asp Leu Gln Glu Pro Ile Arg
 370 375 380
 Gly Thr Val Gly Leu Met Val Gly Thr Thr Tyr Lys Phe
 385 390 395

<210> 8246

<211> 143

<212> PRT

<213> B.fragilis

<400> 8246

Asn Ile Phe Leu Gln Lys Ser Ser Cys Asp Gly Leu Leu Pro Gly Ser
 1 5 10 15
 Arg Leu His Arg Leu Glu Asp Asn Thr Ile Ala Leu Leu Thr Phe Gly
 20 25 30
 Lys Lys Asp Gly Lys Glu Ala Met Phe Phe Phe Arg Met Asn Pro Asn
 35 40 45
 Thr Thr Gly Ala Lys Asn Arg Ala Lys Arg Ile Ala Ala Cys Ile Arg
 50 55 60
 Asn Phe Asp Arg Lys Cys Glu Glu Gln Leu Phe Ser Arg Arg Trp Gly
 65 70 75 80
 Ile Ser Phe Val Ser Ala Thr Gly Leu His Ser Gly Ile Pro Leu Val
 85 90 95
 Phe Ala Asn Lys Val Asn Lys Pro Val Ala Asp Tyr Leu Lys Glu Asn
 100 105 110
 Arg Lys Arg Asn Cys Gly Ile Val Phe Ile Asp Phe Ile Glu Ser Ser
 115 120 125
 Gly Gly Gln Lys Leu Val Glu Tyr Leu Ile Gly Gly Asn Ile Tyr
 130 135 140

<210> 8247

<211> 184

<212> PRT

<213> B.fragilis

<400> 8247

Ser Gly Ala Asp Gly Lys Ser Ala Pro Val Asp Ile Phe Phe Leu Ser
 1 5 10 15
 Glu Arg Glu Glu Tyr Glu Thr Lys Met Lys Lys Leu Leu Pro Ile Leu
 20 25 30
 Leu Gly Val Thr Leu Leu Leu Asn Ser Cys Ile Lys Asp Asp Met Asp
 35 40 45
 Ala Cys Ala Gly Tyr Met His Ile Tyr Phe Ser Tyr Ile Tyr Gly Gly
 50 55 60
 Ala Asn Arg Phe Phe Glu Thr Val Ser Thr Pro Thr Gln Leu His Phe
 65 70 75 80
 Tyr Lys Gln Lys His Lys Tyr Arg Glu Leu Glu Ile Ala Val Asp Glu
 85 90 95
 Ile Gly Leu Thr Glu Pro Tyr Arg Phe Leu Lys Asn Phe Asp Asp Thr
 100 105 110
 Asp Ser Leu Glu Leu Ile Ala Trp Thr Gln Asp Glu Ala Ile Asp Tyr
 115 120 125
 Val Asp Thr Pro Asp Thr Pro Ile Gly Glu Gly Tyr Val Lys Leu Lys
 130 135 140
 Glu Ile Thr Asp Gly Ser Gly Ile Cys Arg Pro Val Asp Asp Leu Leu

145 150 155 160
 Tyr Gly Arg Ile Ala Ile Asp Ala Gly Leu Arg Glu Asn Arg Ser Ser
 165 170 175
 Pro Arg Gly Trp Lys Asp Gln Gln
 180

<210> 8248
 <211> 565
 <212> PRT
 <213> B.fragilis

<400> 8248
 Lys Tyr Lys Leu Phe Glu Leu Ile Ser Ile Ile Lys Phe Phe Ser Asn
 1 5 10 15
 Met Lys Leu Asn Lys Leu Phe Thr Phe Thr Leu Ala Ala Leu Ala Met
 20 25 30
 Ala Ala Cys Ser Asn Asp Asp Glu Pro Gly Ile Asp Lys Gly Gly Gln
 35 40 45
 Lys Gly Glu Leu Ile Asp Ala Ile Ser Ile Ala Phe Thr Ser Ser Ser
 50 55 60
 Ala Pro Ala Thr Arg Ala Asp Lys Gly Glu Ile Glu Gly Val Gly Thr
 65 70 75 80
 Glu Asn Asn Val Tyr Val Ala Tyr Leu Phe Ala Lys Glu Asn Asp Pro
 85 90 95
 Gln His Glu Gly Ala Lys Val Gly Asp Trp Thr Val Lys Arg Val Ala
 100 105 110
 Gly Asp Ala Asn Thr Glu Asp Lys Asp Val Ala Ala Ala Ile Gly Glu
 115 120 125
 Gly Asp Val Ala Thr Pro Gly Thr Lys Lys Asn Met Cys Thr Phe Asn
 130 135 140
 Gly Val Arg Gln Gly Asp Ser Val Tyr Val Val Val Asn Asp Pro Gln
 145 150 155 160
 Met Thr Leu Ala Thr Ala Gln Thr Leu Ala His Gln Gly Asp Lys Ser
 165 170 175
 Glu Ala Ala Ile Arg Ala Tyr Ile Ser Asn Leu Ser Lys Ser Tyr Leu
 180 185 190
 Asn Glu Leu Thr Val Thr Lys Asp Gly Thr Gln Gly Lys Lys Tyr Ile
 195 200 205
 Met Ala Gly Val Ser Ala Ile Pro Thr Asn Pro Asn Ile Pro Asn Gly
 210 215 220
 Ser Thr Val Lys Val Ser Ile Pro Leu Asn Arg Glu Leu Ala Lys Val
 225 230 235 240
 Phe Phe Asn Ala Ser Val Thr Thr Asn Pro Val Tyr Glu Ala Tyr Gly
 245 250 255
 Lys Met Ala Ile Lys Asp Ala Glu Trp Glu Asn Pro Thr Gly Thr Lys
 260 265 270
 Asp Pro Asp Gly Ile Val Val Val Arg Ile Pro Arg Arg Val Ser Pro
 275 280 285
 Phe Thr Ala Gln Ala Arg Asp Trp Tyr Phe Pro Gln Ser Ala Asp Ala
 290 295 300
 Thr Ala Lys Asp Trp Asp Val Glu Gly Trp Leu Lys Ala Phe Ala Gly
 305 310 315 320
 Glu Lys Glu Ser Ala Pro Gly Thr Ala Glu Val Ala Gly Thr Thr Ser
 325 330 335
 Ala Leu Asn Lys Gly Glu Tyr Asn Ala Asp Ala Lys Glu Tyr Arg Leu
 340 345 350
 Thr Trp Val Val Gly Glu Lys Ala Leu Ala Asp Gly Ala Thr Pro Ala
 355 360 365
 Ala Ala Ser Met Val Tyr Val Lys Ser Asp Lys Leu Tyr Ser Pro Tyr

370		375		380
Phe Tyr Val Thr Pro	Asn Tyr Ala Asp Asn	Ala Gly Cys Ala Thr Val		
385	390	395		400
Val Val Thr Gln Ala	Thr Tyr Ile Gly Ala	His Thr Leu Leu Glu Pro		
	405	410		415
Thr Ile Thr Glu Gln	Met Leu Lys Glu Ala	Leu Asp Asp Ser Asp Phe		
	420	425		430
Gln Thr Ala Thr Ser	Thr Asp Gly Ser Val	Thr Tyr Asp Lys Leu Ala		
	435	440		445
Ala Asn Phe Trp Asp	Thr Gly Ala Asn Val	Thr Ala Leu Val Thr Phe		
	450	455		460
Leu Glu Lys Asp Ala	Thr Tyr Lys Leu Ala	Leu Arg Gly Glu Thr Glu		
	465	470		475
Gln Ala Lys Lys Glu	Ala Ala Ile Thr Ile	Lys Pro Asn Asp Lys Arg		
	485	490		495
Tyr Tyr Arg Ala Asp	Val Ala Asn Tyr Ser	Asp Asp Glu Thr Thr Ser		
	500	505		510
Met Lys Ile Thr Glu	Arg Asn Thr Phe Tyr	His Ile Thr Gly Thr Ile		
	515	520		525
Thr Thr Leu Gly Ala	Lys Ser Ile Glu Asp	Ala Ile Asn Ser Asp Asn		
	530	535		540
Ile Asp Met Leu Val	Gln Val Val Val Lys	Pro Trp Lys Tyr Val Val		
	545	550		555
Asn Asn Ile Asn Met				560
	565			

<210> 8249

<211> 391

<212> PRT

<213> B.fragilis

<400> 8249

Asn Glu Gly Arg Pro	Asp Thr Phe Val Ile	Thr Gly Asp Ile Asp Ala
1	5	10
Met Trp Leu Arg Asp	Ser Ser Ala Gln	Val Trp Pro Tyr Leu Pro Leu
	20	25
Met Lys Asp Asp Lys	Glu Leu Gln Leu	Ile Ala Gly Leu Ile Asn
	35	40
Arg Gln Ala Glu Cys	Ile Arg Ile Asp	Pro Tyr Ala Asn Ala Phe Asn
	50	55
Asp Gly Pro Leu Gly	Ser Tyr Trp Glu	Thr Asp His Thr Gln His Met
	65	70
Val Lys Glu Leu His	Glu Arg Lys Trp	Glu Ile Asp Ser Leu Cys Tyr
	85	90
Pro Ile Arg Leu Ala	Tyr His Tyr Trp	Leu Leu Thr Lys Asp Ile Ser
	100	105
Ala Phe Asp Ala Asp	Trp His Glu Thr	Met Lys Leu Val Val Gln Thr
	115	120
Phe Lys Glu Gln Gln	Arg Lys Gln Gly	Leu Gly Pro Tyr Ser Phe Thr
	130	135
Arg Asp Cys Asp Arg	Pro Thr Asp Ser	Gln Ile Asn Asn Gly Trp Gly
	145	150
Ala Pro Val Lys Pro	Val Gly Leu Ile	Val Ser Ser Phe Arg Pro Ser
	165	170
Asp Asp Ala Thr Gln	Tyr Gly Phe Leu	Ile Pro Ser Asn Met Phe Ala
	180	185
Val Val Ser Leu Arg	Gln Leu Ala Glu	Ile Glu Arg Glu Val Tyr Asp
	195	200
Asn Leu Pro Phe Ala	Glu Glu Cys Thr	Ala Leu Ala Asp Glu Val Asp
	205	


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Asn Leu Leu Ala Arg His Tyr Ile Gly Ile Thr Gly Phe Tyr Ser Met
   115           120           125
Phe Asp Val Gly Ile Asn Arg Arg Ala Tyr Tyr Gly Asp Ala Ala Ala
   130           135           140
Ala Gly Val Thr Tyr Gly Tyr Asn Trp Ile Leu Ser Arg Arg Trp Asn
  145           150           155           160
Leu Glu Val Ser Gly Gly Val Gly Val Ala Arg Tyr Arg Leu Val Arg
           165           170           175
Tyr Gln Pro Gly Ser Thr His Asp Glu Pro Asn Glu Ser Gly Trp Ala
           180           185           190
Pro Ile Pro Val Lys Leu Ser Val Ser Phe Ile Tyr Ile Ala Lys
   195           200           205

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<210> 8252

<211> 376

<212> PRT

<213> B.fragilis

<400> 8252

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Ser Arg Gly Gly Gln Ala Met Asn Ile Lys Gln Val Ile Phe Ile Asn
1           5           10           15
Ile Ser Phe Phe Ile Ser Leu Thr Val Leu Ala Ala Asp Arg Pro Thr
           20           25           30
Gln Pro Val Arg Thr Glu Val Tyr Arg Leu Glu Arg Leu Asp Ser Val
           35           40           45
Leu Leu Val Asp Leu Ala Val Asp Leu Thr Gly Val His Leu Ala Pro
           50           55           60
Asp Cys Thr Val Tyr Leu Phe Pro Leu Leu Ala Ser Glu Asn Thr Gly
65           70           75           80
Asp Ser Leu Ser Leu Pro Pro Ile Val Leu Asn Gly Pro Gln Ser Asp
           85           90           95
Leu Met Tyr Arg Arg Arg Arg Ala Leu Gly Thr Thr Ser Gly Leu Glu
           100          105          110
Lys Ile Thr Pro Tyr Thr Val Leu Arg Glu Gly Asp His Ala Leu Pro
           115          120          125
Arg Ile His Tyr Arg Thr Glu Val Pro Tyr Ala Ala Trp Met Asp Asp
           130          135          140
Val Lys Val Trp Met Arg Asp Thr Asn Cys Asn Cys Asp Ala Arg Leu
145           150           155           160
Val Pro Phe Ala Met His Thr Glu His Ile Pro Pro Leu Val Val Glu
           165           170           175
Arg Val Asp Thr Ile Val Ile His Asp Thr Ile Arg Leu Ala Ser Val
           180          185          190
Ala Ser Gly Gln Ser Thr Val Ala Ser Asp Ile Pro Leu Arg Lys Lys
           195          200          205
Val Thr Arg Ile Gln Ala Gly Tyr Glu Ala Asp Ile Tyr Phe Pro Thr
           210          215          220
Asn Glu Met Arg Ile Leu Pro Asp His Glu Leu Asn Arg Ala Ser Trp
225           230           235           240
Met His Phe Val Asn Gln Val Asp Ser Ile Glu Gln Asp Asn Arg Asn
           245          250          255
Ser Ile Ser Gly Val Thr Val Thr Gly Tyr Ser Ser Pro Glu Gly Tyr
           260          265          270
Thr Ser Asn Asn Glu Arg Leu Ala Glu Lys Arg Ala Lys Ala Leu Gln
           275          280          285
Ala Phe Leu Glu Asn Lys Tyr Gly Glu Arg Met Glu Val Ala Val Glu
           290          295          300
Trp Val Gly Glu Asp Trp Lys Gln Phe Glu Lys Asp Ile Glu Val Ser
305           310           315           320

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Asp Leu Pro Glu Arg Asn Glu Ile Leu Ser Ile Leu Arg Thr Val Ser
 325 330 335
 Asp Ser Asn Gln Arg Lys Ser Arg Leu Lys Ala Leu Asn Lys Gly Lys
 340 345 350
 Thr Phe Glu Ile Leu Leu Arg Glu Tyr Phe Pro Lys Leu Arg Arg Val
 355 360 365
 Ser Cys Arg Ile Arg Tyr Val Lys
 370 375

<210> 8253

<211> 193

<212> PRT

<213> B.fragilis

<400> 8253

Lys Arg Phe Met Val Pro Val Ala Ile Asn Asn Asp Ser Asn Cys Phe
 1 5 10 15
 Thr Leu Gly Lys Ser Met Phe Gly Glu Gly Lys Pro Tyr Ala His Met
 20 25 30
 Val Gly Val Thr Ile Gly Thr Gly Ile Gly Ala Gly Val Ile Ile Asn
 35 40 45
 His Arg Leu Tyr Cys Gly Gln Tyr Met Gly Ala Gly Glu Ile Gly Ser
 50 55 60
 Leu Pro Tyr Leu Asp Ser Asp Phe Glu His Tyr Cys Ser Ser Ser Phe
 65 70 75 80
 Phe Lys Arg His Asp Thr Thr Gly Val Val Val Ala Glu Lys Ala Glu
 85 90 95
 Arg Gly Asp Gly Ala Ala Leu Glu Ile Trp Arg Glu Phe Gly Thr His
 100 105 110
 Leu Gly Asn Leu Met Lys Val Ile Leu Phe Ser Tyr Ala Pro Gln Ala
 115 120 125
 Ile Ile Leu Gly Gly Ser Ile Val Ser Ala Phe His Phe Phe Lys Asp
 130 135 140
 Thr Met Lys Asp Ala Met Gln Asp Phe Pro Tyr Lys Ile Leu Leu Asp
 145 150 155 160
 Asn Val Lys Ile Ile Thr Ser Tyr Leu Lys Asp Ala Ser Leu Leu Gly
 165 170 175
 Ala Ser Ala Leu Phe Glu Lys Gln Tyr Leu Pro Ile Ser Ile Ile Asp
 180 185 190
 Asn

<210> 8254

<211> 381

<212> PRT

<213> B.fragilis

<400> 8254

Asn Lys Asn Met Lys Arg Met Tyr Tyr Ile Gly Tyr Met Leu Cys Leu
 1 5 10 15
 Leu Leu Ala Gly Cys Val Val Gly Glu Glu Ala Asp Gly Leu Leu Glu
 20 25 30
 Gln Arg Leu Ser Asp Arg Thr Leu Leu Val Tyr Met Gly Gly Asp Asn
 35 40 45
 Asp Leu Ala Asp Glu Thr Asp Glu Lys Leu Ser Ala Leu Thr Glu Ala
 50 55 60
 Trp Asp Arg Phe Pro Gly His Leu Leu Ile Tyr Gln Asp Lys Lys Gly
 65 70 75 80
 Ala Asp Ser Thr Arg Leu Leu Glu Val Cys Leu Asp Glu Gln Gly Glu

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<210> 8255
<211> 61
<212> PRT
<213> B.fragilis
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Ser	Gly	Cys	Ile	Val	Phe	Thr	Gln	Tyr	Cys	Phe	Leu	Phe	Ala	Gln	Lys
1				5					10					15	
Ser	Phe	Phe	Phe	Val	Thr	His	Thr	Leu	Phe	Phe	Ser	Phe	Val	Ile	Glu
			20					25					30		
Val	Val	Tyr	Cys	Ile	Tyr	Met	Gln	Lys	Glu	Asn	Val	Phe	Glu	Ser	Leu
		35					40					45			
Asn	Asn	Met	Leu	Phe	Thr	Phe	Leu	Pro	Ile	Gly	Ser	Glu			
	50					55					60				

<400> 8256

465
Arg

470

475

480

<210> 8257
<211> 290
<212> PRT
<213> B.fragilis

<400> 8257

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His Asn Ala Met Glu Lys Ile Ile Leu Leu Val Leu Pro Phe Phe Ala
1          5          10          15
Ala Ser Cys Gly Leu Val Lys Gln Gln Ala Ser Ala Pro Glu Pro Val
20          25          30
Asn Val Met Ser Phe Asn Ile Arg Tyr Asp Asn Pro Glu Asp Ser Leu
35          40          45
Asp Asn Trp Arg Tyr Arg Lys Asp Arg Val Ala Asn Ala Ile His Phe
50          55          60
Tyr Asp Val Asp Ile Leu Gly Thr Gln Glu Val Leu His Asn Gln Leu
65          70          75          80
Glu Asp Leu Lys Leu Arg Leu Pro Glu Tyr Gly Val Val Gly Val Gly
85          90          95
Arg Glu Asp Gly Lys Glu Lys Gly Glu Tyr Ser Ala Leu Trp Tyr Lys
100         105         110
Lys Asp Arg Phe Asn Val Leu Asp Ser Gly Tyr Phe Trp Leu Ser Glu
115         120         125
Thr Pro Glu Val Ala Gly Ser Lys Gly Trp Asp Gly Ala Cys Glu Arg
130         135         140
Ile Ala Ser Trp Val Lys Leu Gln Asp Lys Val Ser Asp Lys Glu Tyr
145         150         155         160
Phe Ala Leu Asn Thr His Leu Asp His Val Gly Gly Met Ala Arg Arg
165         170         175
Glu Gly Ile Ser Leu Met Leu Asp Arg Val Asn Glu Leu Ser Asp Gly
180         185         190
Leu Pro Val Ile Val Thr Gly Asp Phe Asn Ser Glu Pro Glu Ser Asp
195         200         205
Val Ile Lys His Val Thr Asp Ser Ala Asn Pro Glu His Leu Thr Asp
210         215         220
Ala Arg Gln Ala Ser Ser Ile Val Tyr Gly Pro Ser Trp Ser Phe His
225         230         235         240
Asp Phe Gly Lys Ile Pro Tyr Asn Lys Arg Pro Leu Ile Asp Tyr Val
245         250         255
Phe Val Arg Asn Gly Leu Lys Val Leu Arg Tyr Gly Ile Leu Ala Glu
260         265         270
Thr Glu Asn Asn Gly Phe Leu Ser Asp His Thr Pro Val Leu Val Thr
275         280         285
Val Glu
290

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<210> 8258
<211> 389
<212> PRT
<213> B.fragilis

<400> 8258

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Thr Lys Thr Ile Phe Pro Met Leu Lys His Ile Leu Phe Thr Cys Phe
1          5          10          15
Phe Phe Phe Thr Ala Ile Pro Leu Leu Lys Ala Gln Gly Cys Gly Asn
20          25          30

```

Asp Glu Lys Tyr His Leu Pro Tyr Lys Asn Thr Tyr Val Lys Glu Pro
 35 40 45
 Leu Val Ala Glu Asn Glu Tyr Arg Ile Ala Lys Pro Glu Thr Val Glu
 50 55 60
 Pro Lys Ser Phe Glu Glu Ala Arg Gln Ile Leu Pro Asn Pro Ile Trp
 65 70 75 80
 Ala Gly His Glu Lys Glu Leu Glu Met Tyr Trp Arg Ala Trp Glu Ile
 85 90 95
 Ala Val Gly Asn Ile Arg Ala Pro Gln Gln Gly Ser Gly Phe Val Ser
 100 105 110
 Ser Tyr Leu Asp Thr Ala Tyr Asn Gly Asn Ile Phe Met Trp Asp Ser
 115 120 125
 Ser Phe Ile Leu Met Phe Ala Arg Tyr Gly Thr Arg Phe Phe Pro Phe
 130 135 140
 Gln Arg Thr Leu Asp Asn Phe Tyr Ala Lys Gln His Pro Asp Gly Phe
 145 150 155 160
 Ile Cys Arg Glu Ile Lys Ala Asp Gly Ala Asp Cys Phe Glu Arg Tyr
 165 170 175
 Asp Pro Val Ser Thr Gly Pro Asn Leu Met Pro Trp Cys Glu Met Val
 180 185 190
 Tyr Tyr Tyr Gln Phe Gly Asp Thr Glu Arg Leu His Lys Ile Phe Pro
 195 200 205
 Val Leu Cys Ala Tyr Tyr Lys Trp Leu Lys Leu Asn Arg Thr Trp Arg
 210 215 220
 Asn Gly Thr Tyr Trp Ser Ser Gly Trp Gly Thr Gly Met Asp Asn Met
 225 230 235 240
 Pro Arg Val Pro Glu Gly Tyr Ser Pro Ile Tyr Ser His Gly His Met
 245 250 255
 Ile Trp Leu Asp Thr Asn Leu Gln Gln Leu Phe Thr Ala Asn Leu Leu
 260 265 270
 Leu Glu Met Gly Phe Tyr Leu Glu Arg Trp Gln Glu Ile Glu Glu Phe
 275 280 285
 Glu Asp Glu Ala Lys Met Leu Gly Lys Tyr Ile His Asp Asn Leu Trp
 290 295 300
 Asp Glu Lys Thr Gly Phe Leu Tyr Asp Gln Tyr Ala Asp Gly Thr Leu
 305 310 315 320
 Cys Lys Thr Lys Gly Ile Gly Ala Tyr Trp Thr Leu Leu Thr Asp Val
 325 330 335
 Leu Asp Asp Lys Gln Leu Asp Arg Met Val Lys Glu Leu Asp Asn Pro
 340 345 350
 Ala Thr Phe Ile Gly Asn Phe Val Phe Pro Leu Cys Arg Gln Ile Ile
 355 360 365
 Leu Ser Ile Lys Arg Thr Gly Val Ile Gly Lys Val Ala Tyr Gly Arg
 370 375 380
 Val Pro Thr Ile Trp
 385

<210> 8259

<211> 715

<212> PRT

<213> B.fragilis

<400> 8259

Pro Asn Lys Ile Thr Leu Met Asn Ile Lys Arg Phe Leu Leu Leu Gly
 1 5 10 15
 Ile Met Ala Leu Tyr Ala Ile Ile Pro Ala Trp Gly Gln Ala Gln Lys
 20 25 30
 Val Glu Ile Arg Gly Ser Val Ile Asp Asp Glu Gly Glu Pro Ala Ile
 35 40 45


```

      515              520              525
Ser Lys Leu Leu Glu Pro Phe Val Ser Arg Ser Ala Pro Thr Glu Leu
530              535              540
Leu Cys Asn Gln Val Ile Ala Leu Met Asp Glu Arg Ala Tyr Asn Arg
545              550              555              560
Ala Asp Ser Ile Ile Asp Phe Leu Pro Asp Asn Asp Met Thr Gln Asp
      565              570              575
Val Arg Ala Ile Val Gly Ala Tyr Asn Gly His Phe Glu Asp Ala Tyr
      580              585              590
Glu Arg Phe Gly Thr Gln Gly Gly Ile Asn Glu Val Val Leu Leu Met
      595              600              605
Ala Met Lys Gln Asn Glu Glu Ala Trp Glu Lys Ala Gln Glu Leu Pro
      610              615              620
Asp Glu Pro Leu Ser Tyr Tyr Leu Arg Ala Ala Cys Ala Asn Arg Leu
625              630              635              640
Asp Lys Val Ser Glu Ala Tyr Ala Phe Ile Lys Arg Ala Met Asn Glu
      645              650              655
Asp Pro Ser Leu Lys Glu Ile Ala Gln Ile Asp Gly Asp Val Thr Asp
      660              665              670
Leu Leu Gln Gln Leu Glu Asp Glu Lys Lys Glu Leu Lys Glu Lys Ala
      675              680              685
Glu Lys Thr Lys Glu Lys Asn Glu Thr Glu Asp Thr Glu Thr Glu Glu
      690              695              700
Ser Gly Leu Asn Glu Glu Lys Thr Ile Lys Gln
705              710              715

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<210> 8260

<211> 487

<212> PRT

<213> B.fragilis

<400> 8260

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Tyr Gln Arg Ile Met Lys Lys Leu Ile Ile Phe Leu Phe Val Leu Ser
1              5              10              15
Gly Cys Val Pro Ala Val Val Phe Ala Gln Gln Gln Phe Ser Phe Lys
      20              25              30
Asp Gly Lys Phe Lys Ile Ala Gln Phe Thr Asp Leu His Trp Thr Pro
      35              40              45
Arg Ser Leu Ala Cys Thr Glu Thr Glu Ala Thr Ile Cys Ala Val Leu
      50              55              60
Lys Ala Glu His Pro Asp Ile Ala Ile Leu Ser Gly Asp Val Val Thr
      65              70              75              80
Glu Asp Pro Ala Ile Asp Gly Trp Lys Ser Val Ile Arg Ile Phe Asp
      85              90              95
Glu Ala Lys Val Pro Phe Val Val Thr Met Gly Asn His Asp Ala Glu
      100              105              110
His Met Ala Lys Asp Asp Ile Tyr Asp Leu Leu Leu Glu Ser Pro Tyr
      115              120              125
Tyr Ala Gly Ala Lys Gly Pro Glu Gly Ile Met Gly Cys Gly Asn Cys
      130              135              140
Val Ile Pro Val Tyr Gly Ser Arg Asn Arg Glu Lys Val Glu Ala Leu
      145              150              155              160
Leu Tyr Cys Met Asp Ser Asn Asp Tyr Gln Pro Asp Lys Leu Tyr Gly
      165              170              175
Pro Tyr Asp Trp Ile His Phe Asp Gln Ile Ala Trp Tyr Arg Lys Gln
      180              185              190
Ser Ala Arg Phe Thr Lys Glu Asn Asn Gly Asn Pro Val Pro Ala Leu
      195              200              205
Ala Phe Phe His Ile Pro Leu Leu Glu Tyr Asn Glu Ile Ala Gly Asp

```

210 215 220
 Gly Lys Thr Phe Gly Asn Asn Arg Glu Gly Glu Val Ala Ser Ala Asn
 225 230 235 240
 Ile Asn Ser Gly Met Phe Ala Ser Phe Ile Asp Met Lys Asp Val Met
 245 250 255
 Gly Val Phe Ala Gly His Asp His Asp Asn Asp Tyr Leu Gly Ile Asn
 260 265 270
 Lys Gly Ile Val Leu Gly Tyr Gly Arg Val Thr Gly Ala Asp Ala Tyr
 275 280 285
 Gly Glu Leu Thr Arg Gly Ala Arg Ile Ile Glu Leu Tyr Glu Gly Lys
 290 295 300
 Phe Arg Phe Asp Thr Trp Ile Thr Thr Pro Ser Gly Arg Glu Ala Thr
 305 310 315 320
 Tyr Tyr Tyr Pro Ser Gly Leu Asn Ser Glu Glu Glu Arg Thr Ala Asp
 325 330 335
 Tyr Leu Pro Ala Val Lys Asn Val Ser Ser Pro Lys Gln Gly Val Ala
 340 345 350
 Tyr Thr Tyr Tyr Glu Gly Lys Cys Lys Arg Val Ala Gly Ile Ala Ser
 355 360 365
 Cys Leu Lys Val Lys Glu Gly Val Met Lys Asn Ile Ser Ile Lys Glu
 370 375 380
 Ala Ala Val Ala Asn His Phe Ala Tyr Asp Phe His Thr Leu Ile Gln
 385 390 395 400
 Ile Pro Glu Lys Gly Ile Tyr Arg Phe Tyr Thr Phe Ser Asp Asp Gly
 405 410 415
 Ser Met Leu Tyr Ile Asp Gly Lys Leu Val Val Asp Asn Asp Gly Gly
 420 425 430
 His Ser Ala Arg Arg Ala Glu Gly Lys Ile Ala Leu Glu Lys Gly Phe
 435 440 445
 His Glu Leu His Leu Leu Tyr Phe Glu Asp Tyr Met Gly Gln Glu Leu
 450 455 460
 Glu Val Gly Phe Ser Gly Leu Asp Phe Pro Glu Val Pro Leu Gln Asp
 465 470 475 480
 Glu Met Leu Phe Leu Pro Asn
 485

<210> 8261

<211> 189

<212> PRT

<213> B.fragilis

<400> 8261

Ser Gly Asn Val Tyr Arg Lys Phe Arg Ile Pro Ser Leu Ser Ala Asp
 1 5 10 15
 His Pro Lys Tyr Lys Glu Asn Gly Arg Tyr Trp Gln Gly Gly Ile Trp
 20 25 30
 Pro Gly Thr Asn Tyr Met Val Met Gln Gly Leu Val Lys Lys Gly Tyr
 35 40 45
 His Lys Leu Ala Arg Glu Ile Ala Leu Asn His Tyr Ala Glu Val Leu
 50 55 60
 Glu Val Tyr Lys Asn Thr Gly Thr Phe Trp Glu Tyr Tyr Ser Pro Glu
 65 70 75 80
 Lys Ala Glu Pro Gly Phe Met Ala Arg Lys Glu Phe Val Gly Trp Thr
 85 90 95
 Gly Leu Pro Pro Ile Ala Glu Leu Ile Glu Phe Ile Ile Gly Ile Arg
 100 105 110
 Gly Asp Tyr Val Asn Gln Gln Ile Ile Trp Asp Met Asn Leu Thr Glu
 115 120 125
 Thr Asn Gly Ile Glu Arg Tyr Pro Phe Gly Ser Glu Gly Ile Ile Asn

130 135 140
 Leu Lys Ala Glu Ala Arg Ser Ala Asn Asp Glu Pro Arg Ile Ala
 145 150 155 160
 Val Asp Thr Asn Ile Gly Phe Glu Leu Leu Val Leu Tyr Gly Gly Lys
 165 170 175
 Glu Lys Lys Val Asn Val Thr Pro Gly Lys His Thr Tyr
 180 185

<210> 8262
 <211> 180
 <212> PRT
 <213> B.fragilis

<400> 8262
 Ser Thr Val Val Phe Phe Leu Leu Glu Lys Arg Leu Lys Val Pro Asp
 1 5 10 15
 Phe Leu Trp Leu Leu Leu Asn Phe Asp Trp Arg Lys Ser Val Lys Met
 20 25 30
 Phe Leu Phe Tyr Ala Asp Leu Phe Asn Val Val Phe Val Leu Cys Ala
 35 40 45
 Phe Cys Cys Leu Tyr Cys Asn Met Tyr Phe Val Phe Val Ser Phe Cys
 50 55 60
 Ile Leu Leu Met Leu Ile Tyr Gly Leu Phe Ser Ser Phe Pro Val Ser
 65 70 75 80
 Arg Ala Gly Lys Thr Asn Ser Ile Ala Gly Lys Ile Tyr Asn Leu Thr
 85 90 95
 Ile Val Arg Phe Leu Leu Arg Pro Phe Ile Glu Ser Ile Ser Gln Ser
 100 105 110
 Leu Leu Ile Lys Asp Ala Ala Gly Met Tyr Ser Tyr Ile Pro Lys Gln
 115 120 125
 Ala Gln Val Arg Ile Arg Phe Met Ser Phe Tyr Asn Val Tyr Thr Phe
 130 135 140
 Leu Ile Cys His Met Gly Arg Glu Met Ser Phe Ser Pro Cys Pro Gly
 145 150 155 160
 Cys Ser Glu Thr Arg Leu Cys Asp Ile Thr Trp Phe Pro Cys Pro Leu
 165 170 175
 Gly Glu Ala Gly
 180

<210> 8263
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8263
 Gln Ala Pro Val Gln Met Pro Val Val Ser Leu Gly Arg Met Met Gln
 1 5 10 15
 Arg Lys Met Ala Lys Leu Ile Lys Leu Phe Phe Pro Trp His Tyr Val
 20 25 30
 Ile Asn Tyr Phe Thr Asn Lys Ala Glu Val Gly Ile Gly Ala Asn Ser
 35 40 45
 Phe Ala Glu Gly Ser Phe Gln Asn Gln Leu Lys Cys Ser Pro Ser
 50 55 60

<210> 8264
 <211> 551
 <212> PRT
 <213> B.fragilis

<400> 8264

Thr Asn Leu Leu Ile Lys Thr Val Met Lys Lys Tyr Ile Pro Leu Leu
 1 5 10 15
 Ala Leu Ser Ala Leu Thr Phe Cys Ser Cys Ser Asp Phe Leu Asn Val
 20 25 30
 Gln Pro Glu Gly Asn Pro Ala Thr Thr Ser Tyr Phe Leu Asn Asp Glu
 35 40 45
 Gln Ala Ile Asp Ala Ile Asp Gly Leu Tyr Ala Pro Ile His Gln Glu
 50 55 60
 Lys Gly Phe Gly Arg Glu Leu Phe Trp Glu Gln Gly Ala Ala Cys Asp
 65 70 75 80
 Ile Val Trp Ala Lys Ser Arg Gly Phe Asn Ser Leu Ala Thr Phe Asn
 85 90 95
 Tyr Asn Gly Asp Glu Ser Pro Ile Ser Gly Gly Phe Asp Leu Phe Tyr
 100 105 110
 Gln Asn Met Ala Arg Ser Asn Trp Ile Ile Lys Gln Leu Leu Ala Lys
 115 120 125
 Glu Lys Lys Gly Gly Leu Ser Asp Val Glu His Arg Ser Leu Gly Glu
 130 135 140
 Ala Phe Phe Met Arg Gly Met Ala His Phe Trp Ile Ala Tyr Arg Tyr
 145 150 155 160
 Gly Thr Lys Asp Gln Gly Val Pro Phe Val Arg Tyr Glu Asp Phe Glu
 165 170 175
 Gly Asp Tyr Asp Asn Ser Ile Pro Pro Gln Gln Ala Ser Val Ile Asp
 180 185 190
 Asn Tyr Lys Phe Ile Ile Glu Asp Met Asp Asn Ala Ile Ser Tyr Leu
 195 200 205
 Pro Lys Phe Glu Glu Tyr Ser Asp Asp Asp Lys Gly Arg Ala His Lys
 210 215 220
 Ala Ala Ala Val Ala Tyr Lys Ala Lys Val Tyr Ala Tyr Trp Ala Thr
 225 230 235 240
 Trp Asp Glu Thr Gln Trp Asn Asn Val Ile Ala Met Val Asn Ser Leu
 245 250 255
 Glu Thr Asp Tyr Gly Arg Gly Leu Ala Asp Thr Phe Ala Glu Val Phe
 260 265 270
 Ser Ser Glu Phe Thr Asp Phe Trp Asn Lys Glu Tyr Ile Trp Ser Ile
 275 280 285
 Pro Ser Asn Gly Gly Ser Thr Gly Gly Gly Val Glu Phe Pro Gly Val
 290 295 300
 Ile Leu Glu Asp Lys Ala Trp Gly Val Tyr Asn Gly Trp Gly His Ile
 305 310 315 320
 Lys Pro Ser Tyr Asp Ile Tyr Glu Glu Met Ala Lys Asp Gly Ala Gly
 325 330 335
 Asn Asp Arg Leu Val Arg Ser Ile Leu Glu Tyr Asn Gln Glu Phe Glu
 340 345 350
 Phe Phe Gly Glu Lys Arg Lys Phe Tyr Thr Asp Thr Asn Leu Asp Val
 355 360 365
 Gly Phe Gln Ile Asn Lys Tyr Met Asp Pro Phe Lys His Lys Asp Ala
 370 375 380
 Asp Thr Lys Gly Tyr Val Asn Thr Asn Gly Asn Trp Pro Thr Ala Arg
 385 390 395 400
 Val Asn Phe Pro Leu Ile Arg Phe Ala Glu Met Leu Leu Phe Arg Ala
 405 410 415
 Glu Ala Tyr Leu Met Thr Asp Gln Pro Gly Lys Ala Lys Glu Asp Leu
 420 425 430
 Asn Arg Ile Arg Arg Arg Ser Asn Leu Lys Glu Leu Ile Asp Met Pro
 435 440 445
 Thr Met Ala Asp Leu Tyr His Glu Arg Arg Cys Glu Leu Ala Phe Glu
 450 455 460

Tyr Thr Asp His Leu Phe Asp Leu Lys Arg Trp His Arg Ser Ser Asn
 465 470 475 480
 Val Val Ile Lys Glu Leu Ala Ala Lys Glu Leu Asn Ala His Pro Arg
 485 490 495
 Ile Arg Lys Tyr Ala Asp Arg Ser Asn Pro Glu Ser Thr Phe Thr Ile
 500 505 510
 Glu Pro Tyr Ala Asp Tyr Leu Asn Lys Thr Pro Tyr Gln Asp Tyr Met
 515 520 525
 Met Val Phe Pro Tyr Pro Ala Glu Gln Ile Thr Lys Ser Asn Gly Lys
 530 535 540
 Leu Ile Gln Asn Asp Gly Tyr
 545 550

<210> 8265

<211> 261

<212> PRT

<213> B.fragilis

<400> 8265

Met Phe Ser Leu Cys Thr Arg Leu Pro Cys Ala Ser Arg Gln Thr Thr
 1 5 10 15
 Leu Gln Pro Val Arg Lys Pro Gly Ser Ile Pro Ile Thr Arg Phe Cys
 20 25 30
 Pro Lys Gly Gly Ala Arg Ser Ser Trp Arg Arg Phe Ser Val Lys Thr
 35 40 45
 Arg Ile Ala Ser Ser Ser Ala Cys Ser Phe Thr Glu Gly Gly Lys Phe
 50 55 60
 Gly Phe Asp Gly Arg Phe Gln Gln Thr Ala Val Gly Ile Arg Ala Asp
 65 70 75 80
 Asp Ser Leu Ala Gly Lys Glu Ile Thr His Cys Ile Thr Gly Thr Phe
 85 90 95
 Val Phe Ala His Leu Gly Val His Leu His Trp Ser Asp Leu Leu Leu
 100 105 110
 Ser Gly Leu Phe Phe Ala Met Val Ala Ile Val Glu Glu Thr Met Met
 115 120 125
 Arg Gly Tyr Val Leu Gly Arg Leu Leu Arg Thr Arg Leu Asn Lys Phe
 130 135 140
 Ile Ser Leu Leu Ile Ser Ser Leu Leu Phe Ala Leu Leu His Leu Met
 145 150 155 160
 Asn Pro Asn Val Ala Phe Leu Pro Met Leu Asn Leu Val Leu Gly Gly
 165 170 175
 Leu Leu Leu Gly Ala Ser Tyr Leu Tyr Thr Arg Asn Leu Trp Phe Pro
 180 185 190
 Val Ser Leu His Phe Phe Trp Asn Trp Ile Gln Gly Pro Val Leu Gly
 195 200 205
 Tyr Glu Val Ser Gly Asn Arg Phe Cys Glu Thr Leu Phe Ser Leu Arg
 210 215 220
 Leu Pro Ala Asn Asn Leu Ile Asn Gly Gly Ala Phe Gly Phe Glu Gly
 225 230 235 240
 Ser Leu Val Cys Thr Val Leu Ala Thr Leu Phe Thr Leu Phe Ile Ile
 245 250 255
 Trp Trp Phe Glu Gln
 260

<210> 8266

<211> 532

<212> PRT

<213> B.fragilis

<400> 8266

Lys Ile Thr Leu Lys Ile Glu Arg Lys Glu Cys Phe Arg Leu Arg Ser
 1 5 10 15
 Leu Ser Ser Lys Arg Phe Ser Ile Thr Cys His Lys Phe Ile Thr Lys
 20 25 30
 Gln Asn Ser Arg Ser Met Asn Ile Lys Glu Ile Leu Asn Gln Ser Glu
 35 40 45
 Gly Arg Arg Leu Glu Phe Lys Ala Glu Leu Pro Glu His Ser Asp Leu
 50 55 60
 Ala Lys Thr Val Val Ala Phe Ala Asn Asp Ala Gly Gly Asp Leu Tyr
 65 70 75 80
 Ile Gly Val Ala Asp Asp Pro Arg Glu Val Val Gly Leu Asp Glu Asp
 85 90 95
 Lys Leu Val Thr Ile Glu Glu Lys Ile Ser Asn Ile Ile Phe Asp Arg
 100 105 110
 Cys Tyr Pro Ala Ile Leu Pro Glu Ile Lys Phe Ile Ser Glu Glu Asn
 115 120 125
 Lys His Leu Ile Gln Val Thr Val Phe Arg Gly Ser Thr Pro Pro Tyr
 130 135 140
 Tyr Leu Lys Glu Lys Gly Lys Leu Gln Gly Thr Phe Ile Arg Val Gly
 145 150 155 160
 Ser Ala Asn Arg Leu Ala Asp Glu Ala Ile Ile Ser Glu Leu Glu Arg
 165 170 175
 Arg Arg Arg Asn Ile Ser Phe Asp Ser Glu Val Ile Pro Asp Lys Pro
 180 185 190
 Val Asn Asp Leu Asn Ile Asp Gly Phe Lys Ala Ile Phe Lys Glu Lys
 195 200 205
 Thr Gly Glu Glu Leu Ser Asp Gln Ala Leu Arg Lys Leu Asp Leu Val
 210 215 220
 Lys Asp Met Gln Gly Ala Glu Tyr Pro Thr Asn Ala Leu Ile Leu Phe
 225 230 235 240
 Ser Asp Asp Pro Leu Arg Asn Ser Leu Phe His Tyr Ala Lys Val Glu
 245 250 255
 Cys Ala Arg Phe Lys Gly Val Ser Ile Asp Asp Phe Ile Asp Gln Lys
 260 265 270
 Ser Ile Thr Thr Asn Ile Ala Thr Gln Ala Glu Glu Ala Tyr Asn Phe
 275 280 285
 Val Leu Arg His Ile Asn Lys Gly Ala Ser Val Glu Gly Val Tyr Thr
 290 295 300
 Val Ser Arg Trp Glu Tyr Pro Val Lys Ala Ile Arg Glu Ala Ile Arg
 305 310 315 320
 Asn Ala Val Val His Arg Asp Tyr Ser Leu Thr Gly Lys Asp Val Lys
 325 330 335
 Ile Ala Ile Tyr Asp Asp Met Val Glu Ile Thr Ser Pro Gly Leu Leu
 340 345 350
 Pro Pro Ser Ile Asp Tyr Ala Ala Met Glu Ser Arg Gln Ser Asp Ala
 355 360 365
 Arg Asn Lys Val Ile Ala Pro Val Phe Lys Arg Leu Gly Ile Ile Asp
 370 375 380
 Gln Trp Gly Asn Gly Leu Lys Leu Ile Ala Asp Glu Met Lys Glu Tyr
 385 390 395 400
 Pro Asn Ile Glu Leu Arg Trp Arg Glu Val Gly Leu Ser Phe Gln Val
 405 410 415
 Gln Phe Val Arg Leu Asp Tyr Val Leu Asn Ala Glu Arg Ile Lys Asp
 420 425 430
 Ile Gln Gln Glu Leu Gln Gln Glu Leu Gln Gln Glu Leu Gln Gln Glu
 435 440 445
 Leu Gln Gln Glu Leu Arg Lys Ala Thr Leu Tyr Ser Glu Val Leu Arg
 450 455 460

Cys Ile Val Ser Asn Ala Leu Ser Arg Gln Asp Ile Ser Leu Ala Leu
 465 470 475 480
 Gly Gln Lys Lys Val Ser Gly Gln Leu Asn Lys Val Ile Gln Lys Leu
 485 490 495
 Ile Ala Asn Asn Leu Ile Glu Arg Thr Ile Pro Glu Lys Pro Asn His
 500 505 510
 Pro Ala Gln Lys Phe Arg Leu Thr Glu Arg Gly Gln Leu Phe Leu Gly
 515 520 525
 Leu Leu Ala Lys
 530

<210> 8267
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8267
 Val Ala Ser Ser Arg Lys Gly Asn Lys Asn Leu Lys His Trp Arg Tyr
 1 5 10 15
 Trp Ile Phe Gln Ala Leu Leu Tyr Thr Cys Thr Glu Lys Leu Lys Val
 20 25 30
 Leu Val Asn Gly Val Leu Leu Arg Cys Asp Ala Asp Tyr Leu Phe Ile
 35 40 45
 Arg Asn Thr Gly Glu Gly Tyr Ile Trp Asp Glu Thr Pro Ile Phe Ile
 50 55 60
 Arg Ile Met Pro Gln Ser Trp Gln Gln Lys
 65 70

<210> 8268
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 8268
 Glu Ser Arg Phe Val Asn Glu Leu Gly Asn Gly Thr Ser Arg Leu Thr
 1 5 10 15
 Ile Pro Val Asn Asp Leu Met Asn Tyr Tyr Val Glu Tyr Phe His Ile
 20 25 30
 Ser Lys Gln Asn Gly Leu Val Glu Tyr Cys Asn Lys Ala Ile Val Thr
 35 40 45
 Leu Gln Gln Lys Leu Asp Lys Glu Lys Asp Asn Phe Asn Lys Arg Ile
 50 55 60
 Asn Ser Leu Leu
 65

<210> 8269
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 8269
 Tyr Gly Lys Pro Ala Arg Gly Arg Ser Gly Gln Gln Arg His Gln Arg
 1 5 10 15
 His Gln Val Gly Gly Lys Gln Glu Tyr Pro Glu Gly Lys Gly Asp Asn
 20 25 30
 Gln Asp Gln Leu Pro His Thr Ala Gln Thr Val Glu Arg Val Arg Lys
 35 40 45
 Glu Arg Ala Cys Arg Gly Cys Pro Met Thr Ala Asp Ala Ala Arg Leu
 50 55 60

Leu Lys Glu Phe Asp Gln Ile Lys Asn Leu Lys Thr Met
 65 70 75

<210> 8270

<211> 536

<212> PRT

<213> B.fragilis

<400> 8270

Asn Leu Lys Thr His Lys Glu Val Thr Ser Asn Lys Ser Lys Thr Leu
 1 5 10 15
 Asp Phe Val Ile Ser Lys Thr Met Lys Ile Phe Arg Tyr Ile Leu Leu
 20 25 30
 Ala Ser Leu Thr Cys Thr Leu Phe Ser Cys Gly Pro Asp Glu Leu Ile
 35 40 45
 Pro Glu Ser Val Pro Pro Val Val Asn Pro Gly Asp Lys Asp Glu Pro
 50 55 60
 Gly Glu Glu Pro Glu Glu Pro Glu Glu Pro Ala Lys Ile Gln Leu Gly
 65 70 75 80
 Ile Thr Ala Ser Leu Gln Asn Met Gln Gln Thr Arg Gly Ile Ile Glu
 85 90 95
 Ala Phe Ala Pro Gly His Glu Met Gly Val Phe Val Gly Thr Ser Gln
 100 105 110
 Thr Asp Glu Ala Ala Gly Ile Lys Asn Ala Ser Tyr Leu Phe Asp Gly
 115 120 125
 Lys Val Trp Asn Ala Gly Gln Asp Val Pro Val Glu Ala Asp Ala Asp
 130 135 140
 Val Val Ala Tyr Leu Pro Tyr Asn Arg Glu Val Thr Asp Phe Lys Ser
 145 150 155 160
 Val Pro Phe Asp Leu Ala Asp Gln Asn Asp Ile Leu Tyr Gly Ala Ala
 165 170 175
 Lys Val Thr Lys Asp Val Pro Thr Ala Ser Leu Met Met Gln His Ala
 180 185 190
 Met Thr Leu Val Arg Met Arg Leu Met Lys Asn Glu Tyr Met Gly Thr
 195 200 205
 Gly Leu Val Ser Asp Met Thr Phe Ala Gly Val Leu Thr Ser Gly Thr
 210 215 220
 Val Asp Ala Leu Thr Gly Ala Val Thr Lys Asp Tyr Asn His Gly Arg
 225 230 235 240
 Gly Ser Val Lys Val Gly Gly Asn Tyr Met Leu Asn Asp Glu Asn Pro
 245 250 255
 Val Ile Val Asp Ala Ile Met Ile Pro Arg Ala Ala Tyr Asp Glu Gln
 260 265 270
 Ala Ser Val Ser Phe Val Ile Asp Gly Gln Lys His Thr Tyr Ala Phe
 275 280 285
 Pro Val Gln His Glu Trp Lys Ala Gly Met Lys Tyr Thr Tyr Thr Leu
 290 295 300
 Lys Met Thr Gly Asn Tyr Asn Ala Pro Val Asn Lys Glu Gln Val Asp
 305 310 315 320
 Ile Asp Val Glu Tyr Trp Gly Gln Tyr Gly Lys Thr Asp Asp Ile Val
 325 330 335
 Leu Asn Pro Asn Pro Glu Asp Tyr Glu Phe Thr Ile Trp Pro Asn Tyr
 340 345 350
 Thr Ala Tyr Gly Tyr Asp Cys Tyr Gln Asn Glu Gly Lys Val Phe Gly
 355 360 365
 Thr Phe Tyr Tyr Pro Trp Cys Gly Thr Ser Glu Gly Glu Leu Arg Phe
 370 375 380
 Val Phe Met Lys Gln Gly Met Asn Glu Ile Val Glu Lys Phe Gln Pro
 385 390 395 400

Ile Asp Ile Lys Thr Asn Gly Gly Trp Asp Gly Lys Arg Ile Gln Cys
 405 410 415
 Tyr Ile Thr Ser Val Pro Gly Thr Tyr Gln Leu Val Pro Leu Phe Arg
 420 425 430
 Arg Lys Gly Glu Thr Met Trp Cys Arg Ala Ala Asp Tyr Asp His Gly
 435 440 445
 Ser Thr Asp Trp Glu Trp Leu Tyr Glu Val Lys Ala Pro Ala Pro Asp
 450 455 460
 Asp Leu Pro Ala Leu Arg Met Met Glu Val Glu Gly Gln Gly Tyr Thr
 465 470 475 480
 Ser Ile Leu Val Tyr Pro Val Pro Asp Glu Thr Ser Trp Asn Leu Val
 485 490 495
 Tyr Thr Leu Ser Asn Lys Gly Glu Lys Ala Leu Arg Gly Glu Ile Lys
 500 505 510
 Ala Val Trp Glu Arg Glu Phe Lys Leu Lys Ser Asn Ser Tyr Arg Pro
 515 520 525
 Ser Asp Lys Lys Lys Gly Ala Ile
 530 535

<210> 8271
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8271
 Glu Gly Glu Thr Ile Asp Val Phe Met Tyr Val Ser Asp Tyr Leu Ser
 1 5 10 15
 Leu Cys Ile Phe Pro Cys Val Phe Phe Ala Leu Lys Ile Tyr Asp Lys
 20 25 30
 Leu Ser Lys Lys Gln Lys Asn Gly Lys Gln Tyr Ser Asp Arg Glu Gln
 35 40 45
 Gly Lys Ile Ile Thr Gly Ser Ser Asn Pro Leu Phe Pro Lys
 50 55 60

<210> 8272
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 8272
 Met Glu Thr Ala Phe Ala Gly Tyr Gly Met Asn Pro Asp Ala Lys Ala
 1 5 10 15
 Ala Ala Leu Pro Glu Pro Val Phe Gln Gly Thr Gly Glu Arg Asn Pro
 20 25 30
 Val Gly Tyr Ser Val Pro Gly Glu Tyr Ile Pro Val Ala Phe Gln Cys
 35 40 45
 Leu Gln Thr Phe Ala Ser Leu Gln Cys Leu Val Glu Gln Phe Leu Ser
 50 55 60
 Val Val
 65

<210> 8273
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 8273
 Pro Ala Asn Ala Val Ser Ile Gln Val Leu Thr Trp Ala Trp Ser Trp
 1 5 10 15

Gln Pro Pro Val Tyr Ala Thr Ala Arg Gly Thr Val Ser Phe Ala Arg
 20 25 30
 Arg Lys Gly Gly Tyr Glu Arg Cys Val Ile Ile Arg His Ser Tyr Gly
 35 40 45
 Phe Glu Thr Leu Tyr Ala His Leu Ala Ala Tyr Tyr Thr Thr Glu Gly
 50 55 60
 Gln Lys Val Asp Arg Gly Ala Val Ile Ala Phe Ala Gly Ser Thr Gly
 65 70 75 80
 Lys Ser Thr Gly Tyr His Leu His Tyr Glu Ile Arg Lys Asn Gly Lys
 85 90 95
 Pro Ile Lys Pro Tyr Trp Tyr Gly Tyr Asp Asp
 100 105

<210> 8274
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 8274
 Ser Gly Arg Ala Val Arg Glu Lys Ser Pro Arg Pro Val Lys Lys Gln
 1 5 10 15
 Arg Gln Ser Leu Ile Asn Ile Gln Met Arg Ile Thr Ala Arg Pro Gly
 20 25 30
 Ala Lys Thr Leu Val Ala Glu Cys Ala Phe Tyr Leu Tyr Met Asn Asp
 35 40 45
 Trp Leu Cys Lys Asp Lys Lys Ile Phe Ala Met Thr Leu Phe Glu Ile
 50 55 60
 Leu Asn Phe Asn Arg Glu Val Leu Glu Arg Leu Ala Gly Met Gly Phe
 65 70 75 80
 Lys Pro Asp Asp Tyr Lys Tyr Ile Asp Leu Tyr Lys Glu Tyr Glu Arg
 85 90 95
 Met Arg Cys Gln Gly Asp Lys Val Thr Tyr Cys Val Ala Val Leu Ser
 100 105 110
 Asn Arg His Gly Val Ser Glu Arg Lys Ile Tyr Glu Ile Leu Gly Arg
 115 120 125
 Phe Lys Lys Glu Cys Thr Phe His Ala Val
 130 135

<210> 8275
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 8275
 Lys Gly Gly Gln Ser Gly Ala Asp Glu Met Pro Val Pro Gly Gly Glu
 1 5 10 15
 Val Phe Tyr Arg Val Ser Glu Ala Val Gly Thr Gly Gly Ile Met
 20 25 30
 Thr Thr Leu Ser Val Ile Ser Tyr Ile Glu Arg Ile Asn Arg Val Tyr
 35 40 45
 Arg Leu Ile Arg Met Glu Arg Thr Gly Ser Leu Asp Glu Leu Ala Ser
 50 55 60
 Leu Leu Arg Val Ser Arg Thr Ile Asn Asn Tyr Leu Glu Glu Leu
 65 70 75 80
 Arg Leu Met Gly Ala Glu Ile Lys Phe Ser Arg Arg Gln Asn Pro Ile
 85 90 95
 Leu Phe Gln Glu Gln Ile Arg Ile Ala Arg Asp Gly
 100 105

<210> 8276
 <211> 412
 <212> PRT
 <213> B.fragilis

<400> 8276

Thr	Thr	Thr	Lys	Asn	Lys	Lys	Tyr	Thr	Met	Glu	Thr	Ile	Gln	Glu	Ile
1				5					10					15	
Ile	Asp	Thr	Ile	Lys	Gln	Trp	Pro	Ala	Thr	Ile	Trp	Trp	Val	Met	Gly
			20					25					30		
Ala	Leu	Phe	Ile	Ile	Ser	Trp	Phe	Trp	Asp	Thr	Pro	Pro	Arg	Lys	Lys
			35				40					45			
Arg	Asn	Lys	Asp	Lys	Met	Thr	Asp	Asp	Lys	Asn	Asn	Asp	Leu	Lys	Ser
	50					55					60				
Ser	Asn	Met	Thr	Asp	Lys	Lys	Glu	Phe	Lys	Gly	Asn	Leu	Met	Lys	Glu
65					70					75					80
Gly	Ile	Phe	Val	Trp	Val	Val	Phe	Ala	Pro	Asp	Gly	Lys	Ala	Gly	Leu
			85						90					95	
Tyr	Met	Asp	Gly	Glu	Lys	His	Leu	Glu	Asn	Gly	Thr	Tyr	Ala	Tyr	Gly
			100					105					110		
Asn	Arg	Leu	Ser	Thr	Asp	Val	Ser	Ser	Phe	His	Glu	Ile	Cys	Asn	Leu
			115				120					125			
Asp	Asn	Lys	Pro	Val	Tyr	Leu	His	Phe	Pro	Glu	His	Gly	Ile	Ser	Val
			130			135					140				
Arg	Tyr	Arg	Ile	Arg	Leu	Arg	Tyr	Ser	Arg	Thr	Asp	Asp	Ala	Gly	Ile
145					150					155					160
Glu	Arg	Ser	Glu	His	Glu	Pro	Glu	Thr	Cys	Leu	Pro	Ala	Trp	Ile	Val
				165					170					175	
Arg	Gly	Lys	Thr	Gly	Gln	Thr	Gly	Leu	Tyr	Leu	Gln	Lys	Trp	His	Glu
			180				185						190		
Glu	Lys	Cys	Phe	Ile	Pro	Asp	Met	Ser	Gly	Leu	Pro	Gly	Leu	Pro	Asp
			195				200					205			
Leu	Gln	Pro	Asp	Gly	Ile	Pro	Val	Arg	Ile	Glu	Met	Leu	Ile	Arg	Lys
			210			215					220				
Ala	Tyr	Pro	Phe	Phe	Asp	Leu	Val	Lys	Pro	Ala	Ser	Trp	Arg	Ser	Trp
225					230					235					240
Gly	Ile	Ser	Ser	Asn	Pro	Ala	Ser	Leu	Lys	Gly	Asn	Phe	Phe	Val	Asn
				245					250					255	
Pro	Gly	Glu	Gly	Asn	Leu	Thr	Gly	Glu	Gly	Val	Val	Met	Trp	Thr	Val
			260					265					270		
Phe	Thr	Gly	Asp	Gly	Lys	Ala	Ala	Leu	Tyr	Met	Asp	Asp	Arg	Trp	His
			275				280					285			
Leu	Glu	Asn	Gly	Ile	Leu	Ala	Tyr	Gly	Glu	Arg	Leu	Ser	His	Asp	Val
			290			295					300				
Pro	Val	Leu	His	Lys	Ile	Phe	Asn	Leu	Glu	Glu	Met	Leu	Leu	Phe	Arg
305					310					315					320
His	Phe	Pro	Lys	Arg	Gly	Val	Pro	Gln	Arg	Ile	Arg	Met	Gln	Leu	Arg
				325					330					335	
Phe	Pro	Gly	Thr	Gly	Glu	Ala	Cys	Lys	Glu	Arg	Pro	Asp	Cys	Asn	Arg
			340					345					350		
Gly	Thr	Tyr	Phe	Leu	Pro	Ala	Trp	Val	Val	Pro	Glu	Glu	Ser	Gly	Arg
			355				360					365			
Ile	Ser	Leu	Tyr	Leu	Gln	Glu	Gln	Leu	Ser	Gly	Glu	Cys	Asp	Ile	Gln
			370			375					380				
Asp	Ile	Ser	Arg	Leu	Pro	Gly	Ala	Pro	Lys	Leu	Gln	Pro	Asn	Gly	Val
385					390					395					400
Pro	Val	Arg	Val	Glu	Ile	Leu	Leu	Gln	Gln	Glu	Gly				
				405					410						

<210> 8277
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8277
 Arg Ile Leu Lys Leu Cys Asp Met Ile Gln Glu Ile Ile Asp Met Ile
 1 5 10 15
 Lys Glu Leu Ser Gly Ser Asp Ile Leu Cys Leu Ser Phe Tyr Cys Gly
 20 25 30
 Phe Ile Leu Ile Leu Ser His Arg Ser Asn Glu Lys Ala Ser Val Tyr
 35 40 45
 Gly Glu Glu Lys Val Pro Asp Asn Ser Pro Glu Pro Glu Lys
 50 55 60

<210> 8278
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 8278
 Ser Arg Gln Asn Ile Lys Glu Asp Ser Pro Met Lys Leu Leu Leu Ala
 1 5 10 15
 Leu Leu Leu Ser Cys Leu Pro Phe Asn Gly Ser Asn Asp Gly Lys Glu
 20 25 30
 Leu Leu Asp Lys Ala Leu Glu Arg Cys Glu Arg Leu Glu Thr Leu Glu
 35 40 45
 Ser Tyr Arg Asp Ile Leu Ser Arg Tyr Gly Val Ser Asp Arg Ile Pro
 50 55 60
 Leu Thr Cys Pro Leu Lys Asp Arg Phe Arg Lys Ser Ser Gly Phe Gly
 65 70 75 80
 Ile Arg Ile His Pro Ile Thr Gly Lys Arg Ser Phe His Ser Gly Ile
 85 90 95
 Asp Met Gly Val Glu Leu Ala Ala Pro Gly Leu Arg His Arg Ser Gly
 100 105 110
 Asn Gly Phe Phe Arg Glu Lys Glu Arg Gly Val Arg Lys Met Cys His
 115 120 125
 Tyr Thr Pro Phe Leu Trp Leu
 130 135

<210> 8279
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8279
 Lys Arg Cys Asp Met Glu Thr Ile Trp Glu Lys Val Asp Tyr Leu Gly
 1 5 10 15
 Arg Ile Leu Cys Cys Ile Ile Met Gly Ile Ala Tyr Ile Leu Ile Met
 20 25 30
 Ile Ala Pro Leu Tyr Ala Ser Arg His Glu Gln Ser Gly Gln Arg Ser
 35 40 45
 Asp Glu Lys Ala Phe Val Asp Glu Glu Glu Lys Val Pro Asp Asn Gly
 50 55 60
 Pro Glu Pro Glu Lys
 65

<210> 8280
 <211> 297

<212> PRT

<213> B.fragilis

<400> 8280

Glu Phe Cys Cys Pro Glu Ile Gln Thr His Ile Leu His Asp Lys Met
 1 5 10 15
 Ile Met Lys Lys Glu Lys Thr Tyr Ser Arg Ala Pro Leu Pro Phe Val
 20 25 30
 Gly Gln Lys Arg Met Phe Val Ser Glu Phe Lys Lys Ile Leu Lys His
 35 40 45
 Phe Asp Asp Lys Thr Ile Phe Val Asp Leu Phe Gly Gly Ser Gly Leu
 50 55 60
 Leu Ser His Ile Thr Lys Arg Glu Arg Pro Asp Ala Val Val Ile Tyr
 65 70 75 80
 Asn Asp His Asp Asn Tyr Arg Gly Arg Leu Glu Asn Ile Gly Arg Thr
 85 90 95
 Asn Thr Leu Leu Gly Asp Leu Arg Lys Ile Val Gly Ile Tyr Pro His
 100 105 110
 Asn Gln Lys Ile Thr Gly Lys Met Arg Glu Ala Phe Leu Glu Arg Ile
 115 120 125
 Arg Leu Glu Glu Thr Thr Gly Phe Val Asp Tyr Leu Thr Leu Ser Thr
 130 135 140
 Ser Leu Leu Phe Ser Gly Lys Tyr Ala Gln Asn Met Glu Glu Leu Glu
 145 150 155 160
 His Leu Cys Phe Tyr Asn Lys Ile Arg Gln Ala Asp Tyr Arg Cys Asp
 165 170 175
 Gly Tyr Leu Asp Gly Leu Glu Val Val Cys Tyr Asp Tyr Lys Glu Leu
 180 185 190
 Ala Glu Thr Tyr Arg Val Leu Pro Gly Val Val Phe Leu Val Asp Pro
 195 200 205
 Pro Tyr Met Gly Thr Asp Ile Ser Thr Tyr Arg Met Asp Trp Lys Leu
 210 215 220
 Gly Asp Tyr Leu Asp Val Leu Pro Val Leu Lys Gly His Pro Phe Val
 225 230 235 240
 Tyr Phe Thr Ser Ser Lys Ser Pro Ile Leu Asp Phe Cys Lys Trp Met
 245 250 255
 Glu Glu His Pro Gly Thr Gly Asn Pro Phe Lys Gly Thr Gly Arg Ser
 260 265 270
 Ala Ile Thr Ala Arg Met Asn Tyr Asn Ser Ser Tyr Thr Asp Ile Met
 275 280 285
 Leu Tyr Asn Asn Met Ala Cys Thr Ala
 290 295

<210> 8281

<211> 271

<212> PRT

<213> B.fragilis

<400> 8281

Ser Arg Arg Cys Lys Arg Met Lys Thr Ile Thr Thr Ala Cys Val Asn
 1 5 10 15
 His Lys Gly Gly Val Ala Lys Thr Thr Ser Leu Leu Asn Leu Ala Ala
 20 25 30
 Gly Ile Ala Arg Met His Lys Lys Arg Val Cys Ile Ile Asp Ala Asp
 35 40 45
 Pro Gln Ala Asn Thr Thr Met Ala Ala Phe Gly Glu Glu Met Ala Ser
 50 55 60
 Leu Pro Arg Glu Val Leu Leu Glu Ser Ala Leu Gln Asp Cys Met Gln
 65 70 75 80

Asp Thr Pro Pro Lys Leu Lys Pro Gln Lys Trp Leu Glu Lys Val Asp
 85 90 95
 Ile Leu Pro Ala Ser Leu Asp Leu Ala Ala Thr Glu Val Ile Met Tyr
 100 105 110
 Thr Thr Pro Gly Arg Glu Phe Leu Phe Arg Glu Ile Val Lys Gly Leu
 115 120 125
 Glu Glu Lys Tyr Asp His Ile Leu Ile Asp Cys Pro Pro Ser Leu Gly
 130 135 140
 Ile Ile Thr Gln Asn Ala Leu Met Ala Ser Asp Tyr Val Ile Ile Pro
 145 150 155 160
 Thr Asp Gly Asn Tyr Phe Ala Met Lys Gly Ile Glu Lys Ile His Tyr
 165 170 175
 Ile Ile Gly Leu Leu Lys Arg Lys Leu Gly Ala Glu Val Arg Ile Leu
 180 185 190
 Gly Tyr Phe Met Thr Lys Tyr Asn Ala Arg Arg Lys Leu Asp Val Asp
 195 200 205
 Ile Arg Glu Ser Leu Val Arg Ser Leu Gly Asp Gly Val Phe Glu Thr
 210 215 220
 Val Ile Arg Ser Asn Val Ala Leu Gly Glu Ala Gln Tyr Lys Ala Gln
 225 230 235 240
 Ser Ile Phe Asp Tyr Ala Pro Ser Ser Asn Gly Ala Asp Asp Tyr Arg
 245 250 255
 Glu Leu Val Lys Glu Phe Leu Gly Arg Ile Lys Lys Ile Asn Lys
 260 265 270

<210> 8282

<211> 332

<212> PRT

<213> B.fragilis

<400> 8282

Pro Ala Ile Arg Ala Leu Met Thr Arg Glu Gly Lys Ser Arg Thr Ala
 1 5 10 15
 Ile Leu Ala Gly Leu Ala Ile Val Val Val Leu Leu Val Trp Val Ile
 20 25 30
 Ile Ala Ser Leu Pro Asp Ser Gly Ser Lys Glu Pro Glu Thr Gly Glu
 35 40 45
 Val Ile Leu Arg Thr Arg Ile Lys Glu Ser Phe Thr Leu Asp Asp Met
 50 55 60
 Leu Gln Lys Val Gly Lys Glu Asn Thr Ser Lys Ser Ala Ser Leu Ser
 65 70 75 80
 Gly Phe Asp Pro Val Thr Glu Glu Pro Ala Asp Thr Ala Gly Asn Glu
 85 90 95
 Arg Glu Ile Arg Arg Ile Gln Glu Leu Ile Arg Asp Asn Glu Arg Glu
 100 105 110
 Leu Gly Ala Gly Ile Thr Val Pro Val Gln Gln Pro Val Ala Ser Gly
 115 120 125
 Gly Lys Glu Lys Pro Ala Leu Gln Glu Lys Lys Glu Glu Glu Val Arg
 130 135 140
 Pro Gly Gln Arg Lys Ala Val Asp Ser Val Pro Arg Ala Pro Ala Arg
 145 150 155 160
 Arg Gly Phe Asn Thr Val Arg Leu Val Arg Gln Glu Glu Arg Asn Ala
 165 170 175
 Ile Lys Ala Phe Val His Ser Thr Gln Thr Val Met Val Gly Ser Thr
 180 185 190
 Leu Lys Met Gln Leu Ala Glu Asn Cys Leu Thr Asp Asp Gly Gln Arg
 195 200 205
 Ile Arg Lys Gly Thr Pro Val Phe Gly Glu Val Thr Gly Ile Asn Gly
 210 215 220

Glu Arg Val Leu Val Lys Ile Thr Ser Val Asn Leu Gly Gly Asn Ile
 225 230 235 240
 Leu Pro Phe Asp Lys Gln Val Tyr Ser Glu Asp Ala Ile Gln Gly Ile
 245 250 255
 Tyr Val Pro Gly Asn Val Lys Ala Glu Thr Ala Gln Glu Ala Gly Ala
 260 265 270
 Ala Gly Ile Ser Gly Ala Asn Thr Asn Ile Ser Gly Gly Phe Asp Met
 275 280 285
 Gly Ser Gln Leu Val Ala Gly Ala Ala Asn Ser Val Ile Asn Ala Thr
 290 295 300
 Lys Ser Ala Ala Ser Lys Asn Ile Arg Lys Val Lys Val Thr Ile Lys
 305 310 315 320
 Thr Asn Tyr Arg Ile Leu Leu Arg Gln Ser Lys Glu
 325 330

<210> 8283

<211> 97

<212> PRT

<213> B.fragilis

<400> 8283

Lys Lys Gly Arg Ile Met Lys Asp Phe Thr Ser Lys Gly Ile Ser Leu
 1 5 10 15
 Glu Asn Met Val Gly Glu Thr Pro Gly Lys Glu Lys Gly Met Thr Gly
 20 25 30
 Lys Thr Ser Pro Lys Thr Asn Gln Thr Val Ala Leu Thr Glu Asp Leu
 35 40 45
 Lys Trp Glu Leu Arg Thr Phe Ala Ser Asp His Arg Cys Arg Gly Val
 50 55 60
 Lys Thr Leu Leu Glu Thr Met Ile Glu Cys Phe Val Arg Glu Asp Gly
 65 70 75 80
 Thr Leu Asp Arg Asp Lys Leu Glu Gly Phe Trp Arg Glu Tyr Val Glu
 85 90 95
 Lys

<210> 8284

<211> 207

<212> PRT

<213> B.fragilis

<400> 8284

Asn Met Lys Arg Ile Leu Thr Leu Ile Leu Ser Phe Cys Cys Leu Leu
 1 5 10 15
 Ser Phe Val Ser Cys Glu Lys Lys Glu Ile Ala Asp Thr Phe Glu Ala
 20 25 30
 Asn Ile Arg Lys Leu His Gly Asp Tyr Arg Leu Thr Asp Ile His Trp
 35 40 45
 Pro Gly Leu Ala Val Asp Leu Asn His Asp Gly Ile Gly His Trp Ala
 50 55 60
 Leu Leu Tyr Glu Phe Gln Asn Lys Ile Gly Tyr Tyr Glu Pro Asp Tyr
 65 70 75 80
 Thr Ala Ser Val Ser Asp Gly Met Val Phe Ser His Asp Glu Thr Trp
 85 90 95
 Ala Arg Pro Ala Thr Ala Phe Asn Leu Thr Ile Pro Cys Pro Arg Tyr
 100 105 110
 Ile Val Ser Glu Gly Lys Trp Val Cys Ser Gly Ile His Gly Ile Gln
 115 120 125
 Val Thr Leu Arg Ala Asp Val Asp Ser Phe Ser Leu Gln Ser Asn Cys

130 135 140
 Ser Arg Ile Phe Pro Ala Tyr Asn Asp Arg Asp Val Phe Leu Ala
 145 150 155 160
 Asn Ile Lys Asp Ile Ser Leu Val Val Leu Ser Tyr Asp Ala Ala Ser
 165 170 175
 Phe Arg Ile Gly Val His Cys Thr Leu Pro Tyr Asp Arg Pro Asp Gly
 180 185 190
 Thr Gln Glu Leu Asn Glu Asn Tyr Leu Tyr Tyr Glu Tyr Ser Arg
 195 200 205

<210> 8285

<211> 260

<212> PRT

<213> B.fragilis

<400> 8285

Glu Lys Lys Ser Ser Cys Ser Leu Ile Phe Pro Ala Gly Ile Thr Tyr
 1 5 10 15
 Val Asp Tyr Gly Ser Thr Asn Val Glu Val Asp Lys Pro Glu Gly Val
 20 25 30
 Asp Asn Ile Leu Ala Val Lys Ala Val Gln Pro Tyr Lys Glu Asp Thr
 35 40 45
 Asn Ile Ser Val Val Leu Glu Gly Gly Lys Phe Tyr Thr Phe Asp Leu
 50 55 60
 Arg Tyr Val Pro Ala Pro Glu Arg Phe Ser Phe Val Ile Asp Lys Glu
 65 70 75 80
 Asp Thr Gln Arg Val Ala Ile Leu Asp Glu Lys Glu Arg Ser Tyr Gly
 85 90 95
 Gln Lys Glu Arg Ile Arg Glu Ala Ile Ala Lys Arg Thr Pro Leu Asp
 100 105 110
 Leu Gly Leu Lys Asp Lys Asn Ser Gly Val Glu Phe Glu Val Gly Asn
 115 120 125
 Ile Phe Ile Asp Gly Asp Ile Leu Leu Leu Arg Met Thr Leu Ile Asn
 130 135 140
 Arg Thr Gln Ile Gly Tyr Thr Thr Asp Phe Met Arg Phe Tyr Ile Gln
 145 150 155 160
 Asp Ala Lys Ile Arg Lys Lys Thr Ala Val Gln Gln Leu Glu Gln Asn
 165 170 175
 Ile Leu Phe Thr Phe Asp Tyr Pro Glu Val Pro Ala His Glu Ser
 180 185 190
 Arg Thr Phe Thr Val Ala Met Asn Lys Phe Thr Ile Pro Asp Lys Lys
 195 200 205
 Arg Leu Ile Ile Glu Ile Gln Glu Lys Asn Gly Gly Arg His Phe Leu
 210 215 220
 Tyr Lys Leu Lys Asn Lys Ser Leu Leu Thr Ala Glu Glu Val Phe Arg
 225 230 235 240
 Ser Arg Lys Gln Gln Glu Thr Glu Asp Glu Ala Asp Lys Ile Leu Arg
 245 250 255
 Arg Ile Ala Arg
 260

<210> 8286

<211> 134

<212> PRT

<213> B.fragilis

<400> 8286

Val Asp Met Arg Leu Lys Pro Ile Tyr Ile Thr Thr Leu Leu Leu Leu
 1 5 10 15

Phe Phe Leu Ser Gly Arg Ala Gln Lys Ile Glu Glu Leu Thr Ala Val
 20 25 30
 Pro Leu Gln Ile Gly Tyr Glu Lys Thr Leu His Leu Ile Phe Pro Thr
 35 40 45
 Glu Val Lys Tyr Tyr Ser Ile Gly Gly Asp Tyr Val Ile Gly Glu Lys
 50 55 60
 Val Val Asn Cys Pro Gly Ile Ile Arg Leu Lys Ala Ala Glu Glu Asn
 65 70 75 80
 Phe Pro Gly Glu Thr Thr Leu Ser Val Val Thr Ala Asp Thr Lys Phe
 85 90 95
 Tyr Ser Tyr Ser Ile Ser Tyr Asn Ala His Pro Ala Gln Ser Tyr Val
 100 105 110
 Arg Ile Gly Gly Glu Ala Pro Ala Pro Glu Tyr Ala Ala Gly Arg Lys
 115 120 125
 Arg Lys Ala Ala Val His
 130

<210> 8287

<211> 117

<212> PRT

<213> B.fragilis

<400> 8287

Asn His Thr Gly Met Ala Met Thr Ile Glu Gln Glu Ile Glu Gln Leu
 1 5 10 15
 Val Leu Lys Cys Ile Ala Leu Asp Gly Leu Lys Ala Cys Pro Lys Asp
 20 25 30
 Leu Ala Phe Leu Glu Lys Tyr Gly Leu Lys Asn Leu Tyr Phe Phe Ser
 35 40 45
 Leu Glu Tyr Ala Met Glu Gly Thr Asp Ala Thr Val Leu Asp Ser Lys
 50 55 60
 Ala Lys Gly Leu Ile Arg Trp Tyr Leu Tyr Ser Thr Asp Phe Pro Leu
 65 70 75 80
 Leu Arg Gln Lys Tyr Glu Arg Glu Gly Lys Ala Glu Leu Met Lys Cys
 85 90 95
 Leu Tyr Leu Glu Glu Arg Tyr Phe Thr Glu Phe Leu Lys Leu Ser Gly
 100 105 110
 Gln Glu Glu Gly Leu
 115

<210> 8288

<211> 64

<212> PRT

<213> B.fragilis

<400> 8288

Ser Phe Trp Gly Lys Arg Gly Ile Glu Lys Glu Ser Val Pro Arg Val
 1 5 10 15
 Gln Val Gly Gly Ile Val Trp Val Glu Ser His Ile Val Asn Gly Lys
 20 25 30
 Phe Ile Ala Ser Lys Leu Gly Val Lys Leu Thr Pro Pro Asn Asn Pro
 35 40 45
 Gly Ile Pro His Lys Arg Arg Gly Ser Ile Ala Cys Ile Gln Met Pro
 50 55 60

<210> 8289

<211> 65

<212> PRT

<213> B.fragilis

<400> 8289

Gln Ala Gly Gly Phe Phe Leu Glu Leu Leu Phe Pro Ile Lys Ile Pro
 1 5 10 15
 Trp Lys Phe Leu Leu Ser Tyr Gly Ser Ile Ser Leu Lys Thr Ala Arg
 20 25 30
 Tyr Asn Thr Trp Leu Gln Phe Tyr Cys Ala Val Ala Phe Pro Met Lys
 35 40 45
 Glu Ile Arg Tyr Leu Thr Lys Tyr Ser Thr Leu Lys Ser Ile Leu Leu
 50 55 60
 Ile
 65

<210> 8290

<211> 393

<212> PRT

<213> B.fragilis

<400> 8290

Gln Lys Ser Met Ile His Pro Leu Leu Thr Thr Ile Lys Lys Arg Phe
 1 5 10 15
 Ile Met Lys Lys Val Arg Phe Leu Leu Ala Ala Met Val Ala Met
 20 25 30
 Phe Thr Gly Cys Gln Lys Glu Val Val Glu Gln Glu Leu Asp Asn Asn
 35 40 45
 Lys Pro Thr Pro Thr Gly Asp Thr Arg Ile Ile Ile Glu Gly Glu Gly
 50 55 60
 Met Ile Gly Pro Ala Thr Arg Ser Ser Asp Gly Lys Val Glu Phe Glu
 65 70 75 80
 Gly Gly Tyr Ala Thr Gly Ala Gly Leu Tyr Asp Gly Lys Lys Ala Val
 85 90 95
 Pro Val Glu Ala His Pro Asp Ala Gly Tyr Glu Val Asn Tyr Phe Tyr
 100 105 110
 Gly Gly Pro Glu Asn Gln Pro Lys Lys Tyr Asp Tyr Ala Gln Ser Gly
 115 120 125
 Thr Ser Ala Phe Asn Val Tyr Leu Glu Gly Gln Asp His Thr Phe His
 130 135 140
 Cys Gly Phe Lys Glu Lys Lys Arg Asp Leu Thr Val Asn Ala Gly Thr
 145 150 155 160
 Gly Gly Ser Val Ser Pro Ser Gly Thr Asn Ser Tyr Arg Val Glu Lys
 165 170 175
 Pro Ile Ser Ile Thr Ala Thr Pro Asp Ser Gly Tyr Glu Phe Ala Gly
 180 185 190
 Trp Thr Val Thr Gln Gly Asp Val Thr Ile Glu Asn Pro Gly Ser Pro
 195 200 205
 Ala Thr Thr Ala Thr Leu His Asn Asp Asn Ser Thr Ile Thr Ala Asn
 210 215 220
 Phe Lys Ser Gly Ala Glu Leu Val Phe Thr Val Arg Ala Ser Ala Asn
 225 230 235 240
 Lys Ile Val Pro Met Pro Thr Leu Gly Ser Gly Pro Tyr Thr Val Asp
 245 250 255
 Tyr Gly Asp Gly Lys Val Ala His Glu Val Asn Leu Arg Ala Pro Gly
 260 265 270
 Tyr Thr Gln Tyr Pro Gly Ser Tyr His Thr Tyr Ser Ala Asp Gly Glu
 275 280 285
 Tyr Thr Val Thr Ile Lys Gly Pro Ala Ala Thr Ala Phe Ser Phe Arg
 290 295 300
 Gly Thr Arg Asn Ser Asp Leu Gln Tyr Ile Asn Pro Cys Pro Ala Lys
 305 310 315 320

Ser Ile Leu Lys Asn Thr Ile Asp Ile Ser Cys Val Thr Ser Leu Glu
 325 330 335
 Asp Ala Phe Ser Gly Met Lys Ser Leu Glu Ser Ile Glu Cys Asp Leu
 340 345 350
 Leu Glu Ser Cys Lys Gly Arg Val Thr Thr Cys Ala Asn Ile Phe Asp
 355 360 365
 Gln Cys Thr Asn Leu His Thr Ile Tyr Asn Gly Leu Phe Glu Gly Phe
 370 375 380
 Asp Lys Cys Thr Asp Phe Ser Leu Ala
 385 390

<210> 8291
 <211> 141
 <212> PRT
 <213> B.fragilis

<400> 8291
 Glu Leu Val Leu Leu Val Ile Gly Thr Glu Glu Glu Thr Gly Arg Ile
 1 5 10 15
 Phe Arg Lys Ala Arg Ser Gly Met Asp Gly Gly Thr Leu Thr Gln Asn
 20 25 30
 Pro Tyr Phe Pro Asp Val Ile Ala Ile Asp Asn Ala Gln Asp Gly Gly
 35 40 45
 Glu Pro Asp Met Val Leu Leu Thr Val Gly Ala Tyr Val Asp Asp Leu
 50 55 60
 Phe Lys Leu Arg Leu Val Asp Asn Ala Glu Leu Gln Arg Ile Ala Ile
 65 70 75 80
 Gly Thr Val Arg Leu Val Phe Gly Lys Asn Gly Ile Cys Val Arg Leu
 85 90 95
 Val Asp Gln Glu Gln Gly Thr Gly Thr Val Phe Leu Lys Gly Lys Ala
 100 105 110
 Cys Leu Ala Cys Ser Arg Asn Met Pro Phe Leu Leu Glu Cys Asp Phe
 115 120 125
 Gln Glu Val Ser Val Gln Glu Ala Leu Ala Asp Cys Pro
 130 135 140

<210> 8292
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 8292
 Arg Glu Val Phe His Ile Ser Gly Lys Asp Val Ile Gln Glu Gln Phe
 1 5 10 15
 Ser Lys Gln Glu Asp Thr Phe Ser Ile Ala Leu Gln Phe Ser Lys Thr
 20 25 30
 Leu Pro Gly Thr Val Val Thr Trp Asp Cys Arg Lys Val Pro Leu Lys
 35 40 45
 Lys Val Ala Phe Thr His Phe Ala Asn Lys Arg Ser Gly Thr Val Leu
 50 55 60
 Met Phe Ser Ser Ser Lys Val Glu Ala Asn Ser Cys Ala Phe Thr Gln
 65 70 75 80
 Ser Ser Asn Asn Pro Ala Gly Ile Asp Lys Ile Leu Gly Ile Ala Glu
 85 90 95
 Lys Val Glu Leu Asn Phe Thr Ala Glu Val His Pro Leu Asn Val Phe
 100 105 110
 Ala Gly Ile Glu Leu Arg Ala Ala
 115 120

<210> 8293
 <211> 230
 <212> PRT
 <213> B.fragilis

<400> 8293

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Gln Lys Arg Ser His Phe His Ser Val Ile Ile Ile Phe Thr Tyr Ile
1           5           10           15
Cys Asn Gln Thr Lys Ile Ser Tyr Thr Gln Thr Arg Ile Pro Asn Leu
          20           25           30
Leu Ile Met Lys Lys Leu Leu Leu Thr Thr Leu Leu Ile Phe Gly Thr
          35           40           45
Ala Ile Val His Gly Gln Asp Lys Met Gln Phe Ser Ile Ile Gly Gly
          50           55           60
Tyr Glu His Phe Lys Lys Glu Asn Pro His Asn Gln Thr Ala Gly Tyr
65           70           75           80
Gly Leu Gly Cys Glu Phe Lys Tyr Tyr Phe Tyr Asn Arg Leu Tyr Ala
          85           90           95
Leu Ala Asn Phe His Ala Gly Ile Tyr Asn Glu Phe Thr Pro Arg Thr
          100          105          110
Ala Met Ala Glu Ile Gly Glu Val Asp Phe Ser Met His Trp Arg Thr
          115          120          125
Arg Glu Tyr Lys Gly Gly Ala Gly Met Gly Ile Asp Leu Leu Lys Thr
          130          135          140
Gln Arg His Asn Ile Tyr Thr Gln Ala Thr Phe Gly Leu Ala Lys Leu
145          150          155          160
Lys Gln Ser Val Pro Val Ile His Ser Tyr Arg Pro Thr Val Glu Met
          165          170          175
Gly Thr Lys Asn Thr Tyr Leu Leu Arg Tyr Ala Thr Ser Ile Ser Ile
          180          185          190
Gly Tyr Asp Tyr Arg Val Ser Lys Ser Phe Ser Ile Gly Leu Asn Tyr
          195          200          205
Thr Gly Trp Trp Val Ala Asp Val Ala Tyr Arg Asn Thr Leu Asn Ala
          210          215          220
Lys Ile Gly Tyr Asn Phe
225          230

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<210> 8294
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 8294

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Phe Leu Tyr Pro Val Ser Pro Asp Thr Pro Leu Phe Ile Tyr Lys Ile
1           5           10           15
Thr Leu Met Lys Ile Lys Val Gly Phe Gly Phe Asp Val His Gln Leu
          20           25           30
Val Glu Gly Arg Glu Leu Trp Leu Gly Gly Ile Leu Leu Glu His Glu
          35           40           45
Lys Gly Leu Leu Gly His Ser Asp Ala Asp Val Leu Val His Ala Ile
          50           55           60
Cys Asp Ala Leu Leu Gly Ala Ala Asn Met Arg Asp Ile Gly Tyr His
65           70           75           80
Phe Pro Asp Asn Ala Gly Glu Tyr Lys Asn Ile Asp Ser Lys Ile Leu
          85           90           95
Leu Lys Lys Thr Val Glu Leu Ile Ala Ala Lys Gly Tyr Gln Ile Gly
          100          105          110
Asn Ile Asp Ala Thr Ile Cys Ala Glu Arg Pro Lys Leu Lys Ala His
          115          120          125

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Ile Pro Ser Met Gln Gln Val Leu Ala Glu Val Met Gly Ile Asp Ala
 130 135 140
 Asp Asp Ile Ser Ile Lys Ala Thr Thr Thr Glu Lys Leu Gly Phe Thr
 145 150 155 160
 Gly Arg Glu Glu Gly Ile Ser Ala Tyr Ala Thr Val Leu Ile Asn Arg
 165 170 175
 Val

<210> 8295
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 8295
 Gly Lys Met Pro Met Leu Ile Leu Leu Ser Cys Ala Lys Thr Met Ser
 1 5 10 15
 Asp Val Ser Lys Thr Lys Thr Pro Leu Thr Thr Phe Pro Gly Phe Arg
 20 25 30
 Lys Glu Ala Ala Glu Val Ala Leu Gln Met Ser Gln Phe Ser Val Glu
 35 40 45
 Glu Leu Glu Arg Leu Leu Lys Val Asn Pro Lys Ile Ala Val Glu Asn
 50 55 60
 Tyr Arg Arg Tyr Gln Ala Phe His Ser Glu Gly Thr Arg Glu Leu Pro
 65 70 75 80
 Ala Leu Leu Ala Tyr Thr Gly Ile Val Phe Lys Arg Val His Pro Gln
 85 90 95
 Asp Phe Ser Glu Glu Asp Phe Cys Tyr Ala Gln Asp His Leu Arg Leu
 100 105 110
 Thr Ser Phe Cys Tyr Gly Leu Leu Arg Pro Leu Asp Met Ile Arg Pro
 115 120 125
 Tyr Arg Leu Glu Gly Asp Val Arg Leu Pro Glu Pro Gly Asn Arg Thr
 130 135 140
 Met Phe Asp Tyr Trp Lys Pro Ile Leu Thr Asp Arg Phe Ile Ala Asp
 145 150 155 160
 Ile Lys Lys Ala Gly Gly Val Leu Cys Asn Leu Ala Ser Asp Glu Met
 165 170 175
 Arg Gly Leu Phe Asp Trp Lys Arg Val Glu Lys Glu Val Arg Val Ile
 180 185 190
 Thr Pro Glu Phe His Val Trp Lys Asn Gly Lys Leu Ala Thr Val Val
 195 200 205
 Val Tyr Thr Lys Met Ser Arg Gly Glu Leu Thr Arg Tyr Ile Leu Lys
 210 215 220
 Asn Arg Ile Glu Ser Val Glu Gln Leu Lys Thr Phe Ala Trp Glu Gly
 225 230 235 240
 Phe Glu Phe Asn Glu Gln Leu Ser Asp Glu Thr Lys Tyr Val Phe Thr
 245 250 255
 Asn Gly Lys Thr Glu
 260

<210> 8296
 <211> 477
 <212> PRT
 <213> B.fragilis

<400> 8296
 Gly Gln Lys Phe Asn Phe Tyr Ser Asn Lys Lys Met Ser Thr Glu Asn
 1 5 10 15
 Glu Glu Trp Arg Glu Asp Ser Lys Ser Glu Asn Thr Asp Ala Gly Arg

					20						25						30	
Asp	Gly	Asn	Arg	Ser	Phe	Asn	Arg	Glu	Gly	Gly	Tyr	Ser	Arg	Pro	Ser			
					35						40						45	
Tyr	Asn	Arg	Glu	Gly	Gly	Asp	Arg	Pro	Tyr	Arg	Pro	Arg	Phe	Asn	Ser			
					50						55						60	
Asn	Ser	Glu	Asp	Arg	Pro	Gln	Arg	Ser	Tyr	Gly	Asp	Arg	Pro	Gln	Arg			
65						70						75						80
Pro	Ser	Tyr	Asn	Arg	Glu	Gly	Gly	Asp	Arg	Pro	Tyr	Arg	Pro	Arg	Phe			
					85						90						95	
Asn	Ser	Glu	Gly	Gly	Asp	Arg	Pro	Gln	Arg	Ser	Tyr	Gly	Asp	Arg	Pro			
					100						105						110	
Gln	Arg	Pro	Ser	Tyr	Asn	Arg	Glu	Gly	Gly	Asp	Arg	Pro	Tyr	Arg	Pro			
					115						120						125	
Arg	Phe	Asn	Ser	Glu	Gly	Gly	Asp	Arg	Pro	Gln	Arg	Ser	Tyr	Gly	Asp			
130						135						140						
Arg	Pro	Gln	Arg	Pro	Ser	Tyr	Asn	Arg	Glu	Gly	Gly	Asp	Arg	Pro	Tyr			
145						150						155						160
Arg	Pro	Arg	Phe	Asn	Ser	Glu	Gly	Gly	Asp	Arg	Pro	Gln	Arg	Ser	Tyr			
					165						170						175	
Gly	Asp	Arg	Pro	Gln	Arg	Pro	Ser	Tyr	Asn	Arg	Glu	Gly	Gly	Asp	Arg			
					180						185						190	
Pro	Tyr	Arg	Pro	Arg	Tyr	Asn	Asn	Asp	Asn	Arg	Ser	Gln	Gly	Phe	Ser			
					195						200						205	
Arg	Pro	Ile	Arg	Arg	Thr	Gly	Asp	Tyr	Asp	Pro	Asn	Ala	Lys	Tyr	Ser			
210						215						220						
Lys	Lys	Lys	Gln	Ile	Glu	Tyr	Lys	Glu	Gln	Phe	Val	Asp	Pro	Asn	Glu			
225						230						235						240
Pro	Ile	Arg	Leu	Asn	Lys	Phe	Leu	Ala	Asn	Ala	Gly	Val	Cys	Ser	Arg			
					245						250						255	
Arg	Glu	Ala	Asp	Glu	Phe	Ile	Thr	Ala	Gly	Val	Val	Ser	Val	Asn	Gly			
					260						265						270	
Glu	Val	Val	Thr	Glu	Leu	Gly	Thr	Lys	Ile	Lys	Arg	Ala	Asp	Val	Val			
					275						280						285	
Lys	Phe	His	Asp	Glu	Thr	Val	Ser	Ile	Glu	Arg	Lys	Val	Tyr	Val	Leu			
290						295						300						
Leu	Asn	Lys	Pro	Lys	Asp	Cys	Val	Thr	Thr	Ser	Asp	Asp	Pro	Gln	Ala			
305						310						315						320
Arg	Leu	Thr	Val	Met	Asp	Leu	Val	Lys	Gly	Ala	Cys	Ala	Glu	Arg	Ile			
					325						330						335	
Tyr	Pro	Val	Gly	Arg	Leu	Asp	Arg	Asn	Thr	Thr	Gly	Val	Leu	Leu	Leu			
					340						345						350	
Thr	Asn	Asp	Gly	Asp	Leu	Ala	Ser	Lys	Leu	Thr	His	Pro	Lys	Tyr	Leu			
					355						360						365	
Lys	Lys	Lys	Ile	Tyr	His	Val	Tyr	Leu	Asp	Lys	Asn	Leu	Thr	Lys	Ala			
370						375						380						
Asp	Met	Asp	Gln	Ile	Ala	Ala	Gly	Ile	Gln	Leu	Glu	Asp	Gly	Glu	Ile			
385						390						395						400
His	Ala	Asp	Ala	Ile	Ser	Tyr	Ser	Asp	Glu	Val	Lys	Arg	Asp	Gln	Val			
					405						410						415	
Gly	Ile	Glu	Ile	His	Ser	Gly	Lys	Asn	Arg	Ile	Val	Arg	Arg	Ile	Phe			
					420						425						430	
Glu	Ser	Leu	Gly	Tyr	Lys	Val	Val	Lys	Leu	Asp	Arg	Val	Phe	Phe	Ala			
					435						440						445	
Gly	Leu	Thr	Lys	Lys	Gly	Leu	Arg	Arg	Gly	Glu	Trp	Arg	Tyr	Leu	Thr			
450						455						460						
Glu	Gln	Glu	Val	Asn	Phe	Leu	Arg	Met	Gly	Ser	Phe	Glu						
465						470						475						

<211> 208
 <212> PRT
 <213> B.fragilis

<400> 8297

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Lys Ile Arg Leu Gly Thr Thr Tyr Ser Leu Asp His Pro Glu Lys Phe
1           5           10           15
Leu Ser Glu Lys Ala Ile Ala Arg Arg Gln Arg Gln Gln Leu Pro Val
           20           25           30
Asp Ser Thr Asp Leu Pro Val Cys Arg Arg Tyr Val Asp Ala Ile Arg
           35           40           45
Asp Arg Gly Val Lys Ile Val Ala Met Gly Lys Trp Asp Asn Phe Val
           50           55           60
Thr Val Ser Cys Asn Asp Ser Ala Val Ile Gly Glu Ile Ala Ala Leu
65           70           75           80
Pro Phe Val Arg Ala Thr Glu Lys Ile Trp Val Ala Pro Ser Lys Pro
           85           90           95
Ala Ala Glu Asp Lys Arg Asp Ser Leu Ala Asn Ser Pro Leu Lys Ser
           100          105          110
Glu Asn Tyr Tyr Ser Pro Ala Leu Arg Gln Ile Glu Ile Ser Tyr Gly
           115          120          125
Glu Lys Leu His Glu Ala Gly Phe Lys Gly Gln Gly Met Thr Ile Ala
130          135          140
Val Ile Asp Ala Gly Tyr His Asn Val Asp Lys Ile Glu Ala Met Lys
145          150          155          160
Asn Ile Arg Ile Leu Ser Thr Lys Asp Phe Val Lys Pro Gly Ser Asp
           165          170          175
Ile Tyr Ala Lys Gly Ser His Gly Met Ala Val Leu Ser Cys Met Ala
           180          185          190
Met Asn Asp Pro Tyr Leu Met Val Gly Thr Gly Pro Glu Ala Ser Tyr
           195          200          205

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<210> 8298
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 8298

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Ile Val Lys Thr Val Asn Lys Met Thr Ser Gln Lys Ser Gln Asn Ser
1           5           10           15
Asn Met Leu Leu Ala Phe Leu Thr Leu Leu Gly Val Ile Val Leu Val
           20           25           30
Ala Val Val Gly Phe Phe Met Leu Arg Lys Gly Pro Glu Ile Ile Gln
           35           40           45
Gly Gln Ala Glu Val Thr Glu Tyr Arg Val Ser Ser Lys Val Pro Gly
           50           55           60
Arg Ile Leu Glu Phe Arg Val Lys Glu Gly Gln Lys Val Gln Ala Gly
65           70           75           80
Asp Thr Leu Ala Ile Leu Glu Ala Pro Asp Val Ile Ala Lys Met Glu
           85           90           95
Gln Ala Arg Ala Ala Glu Ala Ala Ala Gln Ala Gln Asn Glu Lys Ala
           100          105          110
Ile Lys Gly Ala Arg Gln Glu Gln Ile Gln Ala Ala Tyr Glu Met Trp
           115          120          125
Gln Lys Ala Ile Ala Gly Val Asp Ile Ala Glu Lys Ser Tyr Lys Arg
130          135          140
Val Lys Asn Leu Phe Asp Gln Gly Val Met Pro Ala Gln Lys Leu Asp
145          150          155          160
Glu Val Thr Ala Gln Arg Asn Ala Ala Ile Ala Thr Glu Lys Ala Ala

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<400> 8300

Asp Ser Ser Tyr Ser Ile Glu Arg Cys Gly Ser Met Thr Leu Glu Glu
 1 5 10 15
 Ile Leu Gln Ile Glu Ala Gln Asn Val Asp Cys Ile Phe Leu Tyr Gln
 20 25 30
 Glu Glu Gly Ala Trp Tyr Ala Tyr Glu His Ser Ala Phe Tyr Cys Tyr
 35 40 45
 Ser Leu Leu Gly Ile Leu Asp Ile Asp Trp Leu Pro Cys Pro Asp Gly
 50 55 60
 Val Ser Ser Gly Gln Lys Thr Ile Arg Val Arg Val Ser Glu Pro Asp
 65 70 75 80
 Lys Phe Leu Cys Thr Pro Leu Leu Arg Leu Met Arg Lys Arg Lys Thr
 85 90 95
 Glu Tyr Val Val Leu Cys Lys Ile Ser Cys Gly Gly Phe Tyr Tyr Trp
 100 105 110
 Arg Glu Gln Gln Gln Met Lys Phe Arg Val Leu Gln Glu Arg Glu Ser
 115 120 125
 Ser Cys Thr Lys Ile Asn Glu His Ala Glu
 130 135

<210> 8301

<211> 478

<212> PRT

<213> B.fragilis

<400> 8301

Ser Leu Leu Tyr Lys Leu Ser Leu Pro Leu Cys Leu Ile Thr Gln Glu
 1 5 10 15
 Lys Glu Leu Ile Leu Gln Pro Asp Asn Tyr Leu Asn Asp Asn Met Lys
 20 25 30
 Leu Asp Leu Leu Thr Ala Ile Ser Pro Ile Asp Gly Arg Tyr Arg Gly
 35 40 45
 Lys Ala Glu Ala Leu Ala Ala Tyr Phe Ser Glu Tyr Ala Leu Ile Lys
 50 55 60
 Tyr Arg Val Gln Val Glu Val Glu Tyr Phe Ile Thr Leu Cys Glu Leu
 65 70 75 80
 Pro Leu Pro Gln Leu Lys Gly Ile Asp Lys Ser Val Phe Glu Ser Leu
 85 90 95
 Arg Asn Ile Tyr Arg Asn Phe Thr Glu Ala Asp Ala Gln Arg Ile Lys
 100 105 110
 Asp Ile Glu Ser Val Thr Asn His Asp Val Lys Ala Val Glu Tyr Phe
 115 120 125
 Leu Lys Glu Glu Phe Asp Lys Leu Gly Gly Leu Glu Glu Tyr Lys Glu
 130 135 140
 Phe Ile His Phe Gly Leu Thr Ser Gln Asp Ile Asn Asn Thr Ser Ile
 145 150 155 160
 Pro Leu Ser Ile Lys Glu Ala Leu Glu Gln Val Tyr Tyr Pro Leu Ile
 165 170 175
 Glu Glu Leu Ile Ala Gln Leu Lys Thr Tyr Ala Thr Glu Trp Glu Ser
 180 185 190
 Ile Pro Met Leu Ala Lys Thr His Gly Gln Pro Ala Ser Pro Thr Arg
 195 200 205
 Leu Gly Lys Glu Ile Met Val Phe Val Tyr Arg Leu Glu Arg Gln Leu
 210 215 220
 Ala Thr Leu Lys Ala Cys Pro Val Thr Ala Lys Phe Gly Gly Ala Thr
 225 230 235 240
 Gly Asn Tyr Asn Ala His His Val Ala Tyr Pro Glu Tyr Asp Trp Lys
 245 250 255

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Ala Phe Gly Asn Gln Phe Val Ala Glu Lys Leu Gly Leu Glu Arg Glu
 260 265 270
 Glu Tyr Thr Thr Gln Ile Ser Asn Tyr Asp Asn Leu Ser Ala Ile Phe
 275 280 285
 Asp Ala Met Lys Arg Ile Asn Thr Val Met Ile Asp Met Asn Arg Asp
 290 295 300
 Phe Trp Gln Tyr Ile Ser Met Glu Tyr Phe Lys Gln Lys Ile Lys Ala
 305 310 315 320
 Gly Glu Val Gly Ser Ser Ala Met Pro His Lys Val Asn Pro Ile Asp
 325 330 335
 Phe Glu Asn Ala Glu Gly Asn Leu Gly Ile Ala Asn Ala Ile Leu Glu
 340 345 350
 His Leu Ala Val Lys Leu Pro Val Ser Arg Leu Gln Arg Asp Leu Thr
 355 360 365
 Asp Ser Thr Val Leu Arg Asn Val Gly Thr Pro Phe Gly His Ile Val
 370 375 380
 Ile Ala Ile Gln Ser Ser Leu Lys Gly Leu Arg Lys Leu Leu Leu Asn
 385 390 395 400
 Glu Thr Ala Ile Tyr Arg Asp Leu Asp Asn Cys Trp Ser Val Val Ala
 405 410 415
 Glu Ala Ile Gln Thr Ile Leu Arg Arg Glu Ala Tyr Pro His Pro Tyr
 420 425 430
 Glu Ala Leu Lys Ala Leu Thr Arg Thr Asn Gln Ala Ile Thr Glu Thr
 435 440 445
 Ser Ile Lys Glu Phe Ile Glu Gly Leu Asp Val Asn Glu Glu Ile Lys
 450 455 460
 Lys Glu Leu Arg Val Ile Thr Pro His Ser Tyr Thr Gly Ile
 465 470 475

<210> 8302

<211> 642

<212> PRT

<213> B.fragilis

<400> 8302

Pro Glu Asn His Phe Asn Lys Asn Asn Met Lys Lys Ile Thr Phe Ile
 1 5 10 15
 Ala Ile Leu Leu Cys Ile Cys Ser Leu Thr Lys Ala Lys Glu Lys
 20 25 30
 Val Ile Glu Gln Pro Pro Phe Ile Ala Trp Thr Ser Thr Ile Gln
 35 40 45
 Val Asp Lys Val Val Leu Ser Asp Thr Ala Thr Val Leu Tyr Ile Lys
 50 55 60
 Ala Phe Tyr His Pro Lys Gln Trp Ile Arg Ile Ser Gly Gln Ser Phe
 65 70 75 80
 Leu Lys Asp Asn Asn Gly Glu Thr Tyr Thr Leu Arg Ser Gly Ile Gly
 85 90 95
 Ile Lys Pro Asp Thr Glu Phe Trp Met Pro Glu Ser Gly Glu Gly Glu
 100 105 110
 Phe Arg Leu Val Phe Pro Pro Ile Pro Ala Ser Ala Thr Ser Ile Asp
 115 120 125
 Phe Ser Glu Gly Asp Asn Val Gln Gly Ala Phe Lys Ile Trp Gly Ile
 130 135 140
 Gln Leu Lys Gly Lys Ala Leu Pro Glu Leu Leu Pro Gln Glu Ala
 145 150 155 160
 Ile Val His Lys Ile Asp Ile Asn Asp Glu Leu Pro Glu Pro Lys Ile
 165 170 175
 Glu Tyr Lys Asp Ala Thr Ile Lys Gly Arg Ile Leu Asp Tyr Arg Pro
 180 185 190

Gly Leu Val Ser Lys Ile Val Pro Ile Ile Phe Asp Pro Val Lys Gly
 195 200 205
 Ala Tyr Glu Ser Glu Glu Val Lys Ile Asn Asn Asp Gly Thr Phe Val
 210 215 220
 Thr Arg Val Lys Val Pro Thr Thr Thr Ser Ala Ala Ile Arg Leu Phe
 225 230 235 240
 Gly Lys Met Ile Thr Phe Tyr Ala Val Pro Gly Glu Glu Ser Ser Val
 245 250 255
 Ile Ile Asn Thr Arg Glu Leu Cys Arg Gln Gln Ser Lys Phe His Lys
 260 265 270
 Asp Asp Lys Pro Tyr Gly Glu Ala Val Tyr Phe Gly Gly Thr Leu Ala
 275 280 285
 Gly Leu Ser Gln Glu Tyr Ser Asn Cys Thr Leu Lys Thr Ser Ile Leu
 290 295 300
 Asn Asp Tyr Arg Gln Leu Phe Lys Asp Val Ala Gly Met Asp Ala Gly
 305 310 315 320
 Ala Tyr Lys Asp Phe Ile Tyr Gly Lys Arg Ala Asn Leu Leu Ala Ser
 325 330 335
 Ile Glu Lys Ala Pro Ile Ser Lys Ala Leu Lys Ala Val Leu Gly Asn
 340 345 350
 Gln Val Asp Ala Glu Ala Ala Gln Ala Ile Ser Leu Thr Glu Met Val
 355 360 365
 Ile Lys Gln Ala Tyr Thr Met Glu His Lys Met Ser Lys Glu Glu Ala
 370 375 380
 Arg Glu Tyr Phe Asn Thr Ala Gln Ile Glu Leu Pro Glu Asn Tyr Tyr
 385 390 395 400
 Ala Asn Ala Phe Arg Pro Leu Ala Ser Ile Asn Thr Met Ala Ala Leu
 405 410 415
 Tyr Asn Ser Lys Leu Ser Glu Leu Ile Pro Tyr Tyr Leu Arg Arg Arg
 420 425 430
 Thr Asp Glu Leu Thr Lys Ala Trp Gly Thr Asp Lys Gly Ile Tyr Phe
 435 440 445
 Asp Ile Asn Lys Ala Gly Glu Leu Tyr Ser Ser Ile Lys Glu Phe Thr
 450 455 460
 Pro Leu Thr Ala Glu Gln Glu Val Ile Leu Ala Thr Leu Pro Pro Ala
 465 470 475 480
 Cys Gln Asn Glu Val Arg Asp Ala Asn Asn Gln Leu Leu Lys Thr Leu
 485 490 495
 Glu Ala Asn Lys Lys Lys Thr Gly Phe Thr Ile Asn Glu Val Gly Asp
 500 505 510
 Val Ser Asn Glu Glu Leu Phe Ser Ser Ile Ile Ser Lys Tyr Arg Gly
 515 520 525
 Lys Val Ile Leu Val Asp Phe Trp Ala Thr Trp Cys Gly Pro Cys Arg
 530 535 540
 Met Ala Asn Lys Ala Met Leu Pro Leu Lys Glu Glu Leu Lys Gly Lys
 545 550 555 560
 Asp Ile Val Tyr Leu Tyr Ile Thr Gly Glu Thr Ser Pro Leu Lys Thr
 565 570 575
 Trp Glu Asn Met Ile Pro Asp Ile His Gly Glu His Phe Arg Leu Thr
 580 585 590
 Asp Ala Gln Trp Ser Phe Leu Gly Asp Lys Phe Asp Ile Arg Gly Val
 595 600 605
 Pro Thr Tyr Leu Ile Ile Asp Arg Glu Gly Asn Val Lys His Gln Lys
 610 615 620
 Thr Gly Phe Pro Gly Val Ala Gln Ile Lys Glu Glu Leu Met Lys Val
 625 630 635 640
 Tyr Asp

<210> 8303
 <211> 344
 <212> PRT
 <213> B.fragilis

<400> 8303
 Leu Ile Thr Asn Asp Met Lys Glu Ile Asp Trp Ala Asn Leu Ser Phe
 1 5 10 15
 Gly Tyr Met Lys Thr Asp Tyr Asn Val Arg Ile Asn Phe Arg Asn Gly
 20 25 30
 Ala Trp Gly Glu Leu Glu Ile Ser Ser Ser Glu Val Leu Asn Leu His
 35 40 45
 Met Ala Ala Thr Cys Leu His Tyr Gly Gln Glu Ala Phe Glu Gly Leu
 50 55 60
 Lys Ala Phe Arg Gly Lys Asp Gly Lys Val Arg Ile Phe Arg Leu Glu
 65 70 75 80
 Glu Asn Ala Ala Arg Leu Gln Ser Thr Cys Gln Gly Ile Met Met Ala
 85 90 95
 Glu Leu Pro Thr Glu Arg Phe Lys Glu Ala Ile Leu Lys Val Val Lys
 100 105 110
 Leu Asn Glu Arg Phe Ile Pro Pro Tyr Glu Ser Gly Ala Ser Leu Tyr
 115 120 125
 Ile Arg Pro Leu Leu Ile Gly Thr Ser Ala Gln Val Gly Val His Pro
 130 135 140
 Ala Asp Glu Tyr Met Phe Val Val Phe Val Thr Pro Val Gly Pro Tyr
 145 150 155 160
 Phe Lys Gly Gly Phe Ser Thr Asn Pro Tyr Val Ile Ile Arg Glu Tyr
 165 170 175
 Asp Arg Ala Ala Pro His Gly Thr Gly Ile Tyr Lys Val Gly Gly Asn
 180 185 190
 Tyr Ala Ala Ser Leu Arg Ala Asn Lys Lys Ala His Asp Leu Gly Tyr
 195 200 205
 Ser Cys Glu Phe Tyr Leu Asp Ala Lys Asp Lys Lys Tyr Ile Asp Glu
 210 215 220
 Cys Gly Ala Ala Asn Phe Phe Gly Ile Lys Asp Asn Thr Tyr Ile Thr
 225 230 235 240
 Pro Lys Ser Thr Ser Ile Leu Pro Ser Ile Thr Asn Lys Ser Leu Met
 245 250 255
 Gln Leu Ala Glu Asp Met Gly Met Lys Val Glu Arg Arg Pro Val Pro
 260 265 270
 Glu Glu Glu Leu Ser Thr Phe Glu Glu Ala Gly Ala Cys Gly Thr Ala
 275 280 285
 Ala Val Ile Ser Pro Ile Glu Arg Ile Asp Asp Leu Glu Asn Gly Lys
 290 295 300
 Ser Tyr Val Ile Ser Lys Asp Gly Lys Pro Gly Pro Val Cys Glu Lys
 305 310 315 320
 Leu Tyr Asn Lys Leu Arg Gly Ile Gln Tyr Gly Asp Glu Pro Asp Thr
 325 330 335
 His Gly Trp Val Thr Ile Val Glu
 340

<210> 8304
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 8304
 Met Asn Tyr Lys Ile Thr Thr Leu Ala Glu Asn Ser Val Tyr Gly Lys
 1 5 10 15

Gly Leu Gln Gly Glu His Gly Leu Ser Leu Leu Val Glu Ala Gly Glu
 20 25 30
 His Lys Val Leu Phe Asp Thr Gly Ala Ser Asp Leu Phe Leu Arg Asn
 35 40 45
 Ala Arg Leu Leu Gly Leu Asp Leu Ser Asp Val Glu Tyr Val Val Leu
 50 55 60
 Ser His Gly His Arg Asp His Thr Gly Gly Leu Tyr Ala Phe Leu Lys
 65 70 75 80
 Met Asn Ser Val Ala Lys Val Val Cys Lys Arg Glu Val Phe Arg Lys
 85 90 95
 Lys Phe Lys Asn Glu Arg Glu Asn Gly Met Leu His Pro Glu Ala Leu
 100 105 110
 Asp Lys Ser Arg Phe Trp Leu Val Asp Glu Thr Thr Glu Ile Val Pro
 115 120 125
 Gly Val Phe Ala Phe Pro Asp Val Lys Val Val Asp Arg Asn Asp Thr
 130 135 140
 His Phe Glu His Phe Phe Thr Glu Ile Glu Gly Glu Met Arg Pro Asp
 145 150 155 160
 Thr Phe Glu Asp Glu Leu Ala Leu Val Leu Lys Gly Glu Lys Ser Leu
 165 170 175
 Ser Val Leu Ser Ala Cys Ser His Arg Gly Ile Thr Asn Ile Ile Arg
 180 185 190
 Ala Val Gln Asn Ala Phe Pro Gly Leu Gly Leu Lys Leu Val Met Gly
 195 200 205
 Gly Phe His Ile His Asn Ala Glu Glu Glu Lys Phe Asn Val Ile Ser
 210 215 220
 Ala Phe Leu Gly Met Lys Leu Pro Lys Arg Leu Gly Val Cys His Cys
 225 230 235 240
 Thr Gly Ile Asp Lys Tyr Ala Leu Phe Arg Gln Gln Phe Asn Asp Arg
 245 250 255
 Val Phe Tyr Asn Tyr Thr Gly Trp Val Glu Thr Ile
 260 265

<210> 8305

<211> 282

<212> PRT

<213> B.fragilis

<400> 8305

Arg Lys Asn Lys Met Ser Arg Thr Asn Phe Asp Thr Leu Leu Glu Ala
 1 5 10 15
 Gly Cys His Phe Gly His Leu Lys Arg Lys Trp Asn Pro Ala Met Ala
 20 25 30
 Pro Tyr Ile Phe Met Glu Arg Asn Gly Ile His Ile Ile Asp Leu His
 35 40 45
 Lys Thr Val Ala Lys Val Asp Glu Ala Ala Glu Ala Leu Lys Gln Ile
 50 55 60
 Ala Lys Ser Gly Lys Lys Val Leu Phe Val Ala Thr Lys Lys Gln Ala
 65 70 75 80
 Lys Gln Val Val Ala Glu Lys Ala Ala Ser Val Asn Met Pro Tyr Val
 85 90 95
 Ile Glu Arg Trp Pro Gly Gly Met Leu Thr Asn Phe Pro Thr Ile Arg
 100 105 110
 Lys Ala Val Lys Lys Met Thr Thr Ile Asp Lys Leu Thr Ala Asp Gly
 115 120 125
 Thr Tyr Ser Asn Leu Ser Lys Arg Glu Ile Leu Gln Ile Ser Arg Gln
 130 135 140
 Arg Ala Lys Leu Asp Lys Thr Leu Gly Ser Ile Ala Asp Leu Thr Arg
 145 150 155 160

Leu Pro Ser Ala Leu Phe Val Ile Asp Val Met Lys Glu Asn Ile Ala
 165 170 175
 Val Arg Glu Ala Asn Arg Leu Gly Ile Pro Val Phe Gly Ile Val Asp
 180 185 190
 Thr Asn Ser Asp Pro Thr Asn Ile Asp Phe Val Ile Pro Ala Asn Asp
 195 200 205
 Asp Ala Thr Lys Ser Val Glu Val Ile Leu Asp Ala Cys Cys Ala Ala
 210 215 220
 Met Ile Glu Gly Leu Glu Glu Arg Lys Ala Glu Lys Ile Asp Met Glu
 225 230 235 240
 Ala Ala Gly Glu Ala Pro Ala Asn Lys Gly Lys Lys Lys Ser Ala Lys
 245 250 255
 Ala Arg Leu Asp Lys Ser Asp Glu Glu Ala Ile Asn Ala Ala Lys Ala
 260 265 270
 Ala Ala Phe Leu Lys Glu Asp Glu Glu Ala
 275 280

<210> 8306

<211> 93

<212> PRT

<213> B.fragilis

<400> 8306

Gln Lys Asn Asn Arg Lys Pro Met Asn Ala Val Ala Glu Leu Leu Pro
 1 5 10 15
 Ala Phe Pro Gln Gly His Thr Ser Ile Tyr Leu Lys Cys Tyr Tyr Ile
 20 25 30
 Val Leu Ser Phe Asn Ser Thr Thr Lys Gly Ile Glu Gln Lys Arg Glu
 35 40 45
 Ile Lys Lys Ile Ala Lys Ser Ile Cys Leu Leu Gln Lys Glu Ser Val
 50 55 60
 Tyr Leu Lys Tyr Lys Lys Thr Gln Ile Trp Gln Thr Pro Asn Tyr Arg
 65 70 75 80
 Glu Tyr Pro Lys Leu Asn Lys Leu Cys Cys Met Pro Asn
 85 90

<210> 8307

<211> 239

<212> PRT

<213> B.fragilis

<400> 8307

His Ile Thr Lys Met Lys Lys Gln Ile Ile His Arg Trp Met Leu Met
 1 5 10 15
 Ala Val Phe Cys Leu Gly Ala Ser Leu Ile Gly Ile Asn Ala Gln Glu
 20 25 30
 Lys Asp Trp Ala Asn Leu Gln Arg Tyr Ala Gln Gln Asn Ala Glu Leu
 35 40 45
 Pro Lys Pro Asp Lys Asn Glu Lys Arg Val Val Phe Met Gly Asn Ser
 50 55 60
 Ile Thr Glu Gly Trp Val Asn Thr His Pro Asp Phe Phe Lys Ser Asn
 65 70 75 80
 Gly Tyr Ile Gly Arg Gly Ile Gly Gly Gln Thr Ser Tyr Gln Phe Leu
 85 90 95
 Val Arg Phe Arg Glu Asp Val Ile Asn Leu Ser Pro Ala Leu Val Val
 100 105 110
 Ile Asn Ala Ala Thr Asn Asp Ile Ala Glu Asn Thr Gly Ala Tyr His
 115 120 125
 Glu Asp Arg Thr Phe Gly Asn Ile Val Ser Met Val Glu Leu Ala Lys

130	135	140
Ala Asn His Ile Lys Val	Ile Leu Thr Thr Thr	Leu Pro Ala Ala Ala
145	150	155
Phe Gly Trp Asn Pro Ala	Ile Lys Asp Ala Pro	Gln Lys Ile Ala Ser
165	170	175
Leu Asn Ala Arg Leu Lys	Ala Tyr Ala Gln Thr	Asn Lys Ile Pro Phe
180	185	190
Val Asp Tyr Tyr Ser Ser	Met Val Ser Gly Ser	Asn Lys Ala Leu Asn
195	200	205
Pro Ala Tyr Thr Lys Asp	Gly Val His Pro Thr	Ser Glu Gly Tyr Asp
210	215	220
Val Met Glu Asn Leu Ile	Gln Gln Ala Ile Asn	Lys Thr Leu Arg
225	230	235

<210> 8308
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 8308
His Leu Lys Asn Lys Leu Arg Val Asp Thr Leu Ser Tyr Lys Thr Ile
1 5 10 15
Ser Ala Asn Lys Ala Thr Val Thr Lys Glu Trp Val Ile Val Asp Ala
20 25 30
Thr Asp Gln Thr Leu Gly Arg Leu Gly Ala Lys Val Ala Lys Leu Leu
35 40 45
Arg Gly Lys Tyr Lys Pro Asn Phe Thr Pro His Val Asp Cys Gly Asp
50 55 60
Asn Val Ile Ile Ile Asn Ala Asp Lys Val Lys Leu Ser Gly Asn Lys
65 70 75 80
Trp Asn Asp Arg Val Tyr Leu Ser Tyr Thr Gly Tyr Pro Gly Gly Gln
85 90 95
Arg Glu Met Thr Pro Ala Arg Leu Ile Ala Lys Pro Asn Gly Glu Asp
100 105 110
Arg Leu Leu Arg Lys Val Val Lys Gly Met Leu Pro Lys Asn Arg Leu
115 120 125
Gly Ala Lys Leu Leu Ser Asn Met Tyr Val Tyr Ala Gly Ser Glu His
130 135 140
Lys His Asp Ala Gln Asn Pro Lys Ala Ile Asp Ile Asn Ser Leu Lys
145 150 155 160

<210> 8309
 <211> 252
 <212> PRT
 <213> B.fragilis

<400> 8309
Met Gly Lys Asn Lys Leu Glu Lys Phe Ala Asp Met Ala Ser Tyr Pro
1 5 10 15
His Val Phe Glu Tyr Pro Tyr Ser Ala Val Asp Asn Val Pro Phe Asp
20 25 30
Met Lys Gly Lys Trp His Lys Glu Phe Phe Lys Asn Asp Asn Pro Ile
35 40 45
Val Leu Glu Leu Gly Cys Gly Arg Gly Glu Tyr Thr Val Gly Leu Gly
50 55 60
Arg Met Phe Pro Asp Lys Asn Phe Ile Ala Val Asp Ile Lys Gly Ala
65 70 75 80
Arg Met Trp Thr Gly Ala Thr Glu Ser Leu Gln Ala Gly Met Lys Asn
85 90 95

Val Ala Phe Leu Arg Thr Asn Ile Glu Ile Ile Asp Arg Phe Phe Ala
 100 105 110
 Glu Gly Glu Val Ser Glu Ile Trp Leu Thr Phe Ser Asp Pro Gln Met
 115 120 125
 Lys Lys Ala Thr Lys Arg Leu Thr Ser Thr Tyr Phe Met Glu Arg Tyr
 130 135 140
 Arg Lys Phe Leu Val Ser Asn Gly Ile Ile His Leu Lys Thr Asp Ser
 145 150 155 160
 Asn Phe Met Phe Thr Tyr Thr Glu Tyr Met Ile Glu Glu Asn Gly Leu
 165 170 175
 Pro Val Glu Phe Ile Thr Glu Asp Leu Tyr His Ser Asp Leu Val Asp
 180 185 190
 Asp Ile Leu Gly Ile Lys Thr Tyr Tyr Glu Gln Gln Trp Leu Asp Arg
 195 200 205
 Gly Leu Ser Ile Lys Tyr Ile Lys Phe Leu Leu Pro Gln Glu Gly Glu
 210 215 220
 Leu Arg Glu Pro Asp Ile Glu Ile Glu Leu Asp Ser Tyr Arg Ser Tyr
 225 230 235 240
 Asn Arg Ser Lys Arg Ser Gly Leu Gln Thr Ser Lys
 245 250

<210> 8310

<211> 486

<212> PRT

<213> B.fragilis

<400> 8310

Asp Ala Met Lys Lys Leu Leu Phe Leu Phe Phe Leu Leu Thr Thr Pro
 1 5 10 15
 Phe Ser Leu Lys Ser Gln Gly Ile Leu Ser Leu Asp Ser Cys Arg Ala
 20 25 30
 Leu Ala Ile Ala Asn Asn Lys Glu Leu Leu Ile Ser Gly Glu Lys Ile
 35 40 45
 Asn Ala Ala His Tyr Gln Lys Lys Ala Ala Phe Thr Asn Tyr Leu Pro
 50 55 60
 Asn Phe Ser Ala Thr Gly Ala Tyr Met Arg Asn Gln Lys Glu Phe Ser
 65 70 75 80
 Leu Leu Asn Asn Asp Gln Lys Ala Ala Leu Ser Gly Leu Gly Thr Ser
 85 90 95
 Val Ser Gly Pro Leu Gln Gln Ala Ala Gln Val Ile Gly Gln Leu His
 100 105 110
 Pro Glu Leu Ala Pro Met Leu Ser Gln Leu Gly Gly Ala Ile Val Pro
 115 120 125
 Ala Leu Asn Glu Ala Gly Thr Ala Ile Val Asp Ala Phe Arg Thr Asp
 130 135 140
 Thr Arg Asn Val Tyr Ala Gly Ala Ile Thr Leu Thr Gln Pro Leu Tyr
 145 150 155 160
 Met Gly Gly Lys Ile Arg Ala Tyr Asn Lys Ile Thr Lys Tyr Ala Glu
 165 170 175
 Glu Leu Ala Arg Gln Gln His Asn Ser Gly Met Gln Glu Val Ile Leu
 180 185 190
 Ser Thr Asp Gln Ala Tyr Trp Gln Val Ile Ser Leu Val Asn Lys Lys
 195 200 205
 Lys Leu Ala Glu Ser Tyr Leu Lys Leu Leu Gln Lys Leu Asp Ser Asp
 210 215 220
 Val Glu Lys Met Ile Ala Glu Gly Val Ala Thr Lys Ala Asp Gly Leu
 225 230 235 240
 Ser Val Arg Val Lys Val Asn Glu Ala Glu Met Thr Leu Thr Lys Val
 245 250 255

Glu Asp Gly Leu Ser Leu Ser Arg Met Leu Leu Cys Gln Leu Cys Gly
 260 265 270
 Ile Asp Leu Ser Thr Pro Ile Val Leu Ala Asp Glu Gln Val Asp Asp
 275 280 285
 Leu Pro Leu Ile Pro Ala Thr Thr Asn Phe Glu Ile Glu Thr Ala Tyr
 290 295 300
 Ala Asn Arg Pro Glu Ile Arg Ser Leu Glu Leu Ala Ala Lys Ile Tyr
 305 310 315 320
 Gln Gln Lys Ile Asn Val Thr Arg Ser Glu His Leu Pro Ser Val Ala
 325 330 335
 Leu Met Gly Asn Tyr Met Val Thr Asn Pro Ser Val Phe Asn Ser Phe
 340 345 350
 Glu Asn Lys Phe Lys Gly Met Trp Asn Val Gly Val Met Val Gln Leu
 355 360 365
 Pro Ile Trp His Trp Gly Glu Gly Ile Tyr Lys Val Lys Ala Ala Lys
 370 375 380
 Ala Glu Ala Arg Ile Ala Gln Tyr Gln Leu Glu Asp Ala Lys Glu Lys
 385 390 395 400
 Ile Glu Leu Gln Val Asn Gln Ser Ala Phe Lys Val Asn Glu Ala Ala
 405 410 415
 Lys Lys Leu Ala Met Ala Lys Lys Asn Leu Glu Lys Ala Asp Glu Asn
 420 425 430
 Leu Arg Tyr Ala Thr Leu Gly Phe Glu Glu Gly Val Ile Ala Pro Ser
 435 440 445
 Asn Val Leu Glu Ala His Thr Ala Trp Leu Ser Ala Gln Ser Glu Lys
 450 455 460
 Ile Asp Ala Gln Ile Asp Val Lys Leu Thr Glu Ile Tyr Leu Gln Lys
 465 470 475 480
 Ser Leu Gly Thr Leu Lys
 485

<210> 8311

<211> 420

<212> PRT

<213> B.fragilis

<400> 8311

Ile Arg Ala Leu Met Lys Asp Ile Ser Leu Lys Asp Lys Ile Thr Gln
 1 5 10 15
 Gly Ile Asn Asp Leu Phe Tyr Ile Trp Lys Arg Glu Phe Arg Thr Thr
 20 25 30
 Phe Arg Asp Gln Gly Val Leu Ile Phe Phe Val Leu Val Pro Leu Val
 35 40 45
 Tyr Pro Leu Ile Tyr Ser Phe Ile Tyr Thr Asn Glu Val Val Arg Glu
 50 55 60
 Val Pro Ala Val Val Val Asp Asp Ser His Ser Ser Leu Ser Arg Glu
 65 70 75 80
 Tyr Leu Arg Lys Val Asp Ala Thr Pro Asp Ile Gln Ile Val Ala Tyr
 85 90 95
 Cys Ala Asp Met Glu Glu Ala Lys Gln Met Leu Lys Asp Arg Leu Ala
 100 105 110
 Tyr Gly Ile Ile Tyr Ile Pro Lys Asp Phe Ser Ser Asp Ile Ala Gln
 115 120 125
 Gly Lys Gln Thr Gln Val Ser Ile Tyr Cys Asp Met Ser Gly Leu Leu
 130 135 140
 Tyr Tyr Lys Ser Met Leu Leu Ala Asn Thr Ala Val Ser Leu Asp Met
 145 150 155 160
 Asn Glu Asp Ile Lys Ile Ala Arg Ser Gly Asn Thr Thr Asp Arg Gln
 165 170 175

Asp Glu Ile Thr Ala Tyr Pro Ile Glu Tyr Glu Asp Val Ala Met Phe
 180 185 190
 Asn Pro Thr Asn Gly Phe Ala Ala Phe Leu Ile Pro Ala Val Leu Ile
 195 200 205
 Leu Ile Ile Gln Gln Thr Leu Leu Leu Gly Ile Gly Leu Ser Ala Gly
 210 215 220
 Thr Ala Arg Glu Asn Asn Arg Phe Lys Asp Leu Val Pro Ile Asn Arg
 225 230 235 240
 His Tyr Asn Gly Thr Leu Arg Ile Val Leu Gly Lys Gly Leu Ser Tyr
 245 250 255
 Phe Met Val Tyr Ala Leu Val Ser Val Tyr Val Leu Cys Ala Val Pro
 260 265 270
 Arg Met Phe Ser Leu Asn Gln Ile Gly Gln Pro Gly Thr Leu Ala Leu
 275 280 285
 Phe Ile Leu Pro Tyr Leu Met Ala Cys Ile Phe Phe Ala Met Thr Ala
 290 295 300
 Ser Ile Ala Ile Arg Asn Arg Glu Thr Cys Met Leu Ile Phe Val Phe
 305 310 315 320
 Thr Ser Val Pro Leu Leu Phe Ile Ser Gly Ile Ser Trp Pro Gly Ala
 325 330 335
 Ala Ile Pro Pro Phe Trp Lys Tyr Phe Ser Tyr Ile Phe Pro Ser Thr
 340 345 350
 Phe Gly Ile Asn Gly Phe Val Arg Ile Asn Asn Met Gly Ala Thr Leu
 355 360 365
 Ser Glu Ile Pro Phe Glu Tyr Lys Ala Leu Trp Ile Gln Thr Gly Phe
 370 375 380
 Tyr Phe Leu Thr Thr Cys Trp Val Tyr Arg Trp Gln Ile Ile Lys Ser
 385 390 395 400
 Arg Lys His Val Ile Asp Lys Tyr Lys Glu Met Lys Asn Arg Gly Lys
 405 410 415
 Glu Phe Phe Ser
 420

<210> 8312

<211> 681

<212> PRT

<213> B.fragilis

<400> 8312

Leu Leu Leu Glu Thr Lys Ile Ile Ser Thr Phe Glu Ala Ser Ile Ser
 1 5 10 15
 Ser Cys Arg Arg Cys Lys Gln Ser Thr Tyr Asn Asn Lys Thr His Val
 20 25 30
 Met Lys Arg Lys Met Met Ser Leu Leu Leu Ala Leu Ala Val Ile Ser
 35 40 45
 Gly Ser Ser Val Tyr Ala Lys Val Ile Asp Val Met Ser Pro Asn Gly
 50 55 60
 Ala Ile Lys Val Ser Val Asp Ile Lys Asp Arg Ile Tyr Tyr Ser Val
 65 70 75 80
 Ser Tyr Asp Asn Asp Gln Leu Leu Lys Asp Cys Tyr Leu Asn Leu Gln
 85 90 95
 Leu Gln Asn Glu Thr Leu Gly Thr Asn Pro His Leu Arg Ser Thr Lys
 100 105 110
 Arg Gly Thr Ile Asp Glu Ser Val Lys Arg Glu Ile Pro Phe Lys Asn
 115 120 125
 Ala Ile Val Arg Asn His Cys Asn Thr Leu Arg Met Asn Phe Ser Gly
 130 135 140
 Asn Tyr Ala Val Glu Phe Arg Val Phe Asp Asn Gly Ile Ala Tyr Arg
 145 150 155 160

Phe	Val	Thr	Asp	Asn	Lys	Gly	Asp	Asn	Ile	Val	Met	Gly	Glu	Asp	Phe
				165					170					175	
Ala	Ile	Asn	Phe	Pro	Ala	Asn	Tyr	Lys	Ala	His	Leu	Ser	Gln	Pro	Asp
			180					185					190		
Gly	Phe	Lys	Thr	Ser	Tyr	Glu	Cys	Pro	Tyr	Thr	His	Val	Asp	Thr	Glu
		195					200					205			
Lys	Tyr	Ala	Ala	Thr	Asp	Arg	Met	Ser	Tyr	Leu	Pro	Val	Leu	Ile	Glu
	210				215						220				
Thr	Asp	Lys	Ala	Tyr	Lys	Ile	Leu	Ile	Ser	Glu	Ala	Asp	Leu	Ser	Asp
225					230					235					240
Tyr	Pro	Cys	Met	Phe	Leu	Lys	Ser	Thr	Gly	Lys	Asn	Gly	Met	Gln	Ser
			245						250					255	
Ile	Phe	Pro	Lys	Ala	Pro	Leu	Ala	Phe	Gly	Glu	Asp	Gly	Asp	Arg	Ser
			260					265					270		
Leu	Lys	Ile	Thr	Glu	Glu	Ala	Asp	Tyr	Ile	Ala	Lys	Thr	Asp	Gly	Lys
		275					280					285			
Arg	Ser	Phe	Pro	Trp	Arg	Met	Met	Val	Ile	Ser	Lys	Glu	Asp	Lys	Glu
	290					295					300				
Leu	Ile	Glu	Asn	Glu	Met	Val	Tyr	Asn	Leu	Ser	Ala	Pro	Cys	Val	Leu
305				310						315					320
Glu	Asp	Tyr	Ser	Trp	Ile	Lys	Pro	Gly	Gln	Val	Ser	Trp	Glu	Trp	Trp
			325						330					335	
His	Asp	Ala	Arg	Leu	Tyr	Gly	Val	Asp	Phe	Arg	Ser	Gly	Phe	Asn	Met
			340					345					350		
Asp	Ser	Tyr	Lys	Tyr	Tyr	Ile	Asp	Phe	Ala	Ser	Lys	Phe	Gly	Ile	Pro
		355					360					365			
Tyr	Ile	Ile	Met	Asp	Glu	Gly	Trp	Ala	Lys	Asn	Thr	Arg	Asp	Pro	Phe
	370					375					380				
Thr	Pro	Asn	Pro	Thr	Ile	Asn	Leu	Thr	Glu	Leu	Ile	Lys	Tyr	Gly	Lys
385					390					395					400
Asp	Arg	Asn	Val	Lys	Ile	Val	Leu	Trp	Leu	Pro	Trp	Leu	Thr	Val	Glu
			405						410					415	
Asn	His	Phe	Asp	Leu	Phe	Lys	Thr	Phe	Ala	Asp	Trp	Gly	Ile	Ala	Gly
		420						425					430		
Val	Lys	Ile	Asp	Phe	Met	Asp	Arg	Ser	Asp	Gln	Trp	Met	Val	Asn	Tyr
		435					440					445			
Tyr	Glu	Arg	Val	Ala	Lys	Glu	Ala	Ala	Lys	His	Lys	Leu	Phe	Val	Asp
	450					455					460				
Phe	His	Gly	Ala	Phe	Lys	Pro	Ala	Gly	Leu	Glu	Arg	Lys	Tyr	Pro	Asn
465					470					475					480
Val	Leu	Ser	Tyr	Glu	Gly	Val	Leu	Gly	Met	Glu	Gln	Gly	Gly	Asn	Cys
			485						490					495	
Lys	Pro	Glu	Asn	Ser	Ile	Tyr	Leu	Pro	Phe	Met	Arg	Asn	Ala	Val	Gly
			500					505					510		
Pro	Met														

4500

625 630 635 640
 Gly Ile Asn Ala Asp Arg Gln Ala Met Asp Tyr Lys Lys Lys Glu Ser
 645 650 655
 Thr Val Asn Asn Gln Thr Arg Met Thr Leu Lys Met Val Arg Asn Gly
 660 665 670
 Gly Trp Ala Gly Thr Ile Lys Met Lys
 675 680

<210> 8313

<211> 460

<212> PRT

<213> B.fragilis

<400> 8313

Phe Ile Val Asp His Ser Ser Phe Lys Asn Arg Ser Ser Phe His Ser
 1 5 10 15
 Ala Leu Lys Leu His Gln His Arg Cys Phe His Cys Phe His Phe Cys
 20 25 30
 Leu Arg Gly Phe Ile Gln Leu Phe Lys Asp Asn Asn Leu Ile Phe Thr
 35 40 45
 Leu Leu Gln Pro Tyr Thr Arg Asn Ile Glu Cys Leu Leu Arg Thr Tyr
 50 55 60
 Phe Pro Val Thr Ser Asp Ile Asn Thr Val His Lys Asn Asp Thr Leu
 65 70 75 80
 Ser Pro Ala Phe His Ile His Lys Cys Ile Ser Asp Phe Ile Gln Arg
 85 90 95
 Lys Ser Pro Leu Ile Lys His Arg Thr Ala Phe Gln Leu Ser His Phe
 100 105 110
 Arg Arg Tyr Ile Phe Met Cys Ile Ser Phe Gln Phe Gly Gln Ile Gly
 115 120 125
 His Phe Val His Arg Gln Leu Ile His Ile Pro Ser Thr Asp Asn Phe
 130 135 140
 Leu Pro Gly Tyr Leu Asn Arg Ala Asn Asn Ser Leu Gly Ile Met Tyr
 145 150 155 160
 Asp Leu Ala Thr Ile Ile Asn Ala Ser His Ile Phe Asn Gln Asn Leu
 165 170 175
 Gln Ser Ser Ile Lys Arg His Leu Tyr Leu His Gly Val Gly Leu Gly
 180 185 190
 Ile Pro Ile Gln His Ser Tyr Leu Phe Thr Ile His Ile Asn Asn Gly
 195 200 205
 Ile Val Thr Gln Pro Arg Asn Phe Lys Cys Ser Ala Asn Arg Leu Ile
 210 215 220
 Glu Met Thr Ser Ile Gln Tyr Ile Ser Ile Pro Leu Ile Gln Leu Phe
 225 230 235 240
 Lys Ser Gln Gly Ser Ile Arg Arg His Gly Leu Leu Phe Phe Cys Lys
 245 250 255
 Ser Lys Tyr Ile Arg Asn Phe Ile Gln Leu Asn Arg Arg Tyr Phe Asp
 260 265 270
 Asn Arg Ile Arg Ser Arg Ser Phe Arg Asn Cys Ile Phe Asn Ile Phe
 275 280 285
 Leu Asp His Ile Ala Asn Arg Ile Ile Leu Trp Ser Tyr Pro Ala Cys
 290 295 300
 Leu Ala Asn Arg Ser Ile Ile Ile Ile Thr Gly His Ile Arg Leu Asn
 305 310 315 320
 Ile Thr Leu Leu Ile Ile Ile Ser Thr Thr Arg Lys Thr Lys Ile Arg
 325 330 335
 Thr Ser Met His His Ile Glu Val Glu Arg Asn Ile Ile Leu Gln Ile
 340 345 350
 Leu Leu Gly Leu Thr Ser Asn Pro Gly Ser Ser Tyr Leu Arg Glu Arg

4501

355	360	365
Leu Cys Pro Met Arg Gln Pro Thr Arg Ile Lys Phe Cys Asn His Ile		
370	375	380
Arg Thr Phe Ala Val Val Ile Leu Ile Asn His Phe Phe Gln Ile Leu		
385	390	395
Asn Ile Thr Phe Ala Ile Arg Arg Arg Gln Ser Ser Arg Ser Ser Pro		400
405	410	415
Thr Leu Lys Lys Pro Thr Ala Ile Arg Ser Lys Gln Arg Tyr Ile Lys		
420	425	430
Ser Cys Ile Ser Gln Leu Leu Leu Asp Phe Ser Ile Val Ser Ala Met		
435	440	445
Phe Phe Gln Arg Tyr Ile Leu Thr Leu Gly Asn Val		
450	455	460

<210> 8314
 <211> 224
 <212> PRT
 <213> B.fragilis

<400> 8314

Lys Gln Asn Glu Val Thr Met Asn Asn Gln Ile Gln His Lys Asp Ser		
1	5	10
Thr Lys Val Pro Glu Pro Thr Leu Arg Arg Leu Pro Trp Tyr Leu Ser		15
20	25	30
Asn Val Lys Leu Leu Lys Gln Lys Gly Glu Arg Tyr Val Ser Ser Thr		
35	40	45
Gln Ile Ser Lys Glu Ile Asn Ile Asp Ala Ser Gln Ile Ala Lys Asp		
50	55	60
Leu Ser Tyr Val Asn Ile Ser Gly Arg Thr Arg Val Gly Tyr Glu Val		
65	70	75
Asp Ala Leu Ile Ala Val Leu Glu Asp Phe Leu Gly Phe Thr Asn Met		
85	90	95
His Lys Ala Phe Leu Phe Gly Val Gly Ser Leu Gly Gly Ala Leu Leu		
100	105	110
Arg Asp Ser Gly Leu Ser His Phe Gly Leu Glu Ile Val Ala Ala Phe		
115	120	125
Asp Val Asn Pro Ser Leu Val Gly Thr Thr Leu Asn Gly Ile Pro Ile		
130	135	140
Phe His Ser Asp Asp Phe Gln Lys Lys Met Gln Glu Tyr Gly Val His		
145	150	155
Ile Gly Val Leu Thr Val Pro Ile Glu Ile Ala Gln Cys Ile Thr Asp		
165	170	175
Thr Met Val Ala Gly Gly Ile Lys Ala Val Trp Asn Phe Thr Pro Phe		
180	185	190
Arg Ile Arg Val Pro Glu Asp Ile Val Val Gln Asn Thr Ser Leu Tyr		
195	200	205
Ala His Leu Ala Val Met Phe Asn Arg Leu Asn Phe Asn Glu Ile Glu		
210	215	220

<210> 8315
 <211> 290
 <212> PRT
 <213> B.fragilis

<400> 8315

Glu Asp Ser Asp Met Ala Asn Pro Lys Leu Pro Gly Ile Pro Glu Ala		
1	5	10
Glu Gln Ala Leu Leu Tyr Ala Lys Leu Asn Glu Tyr Asn Arg Gly Arg		15
20	25	30

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<210> 8316
<211> 166
<212> PRT
<213> B.fragilis
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<400> 8316																
Asn	Arg	Thr	Asp	Met	Lys	Lys	Leu	Tyr	Phe	Phe	Thr	Met	Leu	Ala	Ala	
1				5					10					15		
Met	Leu	Phe	Ala	Val	Thr	Asn	Val	Met	Ala	Gln	Lys	Ala	Asn	Phe	Lys	
			20					25					30			
Pro	Ala	Asn	Leu	Lys	Gly	Ile	Trp	Gln	Leu	Cys	His	Tyr	Val	Ser	Glu	
			35				40					45				
Ser	Pro	Asp	Ala	Pro	Gly	Val	Leu	Lys	Pro	Ser	Asn	Thr	Phe	Lys	Val	
	50					55					60					
Leu	Ser	Asp	Asp	Gly	Arg	Ile	Val	Asn	Phe	Thr	Ile	Arg	Pro	Gly	Ala	
65					70					75					80	
Asp	Ala	Ile	Ile	Thr	Gly	Tyr	Gly	Ser	Tyr	Glu	Gln	Leu	Ser	Asp	His	
				85					90					95		
Thr	Tyr	Ala	Glu	Ser	Ile	Glu	Lys	Asn	Ile	His	Leu	Pro	Met	Leu	Asp	
			100					105					110			
Asn	Gln	Asp	Asn	Val	Leu	Thr	Phe	Glu	Leu	Val	Asp	Asp	Lys	Val	Leu	
		115					120				125					
His	Leu	Lys	Tyr	Phe	Ile	Glu	Lys	Asp	Leu	Asn	Gly	Asn	Glu	Leu	Asn	
	130					135					140					

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<210> 8317
<211> 411
<212> PRT
<213> B.fragilis
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Val Lys Ser Ala Ala Cys Leu Gln Ser Gly Asp Glu Leu Ile Thr Arg
 385 390 395 400
 Leu Tyr Lys Gly Glu Val Lys Ser Arg Val Glu
 405 410

<210> 8318
 <211> 335
 <212> PRT
 <213> B.fragilis

<400> 8318
 Asn Ile Lys Asp Ile Met Ala Val Thr Met Ala Asp Ile Thr Lys Leu
 1 5 10 15
 Arg Lys Met Thr Gly Ala Gly Met Met Asp Cys Lys Asn Ala Leu Thr
 20 25 30
 Asp Ala Glu Gly Asp Phe Asp Lys Ala Met Lys Ile Ile Arg Glu Lys
 35 40 45
 Gly Gln Ala Val Ala Ala Lys Arg Ser Asp Arg Glu Ala Ser Glu Gly
 50 55 60
 Cys Val Leu Val Lys Val Glu Glu Gly Phe Gly Ala Ile Ile Ala Leu
 65 70 75 80
 Lys Cys Glu Thr Asp Phe Val Ala Gln Asn Ala Asp Phe Val Lys Leu
 85 90 95
 Thr Gln Asp Ile Leu Asp Ala Ala Val Ala Asn Lys Cys Lys Thr Leu
 100 105 110
 Glu Glu Val Leu Ala Leu Pro Met Gly Asp Ala Thr Val Ala Gln Ala
 115 120 125
 Val Thr Asp Arg Thr Gly Ile Thr Gly Glu Lys Met Glu Leu Asp Gly
 130 135 140
 Tyr Met Val Leu Glu Gly Ala Thr Ile Ala Ala Tyr Asn His Met Asn
 145 150 155 160
 Arg Asn Gly Leu Cys Thr Met Val Ala Phe Asn Lys Lys Val Asp Glu
 165 170 175
 Gln Leu Ala Lys Gln Val Ala Met Gln Val Ala Ala Met Asn Pro Ile
 180 185 190
 Ala Val Asp Glu Asp Gly Val Ser Glu Glu Val Lys Gln Lys Glu Ile
 195 200 205
 Glu Val Ala Val Glu Lys Thr Lys Val Glu Gln Val Gln Lys Ala Val
 210 215 220
 Glu Ala Ala Leu Lys Lys Ala Asn Ile Asn Pro Ala His Val Asp Ser
 225 230 235 240
 Glu Asp His Met Glu Ser Asn Met Ala Lys Gly Trp Ile Thr Ala Glu
 245 250 255
 Asp Val Ala Lys Ala Lys Glu Ile Ile Ala Thr Val Ser Ala Glu Lys
 260 265 270
 Ala Ala Asn Met Pro Glu Gln Met Ile Gln Asn Ile Ala Lys Gly Arg
 275 280 285
 Leu Ala Lys Phe Leu Lys Glu Val Cys Leu Leu Asn Gln Glu Asp Ile
 290 295 300
 Met Asp Ala Lys Lys Ile Val Arg Glu Val Leu Lys Glu Ala Asp Pro
 305 310 315 320
 Glu Leu Lys Val Val Asp Phe Lys Arg Phe Thr Leu Arg Ala Glu
 325 330 335

<210> 8319
 <211> 272
 <212> PRT
 <213> B.fragilis

<400> 8319

Arg Tyr Gly Glu Ser Tyr Ser Thr Gly Tyr Lys Gln Asp Phe Thr Ile
 1 5 10 15
 Thr Ile Phe Lys Lys Glu Ile Met Lys Pro Phe Ile Ser Phe Cys Leu
 20 25 30
 Leu Leu Cys Ile Cys Leu Gly Lys Leu Tyr Ala Gln Gly Val Asn Ile
 35 40 45
 Val Tyr Ile Gly Asn Ser Ile Thr Gln Gly Ala Leu Lys Thr Pro
 50 55 60
 Ala Thr Glu Ala Pro Pro Val Gln Ala Ser Gln Tyr Ile Glu Gln Ala
 65 70 75 80
 Thr Lys Gln Ser Val Ala Phe Arg Asn Cys Gly Val Ser Gly Ala Thr
 85 90 95
 Thr Leu Asn Phe Leu Pro Ile Ala Glu Arg Gln Phe Pro Asn Val Lys
 100 105 110
 Ser Ala Ala Gln Glu Leu Ser Gln Arg Lys Gly Thr Leu Leu Phe Ser
 115 120 125
 Ile Met Leu Gly Thr Asn Asp Ser Ala Cys Asn Gly Pro Phe Gly Ser
 130 135 140
 Pro Val Glu Pro Val Ser Tyr Tyr Thr Asn Met Lys Thr Ile Ile Asp
 145 150 155 160
 Glu Leu Leu Ser Leu Tyr Pro Glu Cys Lys Val Val Ile His Gln Pro
 165 170 175
 Ile Trp Tyr Ser Pro Asn Thr Tyr Asn Ser Ala Met Tyr Leu Ala Ala
 180 185 190
 Gly Leu Lys Arg Leu Lys Ser Tyr Thr Pro Met Ile His Lys Leu Val
 195 200 205
 Asp His Tyr Ser Gln Ala Asn Pro Asn Gln Val Phe Leu Gly Asp Thr
 210 215 220
 Ala Ala Ser Asp Phe Phe Arg Asn Asn Tyr Gln Ser Tyr Phe Thr Pro
 225 230 235 240
 Glu Asn Gly Asn Ala Gly Thr Phe Tyr Leu His Pro Asn Lys Glu Gly
 245 250 255
 Ala Gly Ile Leu Gly Lys Tyr Trp Ala Glu Ala Ile Leu Lys Ala Ile
 260 265 270

<210> 8320

<211> 130

<212> PRT

<213> B.fragilis

<400> 8320

Asp Ile Met Glu Val Val Asn Ala Leu Gly Arg Arg Lys Arg Ala Ile
 1 5 10 15
 Ala Arg Val Phe Val Ser Glu Gly Thr Gly Lys Ile Thr Ile Asn Lys
 20 25 30
 Arg Asp Leu Ala Glu Tyr Phe Pro Ser Thr Ile Leu Gln Tyr Val Val
 35 40 45
 Lys Gln Pro Leu Asn Lys Leu Gly Val Ala Glu Lys Tyr Asp Ile Lys
 50 55 60
 Val Asn Leu Cys Gly Gly Phe Thr Gly Gln Ser Gln Ala Leu Arg
 65 70 75 80
 Leu Ala Ile Ala Arg Ala Leu Val Lys Ile Asn Ala Glu Asp Lys Pro
 85 90 95
 Ala Leu Arg Ser Glu Gly Phe Met Thr Arg Asp Pro Arg Ser Val Glu
 100 105 110
 Arg Lys Lys Pro Gly Gln Pro Lys Ala Arg Arg Arg Phe Gln Phe Ser
 115 120 125
 Lys Arg

130

<210> 8321
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 8321
 Met Leu Leu Leu Lys Ile Phe Phe Thr Thr Tyr Gln Pro Ser Pro Asp
 1 5 10 15
 Lys Gly Arg Leu Thr Cys Tyr Glu Leu Ile Ser Tyr Pro Phe Glu Ile
 20 25 30
 Ile Ile Gly Leu Gln Lys Tyr Gly Phe Ser Leu Asn Trp Gln Thr Ile
 35 40 45
 Ser Val Phe Phe Trp Ile Tyr Pro Val Asp Asn Glu Pro Gln Ala Ile
 50 55 60
 Cys Arg Lys Gln Arg Pro Thr Arg Gln Lys Lys Thr Ala Gly Asn Lys
 65 70 75 80
 Pro His Thr Ile Asn Ala Thr Ile His Asn Arg Gln Leu Ala Thr Cys
 85 90 95
 Ser Pro

<210> 8322
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8322
 Ile Tyr Thr Cys Val Ser Leu Arg Lys Cys Arg Glu Glu Phe Gly Asp
 1 5 10 15
 Cys Ile His Arg Phe Pro Ile Val Leu Leu Leu Leu Val Thr Ala Phe
 20 25 30
 Arg Ala Gln Lys Val Ile Lys Val Gly Val Trp Val Thr Ala Pro Phe
 35 40 45
 Leu Arg Ile Gly Lys Pro Gly Val Met Glu Arg Glu Asn Ser Ala Phe
 50 55 60
 Lys Asp Gly Lys Pro Gly Ser Gly Gly Gly Arg Ala Gly Leu Trp Gly
 65 70 75 80
 Lys

<210> 8323
 <211> 400
 <212> PRT
 <213> B.fragilis

<400> 8323
 His Glu Val Cys Tyr Ala Pro Cys Ser Phe Lys Val Cys Ile Leu Thr
 1 5 10 15
 Cys Pro Ile Asp Cys Ile Leu Pro Gly Ile Leu Tyr Ile Cys Ile Leu
 20 25 30
 Arg Lys Lys Arg Met Asn Met Lys Glu Ser Lys Lys Arg Val Leu Val
 35 40 45
 Gly Met Ser Gly Gly Ile Asp Ser Thr Ala Thr Cys Leu Met Leu Gln
 50 55 60
 Glu Gln Gly Tyr Glu Ile Val Gly Val Thr Met Arg Val Trp Gly Asp
 65 70 75 80
 Glu Pro Gln Asp Ala Arg Glu Leu Ala Ala Arg Met Gly Ile Glu His

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<210> 8324
<211> 68
<212> PRT
<213> B.fragilis
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[illegible]

$\langle 210 \rangle$	8325
$\langle 211 \rangle$	337

<212> PRT

<213> B.fragilis

<400> 8325

Tyr Asn Ile Arg Ile Glu Gly Met Lys Val Ser Phe Ser Met Ile Phe
 1 5 10 15
 Glu Lys Ala Thr Asp Pro Phe Ile Lys Ser Val Ile Lys Ala Ala Glu
 20 25 30
 Thr Ala Ile Leu Ser His Val Gly Lys Glu Val Glu Ile Val Gly Asn
 35 40 45
 Ile Ser Val Lys Thr Val Gln Ala Ala Arg Pro Glu Val Gly Lys Leu
 50 55 60
 Leu Pro His Val Lys Asn Ile Ile Gly Ile Ser Ser Gly Lys Gly Gly
 65 70 75 80
 Val Gly Lys Ser Thr Val Ser Ala Asn Leu Ala Val Ala Leu Ala Lys
 85 90 95
 Leu Gly Tyr Lys Val Gly Leu Leu Asp Ala Asp Val Phe Gly Pro Ser
 100 105 110
 Met Pro Lys Met Phe Gln Val Glu Asp Ala Arg Pro Tyr Ala Glu Lys
 115 120 125
 Ile Asp Gly Arg Asp Met Ile Ile Pro Val Glu Lys Tyr Gly Val Lys
 130 135 140
 Leu Leu Ser Ile Gly Phe Phe Val Asp Pro Asp Gln Ala Thr Leu Trp
 145 150 155 160
 Arg Gly Gly Met Ala Ser Asn Ala Leu Lys Gln Leu Ile Gly Asp Ala
 165 170 175
 Ala Trp Gly Asp Leu Asp Tyr Phe Leu Ile Asp Leu Pro Pro Gly Thr
 180 185 190
 Ser Asp Ile His Leu Thr Val Val Gln Thr Leu Ala Leu Thr Gly Ala
 195 200 205
 Val Val Val Ser Thr Pro Gln Ala Val Ala Leu Ala Asp Ala Arg Lys
 210 215 220
 Gly Ile Asn Met Phe Thr Asn Asp Lys Val Asn Val Pro Ile Leu Gly
 225 230 235 240
 Leu Val Glu Asn Met Ala Trp Phe Thr Pro Ala Glu Leu Pro Glu Asn
 245 250 255
 Lys Tyr Tyr Leu Phe Gly Lys Glu Gly Ala Lys Lys Leu Ala Glu Glu
 260 265 270
 Met Asn Val Pro Leu Leu Gly Gln Ile Pro Ile Val Gln Ser Ile Cys
 275 280 285
 Glu Gly Gly Asp Lys Gly Thr Pro Val Ala Leu Asp Glu Asn Thr Val
 290 295 300
 Thr Gly Arg Ala Phe Leu Ala Leu Ala Ala Ser Val Val Arg Gln Val
 305 310 315 320
 Asp Lys Arg Asn Val Glu Met Ala Pro Thr Lys Ile Val Glu Leu His
 325 330 335
 Lys

<210> 8326

<211> 861

<212> PRT

<213> B.fragilis

<400> 8326

Leu Lys Asn Arg Lys Thr Met Asn Trp Gly Ile His Asp Arg Arg Gly
 1 5 10 15
 Trp Met Ala Val Val Leu Leu Leu Cys Ala Tyr Pro Phe Ser Ala Gln
 20 25 30

Asn	Thr	Gly	Gln	Ile	Thr	Leu	Glu	Leu	Arg	Asn	Lys	Pro	Leu	Pro	Ala
		35					40					45			
Val	Leu	Lys	Leu	Ile	Glu	Lys	Ala	Gly	Glu	Lys	His	Ile	Ile	Phe	Ser
		50				55					60				
Tyr	Asn	Glu	Thr	Glu	Thr	Tyr	His	Val	Thr	Ala	Ser	Ile	His	Gln	Arg
65					70					75					80
Asn	Glu	Ser	Glu	Ala	Leu	Ser	Ile	Val	Leu	Lys	Ser	Thr	Pro	Phe	Ile
			85						90					95	
Tyr	Lys	Glu	Arg	Glu	Asn	Tyr	Phe	Val	Ile	Gln	Lys	Gly	Ser	Ile	Asp
			100					105						110	
Lys	Arg	Leu	Ile	Thr	Ile	Arg	Gly	Ser	Val	Ile	Asp	Glu	Asn	Asn	Glu
		115					120					125			
Pro	Leu	Val	Cys	Ala	Asn	Val	Leu	Leu	Leu	Asp	Lys	Ala	Asp	Ser	Ala
		130				135						140			
Phe	Val	Asn	Gly	Val	Val	Thr	Asn	Gln	Asp	Gly	Ser	Phe	Arg	Ile	Pro
145					150					155					160
Gly	Glu	Glu	Gly	Arg	Asp	Tyr	Leu	Leu	Lys	Thr	Ser	Tyr	Ile	Gly	Tyr
				165					170					175	
Gln	Thr	Lys	Ile	Gln	Pro	Cys	Gly	Ala	Met	Asn	Lys	Val	Cys	Leu	Phe
		180						185					190		
Ser	Asp	Thr	Gln	Leu	Met	Lys	Glu	Val	Val	Ile	Ser	Val	Asp	His	Pro
		195					200					205			
Leu	Ile	Val	His	Lys	Asp	Asn	Gly	Leu	Leu	Ala	Asn	Val	Val	Gly	Thr
		210				215						220			
Pro	Leu	Ala	Lys	Met	Gly	Ser	Ala	Ala	Glu	Met	Ile	Ser	His	Leu	Pro
225					230					235					240
Phe	Val	Thr	Gly	Gly	Val	Gly	Glu	Tyr	Met	Val	Leu	Gly	His	Gly	Val
			245						250					255	
Pro	Val	Ile	Tyr	Ile	Asn	Gly	Arg	Lys	Ile	Arg	Asp	Gln	Gly	Glu	Leu
		260					265						270		
Glu	Arg	Leu	Arg	Ala	Asp	Asp	Ile	Leu	Ser	Ala	Glu	Val	Ile	Thr	Thr
		275					280					285			
Pro	Gly	Val	Glu	Tyr	Gly	Ser	Asp	Val	Ser	Ser	Val	Ile	Arg	Ile	Arg
		290				295					300				
Thr	Ile	Arg	Arg	Arg	Gly	Gln	Gly	Ile	Ser	Ser	Gly	Phe	Arg	Gly	Val
305					310					315					320
Phe	Ser	Gln	Gly	His	Asp	Tyr	Asn	Ala	Ser	Glu	Asn	Leu	Tyr	Leu	Asn
			325						330					335	
Tyr	Arg	Thr	Gly	Gly	Leu	Asp	Leu	Phe	Val	Lys	Gly	Asp	Leu	Lys	His
		340						345					350		
Gly	Asn	Tyr	Tyr	Gln	Glu	Ser	Ile	Leu	Asn	Gln	Glu	Thr	Asp	Ala	Ser
		355					360					365			
Ser	Arg	Trp	Glu	Val	Lys	Gly	Gly	Ala	Thr	Ser	Phe	His	Lys	Ala	Val
		370				375					380				
Tyr	Phe	Ser	Gly	Glu	Val	Gly	Phe	Asn	Tyr	Glu	Leu	Asp	Asp	Lys	Asn
385					390					395					400
Ser	Leu	Gly	Ala	Arg	Tyr	Met	Pro	Gly	Ala	Asn	Val	Gly	Ser	Val	Asn
			405						410					415	
Arg	Thr	Asn	Leu	Gly	Asn	Asn	Phe	Val	Tyr	Lys	Asp	Gly	Glu	Lys	Ile
		420						425					430		
Glu	Glu	Ile	Ser	Ser	Leu	Gln	His	Ala	His	Thr	Tyr	Pro	Thr	Trp	Thr
		435				440						445			
His	Ser	Val	Asn	Gly	Tyr	Tyr	Asn	Gly	Val	Phe	Gly	Gln	Trp	Asn	Val
		450				455					460				
Asp	Phe	Asn	Ala	Asp	Tyr	Leu	Leu	Gly	Lys	Asn	Asn	Ser	Thr	Asn	Glu
465					470					475					480
Val	Phe	Asn	Asn	Asp	Asp	Lys	Ala	Ala	Gln	Ser	Glu	Asn	Glu	Val	Arg
				485					490					495	
Asn	Tyr	Leu	Tyr	Ala	Met	Arg	Met	Val	Val	Lys	Arg	Ser	Phe	Arg	Lys

			500					505					510				
Gly	Thr	Leu	Ser	Phe	Gly	Thr	Glu	Glu	Thr	Phe	Thr	Asn	Arg	His	Asp		
		515					520					525					
Val	Phe	Val	Gln	Ser	Gly	Phe	Ser	Asp	Asn	Ala	Asp	Asp	His	Ile	Lys		
		530				535						540					
Gln	Ser	Ile	Tyr	Ser	Val	Phe	Ala	Asp	Tyr	Ser	Leu	His	Leu	Asp	Lys		
545					550					555					560		
Phe	Asn	Val	Ala	Val	Gly	Leu	Arg	Tyr	Glu	His	Gln	Lys	Thr	Asp	Tyr		
				565					570					575			
Tyr	Glu	Tyr	Gly	Val	His	Gln	Asp	Glu	Gln	Ser	Pro	Val	Tyr	Asn	Asp		
			580					585					590				
Ile	Val	Pro	Val	Ala	Leu	Val	Gly	Tyr	Glu	Asp	Lys	Gly	Trp	His	Ala		
		595					600					605					
Ser	Leu	Ser	Tyr	Arg	Leu	Ile	Arg	Asn	Asn	Pro	Asp	Tyr	His	Met	Leu		
610					615						620						
Ser	Ser	Ser	Ile	Thr	Tyr	Ser	Ser	Lys	Tyr	Met	Tyr	Arg	Ser	Gly	Asp		
625				630					635						640		
Pro	Leu	Leu	Val	Pro	Gln	Lys	His	His	Val	Phe	Ile	Leu	Asp	Ala	Gly		
				645					650					655			
Ser	Arg	Trp	Ala	Phe	Val	Asn	Leu	Phe	Phe	Asp	Arg	Thr	Leu	Asp	Leu		
			660					665					670				
Tyr	Thr	Arg	Phe	Leu	Lys	Pro	Tyr	Asn	Asp	Glu	Thr	His	Pro	Gly	Val		
		675				680						685					
Leu	Leu	Phe	Thr	Met	Ala	Ser	Ile	Pro	Thr	Thr	Asp	Thr	Tyr	Gly	Met		
690						695					700						
Asn	Leu	Asn	Val	Ser	Pro	Lys	Ile	Gly	Cys	Trp	Gln	Pro	Gln	Leu	Asn		
705				710					715						720		
Gly	Gly	Met	Tyr	Phe	Tyr	Asp	Ala	Asp	Val	Arg	Ser	Leu	Gly	Ile	Thr		
				725				730						735			
Arg	His	Trp	Asn	Glu	Pro	Gln	Phe	Tyr	Phe	Glu	Leu	Asp	Asn	Ser	Phe		
			740					745					750				
Thr	Phe	Pro	Asp	Gly	Trp	Phe	Leu	Asn	Val	Asn	Gly	Asn	Ile	Ser	Thr		
		755				760						765					
Ala	Ala	Lys	Gln	Ser	Tyr	Ser	Leu	Ile	His	Arg	Glu	Gly	Thr	Val	Asn		
		770				775						780					
Ala	Arg	Leu	Ser	Lys	Ser	Phe	Leu	Glu	Asp	Ala	Leu	Met	Ile	Thr	Leu		
785				790					795						800		
Thr	Ala	Asp	Asp	Ile	Phe	His	Thr	Arg	Tyr	His	Tyr	Met	Asp	Gly	Tyr		
				805				810						815			
Gly	Val	Arg	Ser	His	Ile	Leu	Thr	Arg	Ser	Tyr	Asn	Asp	Asn	Gln	Arg		
			820				825						830				
Phe	Gly	Ile	Gln	Ile	Ser	Tyr	Lys	Phe	Asn	Ala	Thr	Lys	Ser	Lys	Tyr		
		835				840						845					
Lys	Gly	Thr	Gly	Ala	Gly	Gln	Ser	Glu	Lys	Gln	Arg	Leu					
		850				855					860						

<210> 8327

<211> 188

<212> PRT

<213> B.fragilis

<400> 8327

Phe	Cys	Trp	Leu	Met	Ala	Lys	Leu	Thr	Ile	Phe	Arg	Phe	Arg	Gly	His		
1			5						10					15			
Ile	Ser	Arg	Glu	Glu	Arg	Phe	Arg	Gln	Leu	Phe	Val	Glu	Ile	Tyr	Pro		
			20					25					30				
Arg	Leu	Leu	Arg	Tyr	Ala	Ile	Gln	Leu	Met	Ser	Asp	Arg	Glu	Glu	Ala		
			35				40					45					
Lys	Asp	Ile	Val	Gly	Glu	Val	Met	Glu	Glu	Ala	Trp	Lys	Cys	Phe	Asp		

50		55		60
Arg Leu Glu Ala Glu Thr Gln Asn Ala Tyr Phe Tyr Thr Ala Thr Arg				
65		70		75
Asn Thr Cys Leu Asn Arg Leu Lys His Leu Arg Val Glu Gln Gln His				
	85		90	95
Leu Asp Thr Leu Arg Glu Val Thr Arg Met Asp Val Asn Thr Gly Tyr				
	100		105	110
Arg Gln His Glu Ala Gln Leu Gln Gln Ala Glu Thr Ile Ala Cys Ser				
	115		120	125
Leu Ser Glu Pro Thr Arg Thr Ile Leu Arg Leu Cys Tyr Trp Glu Lys				
	130		135	140
Leu Thr Tyr Arg Gln Val Ala Glu Arg Leu Glu Ile Ser Pro Asp Thr				
145		150		155
Val Lys Lys His Ile Ser Lys Ala Leu Arg Ile Leu Arg Asn Glu Met				
	165		170	175
Asn Gly Lys Glu Glu Thr Asn Gly Thr Glu Arg Gly				
	180		185	

<210> 8328
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 8328
Cys Pro Ala Arg Arg Arg Lys Trp Arg Ile Lys Glu Ser Tyr Leu Val
1 5 10 15
Cys Ser Ala Gly Asn Ser Gly Ala Ser Ser Trp Lys Lys Ile Thr Thr
20 25 30
Pro Gly Asp Ala Glu Asn Val Leu Thr Val Gly Ala Ile Asp Arg Arg
35 40 45
Gly Val Leu Ala Ser Phe Ser Ser Ile Gly Asn Thr Ala Asp Asn Arg
50 55 60
Val Lys Pro Asp Val Val Ala Val Gly Leu Asn Ser Asp Val Met Gly
65 70 75 80
Thr Asn Gly Asn Leu Arg Lys Ala Ser Gly Thr Ser Phe Ala Ser Pro
85 90 95
Ile Leu Cys Gly Met Val Thr Cys Leu Trp Gln Ala Cys Pro Gln Leu
100 105 110
Thr Ala Lys Glu Ile Ile Glu Leu Val Arg Gln Ser Gly Asp Arg Val
115 120 125
Asp Phe Pro Asp Asn Ile Tyr Gly Tyr Gly Val Pro Asp Leu Trp Lys
130 135 140
Ala Tyr Gln Ser Val Ser Lys Lys Lys
145 150

<210> 8329
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 8329
Val Leu Arg Ser Glu Asp Glu Thr Ser Glu His Leu Val Glu Gln Asp
1 5 10 15
Tyr Leu Ala Ala Ala Val Glu Phe Ala Asp Ser Val Gly Val Asp Val
20 25 30
Val Asn Thr Ser Leu Gly Tyr Phe Thr Phe Asp Asp Ser Thr Lys Asn
35 40 45
Tyr Lys Tyr Arg Asp Leu Asp Gly His His Ala Leu Met Ser Arg Gln
50 55 60

Ala Ser Lys Met Ala Asp Lys Gly Ile Val Leu Gly Val Gln Cys Arg
 65 70 75 80

<210> 8330

<211> 590

<212> PRT

<213> B.fragilis

<400> 8330

Glu Arg Thr Arg Lys Ile Ile Ala Asn Thr Leu Lys Asn Met Thr Pro
 1 5 10 15
 Glu Leu Ala Tyr Phe Leu Lys Ile Asn Ile Ala Ile Ala Leu Phe Tyr
 20 25 30
 Ala Phe Tyr Arg Leu Phe Phe Tyr Arg Asp Thr Phe Phe Gln Trp Arg
 35 40 45
 Arg Thr Ala Leu Leu Cys Phe Leu Val Ile Ser Pro Leu Tyr Pro Val
 50 55 60
 Leu Asn Ile Gln Glu Trp Ile Arg Ser His Glu Pro Met Val Ala Met
 65 70 75 80
 Val Asp Leu Tyr Ala Thr Ile Val Leu Pro Glu Ile Glu Ile Thr Pro
 85 90 95
 Glu Val Arg Ala Ala Asp Trp Gln Ser Ile Ile Leu Ser Thr Val Asn
 100 105 110
 Ile Ile Tyr Trp Ser Gly Val Thr Leu Leu Leu Val Arg Phe Phe Ala
 115 120 125
 Gln Leu Ala Ser Ile Leu Arg Leu Arg Leu Arg Cys Arg Lys Asp Gln
 130 135 140
 Ile Glu Gly Ile Pro Val Tyr Leu Leu Asp Lys Glu Ser Gly Pro Phe
 145 150 155 160
 Ser Phe Phe His Trp Ile Phe Ile Tyr Pro Gln Ala His Pro Gln Asn
 165 170 175
 Glu Leu Ser Glu Ile Leu Thr His Glu Gly Thr His Ala Arg Gln Arg
 180 185 190
 His Ser Ile Asp Val Ile Ile Ser Glu Leu Met Cys Ile Ala Cys Trp
 195 200 205
 Phe Asn Pro Phe Met Trp Leu Met Lys Arg Glu Val Arg Asn Asn Leu
 210 215 220
 Glu Tyr Met Ala Asp Asn Arg Val Leu Glu Ala Gly His Asp Ser Lys
 225 230 235 240
 Ser Tyr Gln Tyr His Leu Leu Gly Leu Ala His Gln Lys Ser Ala Ile
 245 250 255
 Thr Leu Ser Asn Ser Phe Asn Val Leu Pro Leu Lys Asn Arg Ile Thr
 260 265 270
 Met Met Asn Lys Lys Arg Thr Lys Glu Ile Gly Arg Thr Lys Tyr Leu
 275 280 285
 Leu Phe Ile Pro Leu Ala Leu Ala Leu Met Ile Val Ser Asn Ile Glu
 290 295 300
 Ala Val Ala Arg Thr Thr Lys Ser Ile Ala Gln Glu Val Met Gln Thr
 305 310 315 320
 Val Glu Glu Gln Ile Glu Pro Glu Asn Ala Val Ala Val Lys Glu Ser
 325 330 335
 Thr Ser Ser Pro Gln Ala Ala Asn His Ile Ser Gln Pro Gln Glu Ser
 340 345 350
 Gly Ile Ala Glu Gln Pro Ala Gln Glu Glu Ser Gln Glu Ile Val
 355 360 365
 Phe Glu Val Val Glu Lys Met Pro Glu Phe Pro Gly Gly Val Arg Asn
 370 375 380
 Met Asn His Phe Ile Asn Ser His Leu Arg Tyr Pro Val Ile Ala Gln
 385 390 395 400


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<210> 8331
<211> 319
<212> PRT
<213> B.fragilis
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<400>	8331															
Thr	Glu	Arg	Arg	Lys	Gln	Met	Glu	Gln	Arg	Glu	Asp	Asn	Lys	Asn	Asp	
1				5					10					15		
Ile	Ala	Ser	Cys	Arg	Leu	Lys	Asn	Leu	Phe	Gly	Glu	Ala	Leu	Gly	Asp	
			20				25						30			
Leu	Ser	Ser	Val	Glu	Glu	Thr	Glu	Thr	Ala	Trp	Gln	Ala	Phe	Ala	Ser	
		35					40				45					
Arg	Arg	Arg	Gln	Glu	Arg	Val	Arg	Thr	Leu	Val	Phe	Gly	Phe	Ala	Ala	
	50					55					60					
Val	Ala	Ser	Val	Ala	Leu	Leu	Leu	Phe	Trp	Gly	Phe	Ser	Gln	Glu	Asn	
65				70						75					80	
Phe	Leu	Ser	Gln	Glu	Val	Glu	Val	Phe	Ala	Ser	Val	Asn	Ser	Pro	Asp	
			85						90				95			
Lys	Leu	Val	Met	Thr	Glu	Asp	Lys	Gly	Ile	Ile	Ala	Val	Arg	Thr	Pro	
		100						105				110				
Pro	Ala	Thr	Thr	Ile	Thr	Ile	His	Leu	Pro	Asp	Ser	Thr	Glu	Val	Leu	
		115					120					125				
Leu	Asn	Ala	Asn	Ser	Arg	Leu	Glu	Tyr	Pro	Lys	Ala	Phe	Thr	Gly	Asp	
	130					135				140						
Leu	Arg	Arg	Val	Met	Leu	Glu	Gly	Ala	Ala	Arg	Phe	Asn	Val	Gln	Arg	
145				150						155					160	
Asp	Thr	Leu	His	Pro	Phe	Ile	Val	Glu	Thr	Gly	Ser	Leu	Gln	Thr	Arg	
			165						170					175		
Val	Leu	Gly	Thr	Val	Phe	Asp	Val	Asp	Ser	Tyr	Gly	Cys	Gly	Thr	Thr	
		180						185				190				
Ser	Lys	Val	Val	Leu	Tyr	Glu	Gly	Ser	Val	Gln	Val	Ser	Asp	Lys	Ala	
		195				200				205						
Asn	Thr	Lys	Ala	Cys	Lys	Ile	Lys	Pro	Gly	Glu	Gln	Val	Tyr	Leu	Asp	
	210					215				220						

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<210> 8332
<211> 526
<212> PRT
<213> B.fragilis
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Arg 1	Leu	Tyr	Gly	Lys 5	Ile	Asp	Val	Ala	Val 10	Ser	Val	Thr	Leu	Pro 15	Gln
Pro	Glu	Ser	Val 20	Asn	Thr	Leu	Thr	Arg 25	Ala	Gly	Gly	Pro	Tyr 30	Thr	Asp
Thr	Asp	Ile	Lys 35	Asn	Ala	Asp	Leu 40	Leu	Ile	Phe	Asp	Lys 45	Asp	Ala	Lys
Phe	Met 50	Glu	Arg	Val	Lys	Val 55	Asp	Asn	Asp	Arg	Leu 60	Val	Val	Thr	Gly
Thr 65	Gly	Ile	Asn	Phe 70	Thr	Val	Arg	Leu	Asp	Ala 75	Thr	Ser	Glu	Arg	Arg
Ile	Ile	His	Leu 85	Val	Ala	Asn	Gly	Arg 90	Ser	Ala	Asp	Gly	Thr 95	Ser	Asp
Arg	Leu	Asn	Phe 100	Gly	Gly	Ile	Thr	Pro 105	Gly	Met	Ala	Glu	Asn 110	Ala	Ala
Ile	Ser	Ser	Leu 115	Gln	Thr	Ala	Ser 120	Leu	Glu	His	Val 125	Asp	Glu	Gly	Glu
Ser	Thr 130	Leu	Leu	Asn	His 135	Val	Met	Pro	Leu	Val 140	Met	Trp	Gly	Arg	Phe
Ala 145	Leu	Asn	Gly	Ile 150	Asn	Ile	Val	Thr	Lys	Ala 155	Glu	Gly	Val	Lys	Leu
Leu	Arg	Ser	Thr 165	Ala	Cys	Ile	Gln	Val 170	Lys	Lys	Gly	Asn	Gly 175	Gly	Gly
Asn	Thr	Gly 180	Leu	Gly	Asp	Phe	Val 185	Ile	Glu	Gly	Ile	Thr 190	Val	His	Gln
Gly	Ala	Cys 195	His	Gly	Phe	Leu	Ala 200	Pro	Thr	Asp	Cys 205	Thr	Gly	Glu	Val
Asn	Thr 210	Pro	Val	Val 215	Ala	Asn	Pro	Val	Thr	Gly	Gly 220	Thr	Tyr	Leu	Asp
Tyr 225	Arg	Lys	Gly	Trp 230	Val	Asn	Gly	Ala	Glu	Pro 235	Ser	Leu	Tyr	Ile	Tyr
Glu	Arg	Asn	Cys 245	Ser	Ala	Ser	Asp	Tyr 250	Met	Gly	Val	Val	Ile 255	Ala	Ala
Arg	Tyr	Lys 260	Gly	Lys	Lys	Gly	Tyr 265	Tyr	Lys	Val	Val	Met 270	Asn	Gly	Asn
Asp	Gly	Ser 275	Pro	Leu	Asn	Ile	Val 280	Arg	Asn	His	Arg 285	Tyr	Ile	Val	Thr
Val	Val 290	Gly	Val	Asn	Gly 295	Pro	Gly	Tyr	Glu	Ser 300	Pro	Asp	Ile	Ala	Val
Ala 305	Ser	Ala	Pro	Ser 310	Asn	Ala	Leu	Lys	Val 315	Glu	Leu	Thr	Asp	Glu	Asp

Thr Asp Leu Pro Cys Ile Val Ala Asp Gly Gln Tyr Arg Met Ala Ser
 325 330 335
 Ser Asn Asn Val Phe Ser Leu Tyr Gly Lys Thr Gly Val Thr Thr Ser
 340 345 350
 Ala Thr Gly Val Asp Ile Cys Thr Val Tyr Ser Ser Arg Gly Ile Gln
 355 360 365
 Pro Val Leu Thr Leu Pro Asp Asp Cys Asn Trp Leu Thr Asn Leu Ser
 370 375 380
 Ala Gln Ala Leu Gly Ser Asn Lys Tyr Lys Ile Thr Gly Asp Phe Thr
 385 390 395 400
 Ser Ala Ala Asn Asp Ala Val Ala Thr Thr Leu Thr Met Thr Cys Asp
 405 410 415
 Asn Leu Ser Gln Pro Val Arg Val Ser Trp Asn Pro Ile Ile Ser Asp
 420 425 430
 Gln Lys Asp Ile Asp Ser Phe Val Leu Asp Leu Val Gly Ser Thr Asp
 435 440 445
 Arg Asn Trp Thr Val Arg Val Leu Asn Pro Thr Ser Pro Gly Trp Leu
 450 455 460
 Phe Leu His Pro Ser Ala Ala Ser Pro Gly Ala Leu Pro Gly Asp Gly
 465 470 475 480
 Met Val Ser Glu Leu Ser Ser Lys Tyr Ser Ser His Ala Tyr Leu His
 485 490 495
 Val Ala Phe Gly Ala Asn Arg Arg Gly Thr Val Gln Met Thr Ser Ala
 500 505 510
 Ser Gly Gly Glu Thr Val Ala Arg Lys Ile Val Val Ile Gln
 515 520 525

<210> 8333

<211> 431

<212> PRT

<213> B.fragilis

<400> 8333

Thr Phe Ser Gly Ile Pro His Ala Cys Lys Pro Pro Ser Leu His Cys
 1 5 10 15
 Ser Ser Ser Glu Arg His Lys Ala Pro Leu Tyr Gly His Asp Val Arg
 20 25 30
 Glu Ile Thr Pro His Ile Pro His Arg Ser Asp Arg Val Pro Thr Gly
 35 40 45
 Gly His Ser Gly Glu Thr Asp Pro Lys His Arg Tyr Arg Thr Ala Leu
 50 55 60
 Cys Val Pro Pro Leu Gln Gln Ala Gly Lys Ala His Ala Leu Pro Val
 65 70 75 80
 Ile Pro Tyr Arg Lys His Cys Phe Pro Arg Gly Leu Leu Phe Cys Ser
 85 90 95
 Ser Phe Ile Glu Arg Leu Phe Asn Asn Ser His Pro Ser Val Ser Ile
 100 105 110
 Gly Phe Val Thr Ile Leu Asp Ala Thr Gln Phe Ile Ile Lys Leu Leu
 115 120 125
 Thr Asn Arg Ser Arg Leu Ser Ile Phe Arg Asn His Ile Arg Leu Ala
 130 135 140
 Ile Leu Lys Val Val Asn Thr Phe Asp Arg Thr Asp Asn Gly Ser Ser
 145 150 155 160
 Thr Thr Ser Ser Arg Phe Phe Glu Ser Ala Gln Leu Phe Phe Gly Tyr
 165 170 175
 Arg Thr Ala Leu Tyr Phe His Ala His Ile Phe Arg Gln Leu His Gln
 180 185 190
 Ala Leu Ile Gly Asp Gly Arg Lys Asp Gly Ser Arg Leu Arg Ser Asp
 195 200 205

Val Gly Ile Val Phe Asn Thr Lys Glu Val Gly Arg Thr Thr Phe Val
 210 215 220
 Asn Val Phe Phe Ile Phe Cys Val Gln Ile Glu Leu Ala Gly Ile Thr
 225 230 235 240
 Gln Val Val Ser Leu Leu Ile Gly Ala Gln Thr Gly Cys Ile Val Ser
 245 250 255
 Thr Asp Phe Val Asp Thr Gly Ser Val Arg Arg Ser Thr Val Val Leu
 260 265 270
 Ala Asp Asn Asp Ile Arg Ile Gly Arg Glu Ala Thr Leu Glu Ile Arg
 275 280 285
 Thr Asp Arg Cys Asp Lys Tyr Asn Lys His Ile Phe Ile Cys Arg Met
 290 295 300
 Asp Thr His Leu Gly Thr Gly Ser Asp Lys Gln Arg Ala Asn Val Lys
 305 310 315 320
 Arg Ser Ser Thr Leu Val Arg Arg Asn Lys Ala Phe Val Gln Phe Tyr
 325 330 335
 His Phe Gln Asp Ser Phe Leu Glu Thr Phe Arg Arg Gln Phe Ser His
 340 345 350
 His Asp Ala Leu Thr Gly Gly Leu Gln Thr Arg Ser Ile Leu Leu Gln
 355 360 365
 Thr Glu Asn Thr His Phe Ala Val Phe Thr Thr Glu Ser Phe Gln Thr
 370 375 380
 Leu Glu Gly Phe Leu Thr Ile Met Gln Ala Ser Gly Ser His Val Gln
 385 390 395 400
 Val Gln His Leu Ala Thr Ala Tyr Phe Glu Phe Ala Pro Cys Ala Val
 405 410 415
 Thr Glu Ile Asp Ser His Ile Val Val Cys Leu His Ile Thr Glu
 420 425 430

<210> 8334

<211> 301

<212> PRT

<213> B.fragilis

<400> 8334

Cys Val Leu Gly Gly Ile Val Leu Phe Cys Ser Val Leu Phe Leu Tyr
 1 5 10 15
 Leu Arg Lys Lys Tyr Glu Ser Ile Lys Lys Asp Ala Ser Val Leu Ile
 20 25 30
 Ala Gly Leu Val Val Ala Ser Cys Ala Asn Asp Leu Asp Gly Phe Ile
 35 40 45
 Ser Ile Pro Asp Asn Ala Thr Gly Val Gln Gln Ile Ser Thr Arg Ser
 50 55 60
 Ser Ser Asp Asn Leu Lys Ile Val Tyr His Gly Lys Val Tyr Glu Thr
 65 70 75 80
 Leu Tyr Thr Ile Ile Asp Asp Ser Ile Tyr Ser Tyr Gln Asn Ser Glu
 85 90 95
 Val Lys Asp Leu Met Asp Asn Leu Ser Glu Thr Arg Pro Asn Leu Arg
 100 105 110
 Thr Phe Ile His Gly Asn Gly Val Ile Glu Tyr Phe Asp Asp Glu Asn
 115 120 125
 Asp Phe Asn Leu Asn Lys Glu Arg Ile Met Ser Glu Tyr Glu Lys Glu
 130 135 140
 Ser Leu Ser Thr Ser Leu Ser Glu Arg Trp Phe Pro Thr Asp Asn Val
 145 150 155 160
 Pro Gln Leu Ala Pro Ile Asp Pro Glu Asn Asn Glu Val Glu Ile Tyr
 165 170 175
 Leu Tyr Glu Asp Pro Tyr Tyr Leu Gly Asp Leu Phe Ser Leu Gln Arg
 180 185 190

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Asn Arg Ser Asp Ser Asp Tyr Asn Glu Leu Ser Lys Val Trp Asn Phe
    195                      200                205
Gly Gly Gln Ile Leu Ser Met Ile Val His Thr Ile Gly Phe Gly Gly
    210                      215                220
Val Phe Thr Phe Tyr Glu Arg Met Gly Cys Gln Gly Lys Gly Ile Thr
    225                      230                235                240
Leu Val Leu Thr Ala Gly Gln Tyr Ile Asn Leu Cys Ser Glu Leu Ser
    245                      250                255
Ala Asp Ala Met Arg Gly Ile Ser Tyr Gly Ser Ile Ala Met Ser Asp
    260                      265                270
Leu Arg Ser Leu His Trp Ser Gly Ile Ala Gly Asn Trp Asn Asn Arg
    275                      280                285
Ile Cys Cys Ile Lys Val Asp Arg Tyr Ile Gly Met Met
    290                      295                300

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<210> 8335
 <211> 347
 <212> PRT
 <213> B.fragilis

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<400> 8335
Trp Thr Arg Gly Tyr Arg Pro Ile Cys Pro Leu Gly Ala Val Asp Leu
  1      5      10
Asp Asn Ser Ala Ser Ser Arg Asn Ile Leu Arg Asn Leu Asp Ala Phe
    20      25      30
Gly Gln Thr Ala Val Val Ala Arg Tyr Ser Ser Val Asn Glu Ala Arg
    35      40      45
Thr Ala Met Gln Glu Gly Lys Ile Tyr Gly Phe Phe Tyr Ile Pro Lys
    50      55      60
Gly Met Ser Ala Asp Ala Gln Ser Gln Arg Gln Pro Lys Leu Ser Phe
    65      70      75      80
Tyr Thr Asn Asn Ser Tyr Leu Ile Ala Gly Ser Leu Leu Phe Lys Asp
    85      90      95
Met Lys Met Met Ser Glu Leu Ala Ser Gly Ala Ala Ala Arg Ser Val
    100     105     110
Leu Tyr Ala Lys Gly Ala Thr Glu Asp Gln Ala Met Gly Tyr Leu Gln
    115     120     125
Pro Ile Val Ile Asp Thr His Pro Ile Gln Asn Pro Trp Leu Asn Tyr
    130     135     140
Ser Val Tyr Leu Cys Asn Thr Leu Val Pro Gly Val Leu Met Leu Leu
    145     150     155     160
Ile Phe Met Val Thr Val Phe Ser Ile Gly Val Glu Ile Lys Asp Arg
    165     170     175
Thr Ala Arg Glu Trp Leu Arg Leu Ser Asn Asn Ser Ile Tyr Ile Ala
    180     185     190
Leu Ala Gly Lys Leu Leu Pro Gln Thr Val Val Phe Phe Ile Met Gly
    195     200     205
Ile Phe Tyr Asn Val Tyr Leu Tyr Gly Tyr Leu His Phe Pro Cys Asn
    210     215     220
Ser Gly Ile Leu Pro Met Leu Leu Ala Thr Leu Cys Leu Val Leu Ala
    225     230     235     240
Ser Gln Cys Cys Gly Ile Leu Met Ile Gly Thr Leu Pro Thr Leu Arg
    245     250     255
Leu Gly Leu Ser Phe Ala Ser Leu Trp Gly Val Ile Ser Phe Ser Ile
    260     265     270
Ser Gly Phe Ser Phe Pro Val Met Ala Met Asn Pro Val Leu Gln Ala
    275     280     285
Leu Ser Asn Leu Phe Pro Leu Arg His Tyr Phe Leu Ile Tyr Val Asp
    290     295     300

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Gln Ala Leu Asn Gly Tyr Ser Met Ala Tyr Ser Trp Ser Asn Tyr Met
 305 310 315 320
 Ala Leu Leu Ile Phe Met Leu Leu Pro Phe Phe Val Val His Arg Leu
 325 330 335
 Lys Glu Ala Leu Ile Tyr Tyr Lys Tyr Val Pro
 340 345

<210> 8336
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 8336
 Asn Ser Asn Met Pro Ala Lys Lys Lys Glu Thr Tyr Ser Gln Ala Ile
 1 5 10 15
 Glu Arg Leu Glu Lys Ile Val Arg Gln Ile Asp Ser Asn Glu Leu Glu
 20 25 30
 Ile Asp Glu Leu Ser Glu Lys Ile Lys Glu Ala Asn Glu Ile Ile Ala
 35 40 45
 Phe Cys Thr Gly Lys Leu Thr Lys Ala Asp Gln Glu Ile Glu Lys Leu
 50 55 60
 Leu Gln Glu Lys Arg Leu Ser Glu Glu
 65 70

<210> 8337
 <211> 470
 <212> PRT
 <213> B.fragilis

<400> 8337
 Asn Ser Cys Met Glu Lys Ile Ser Arg Thr Lys Ile Val Asp Leu Met
 1 5 10 15
 Lys Arg Glu Asp Phe Gly Ala Met Val Asn Val Lys Gly Trp Val Arg
 20 25 30
 Thr Arg Arg Gly Ser Lys Gln Val Asn Phe Ile Ala Leu Asn Asp Gly
 35 40 45
 Ser Thr Ile Asn Asn Val Gln Val Val Val Asp Leu Ala Asn Phe Asp
 50 55 60
 Glu Glu Met Leu Lys Gln Ile Thr Thr Gly Ala Cys Leu Ser Val Asn
 65 70 75 80
 Gly Val Leu Thr Glu Ser Val Gly Ala Gly Gln Lys Ala Glu Val Gln
 85 90 95
 Ala Arg Glu Ile Glu Val Leu Gly Thr Cys Asp Asn Thr Tyr Pro Leu
 100 105 110
 Gln Lys Lys Gly His Ser Met Glu Phe Leu Arg Glu Ile Ala His Leu
 115 120 125
 Arg Pro Arg Thr Asn Thr Phe Gly Ala Val Phe Arg Ile Arg His Asn
 130 135 140
 Met Ala Ile Ala Ile His Lys Phe Phe His Glu Lys Gly Phe Phe Tyr
 145 150 155 160
 Phe His Thr Pro Ile Ile Thr Ala Ser Asp Cys Glu Gly Ala Gly Gln
 165 170 175
 Met Phe Gln Val Thr Thr Met Asn Leu Tyr Asp Leu Lys Lys Asp Glu
 180 185 190
 Asn Gly Ser Ile Val Tyr Asp Asp Phe Phe Gly Lys Gln Ala Ser
 195 200 205
 Leu Thr Val Ser Gly Gln Leu Glu Gly Glu Leu Ala Ala Thr Ala Leu
 210 215 220
 Gly Ala Ile Tyr Thr Phe Gly Pro Thr Phe Arg Ala Glu Asn Ser Asn

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225          230          235          240
Thr Pro Arg His Leu Ala Glu Phe Trp Met Ile Glu Pro Glu Val Ala
          245          250          255
Phe Asn Glu Ile Gln Glu Asn Met Asp Leu Ala Glu Glu Phe Ile Lys
          260          265          270
Tyr Cys Val Arg Trp Ala Leu Asp Asn Cys Ala Asp Asp Val Lys Phe
          275          280          285
Leu Asn Asp Met Phe Asp Lys Gly Leu Ile Glu Arg Leu Glu Gly Val
          290          295          300
Leu Lys Glu Asp Phe Val Arg Leu Pro Tyr Thr Glu Gly Ile Lys Ile
305          310          315          320
Leu Glu Glu Ala Val Ala Lys Gly His Lys Phe Glu Phe Pro Val Tyr
          325          330          335
Trp Gly Val Asp Leu Ala Ser Glu His Glu Arg Tyr Leu Val Glu Asp
          340          345          350
His Phe Lys Arg Pro Val Ile Leu Thr Asp Tyr Pro Lys Glu Ile Lys
          355          360          365
Ala Phe Tyr Met Lys Gln Asn Glu Asp Gly Lys Thr Val Arg Ala Met
          370          375          380
Asp Val Leu Phe Pro Lys Ile Gly Glu Ile Ile Gly Gly Ser Glu Arg
385          390          395          400
Glu Ser Asp Tyr Asn Lys Leu Met Thr Arg Ile Glu Glu Met His Ile
          405          410          415
Pro Met Lys Asp Met Trp Trp Tyr Leu Asp Thr Arg Lys Phe Gly Thr
          420          425          430
Cys Pro His Ser Gly Phe Gly Leu Gly Phe Glu Arg Leu Leu Leu Phe
          435          440          445
Val Thr Gly Met Ser Asn Ile Arg Asp Val Ile Pro Phe Pro Arg Thr
          450          455          460
Pro Arg Asn Ala Asp Phe
465          470

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<210> 8338
<211> 124
<212> PRT
<213> B.fragilis

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<400> 8338
Ile Tyr Ser Met Glu Lys Leu Thr Met Gln Glu Glu Glu Val Met Ile
1          5          10          15
Tyr Ile Trp Glu Leu Glu Ser Cys Tyr Val Lys Asp Ile Val Ala Lys
          20          25          30
Phe Glu Gln Pro Thr Pro Pro Tyr Thr Thr Val Ala Ser Ile Val Lys
          35          40          45
Asn Leu Glu Arg Lys Lys Tyr Val Lys Ala Gln Arg Val Gly Asn Thr
          50          55          60
Tyr Leu Tyr Thr Pro Ser Ile Lys Glu Ser Glu Tyr Lys Arg Ser Phe
65          70          75          80
Met Ser Gly Val Val Arg Asn Tyr Phe Glu Asn Ser Tyr Lys Glu Met
          85          90          95
Val Ser Phe Phe Ala Lys Asp Gln Lys Ile Ser Thr Asn Asp Leu Lys
          100          105          110
Glu Ile Ile Asp Met Ile Glu Lys Gly Gln Glu Lys
          115          120

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<210> 8339
<211> 746
<212> PRT
<213> B.fragilis

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<400> 8339

Lys Thr Asn Ile Leu Pro Lys Met Lys Ile Lys Arg Leu Tyr Leu Leu
 1 5 10 15
 Gly Ala Trp Leu Leu Leu Gly Val Ser Ala Ser Ala Gln Ile Thr Ser
 20 25 30
 Ile Gln Pro Gln Pro Gln Gln Val Leu Ser Gln Ala Arg Asn Leu Ser
 35 40 45
 Leu Pro Asp Thr Tyr Leu Ile Val Gly Asp Thr Glu Ala Asn Thr His
 50 55 60
 Ala Val Ser Ala Leu Lys Thr Leu Leu Ala Gly Lys His Ser Asp Lys
 65 70 75 80
 Asn Gly Phe Arg Ile Tyr Ile Gly Glu Lys Gly Asp Lys Ala Ile Arg
 85 90 95
 Lys Phe Ala Arg Gln Ile Pro Asn His Lys Glu Gly Tyr Tyr Leu Ala
 100 105 110
 Ile Asn Asp Lys Glu Ile Val Leu Ala Gly Gln Asp Glu Arg Gly Thr
 115 120 125
 Phe Tyr Ala Leu Gln Thr Leu Ala Gln Leu Leu Asn Asp Asn Gln Leu
 130 135 140
 Pro Val Val Glu Ile Lys Asp Tyr Pro Ser Val Arg Phe Arg Gly Val
 145 150 155 160
 Val Glu Gly Phe Tyr Gly Thr Pro Trp Ser His Glu Ala Arg Leu Arg
 165 170 175
 Gln Leu Lys Phe Tyr Gly Glu Asn Lys Met Asn Thr Tyr Ile Tyr Gly
 180 185 190
 Pro Lys Asp Asp Pro Tyr His Ser Ser Pro Asn Trp Arg Leu Pro Tyr
 195 200 205
 Pro Glu Lys Glu Ala Leu Gln Leu Gln Glu Leu Val Lys Val Ala Asn
 210 215 220
 Glu Asn Glu Val Asp Phe Val Trp Ala Ile His Pro Gly Gln Asp Ile
 225 230 235 240
 Lys Trp Asn Gln Glu Asp Arg Asp Leu Leu Leu Ala Lys Phe Glu Lys
 245 250 255
 Met Tyr Asp Leu Gly Val Arg Ser Phe Ala Val Phe Phe Asp Asp Ile
 260 265 270
 Ser Gly Glu Gly Thr Asn Pro Asn Lys Gln Ala Glu Leu Leu Asn Tyr
 275 280 285
 Ile Asp Glu Lys Phe Val Lys Val Lys Pro Asp Val Thr Pro Leu Val
 290 295 300
 Met Cys Pro Thr Glu Tyr Asn Lys Ser Trp Ser Asn Pro Lys Gly Asn
 305 310 315 320
 Tyr Leu Thr Thr Leu Gly Glu Lys Leu Asn Pro Ser Ile Gln Ile Met
 325 330 335
 Trp Thr Gly Asp Arg Val Ile Ser Asp Ile Thr Lys Asp Gly Ile Ala
 340 345 350
 Trp Ile Asn Ala Arg Ile Lys Arg Pro Ala Tyr Ile Trp Trp Asn Phe
 355 360 365
 Pro Val Ser Asp Tyr Val Arg Asp His Leu Leu Leu Gly Pro Val Tyr
 370 375 380
 Gly Asn Asp Thr Gln Ile Ala Asp Gln Met Ser Gly Phe Val Thr Asn
 385 390 395 400
 Pro Met Glu His Ala Glu Ala Ser Lys Ile Ala Ile Tyr Ser Val Ala
 405 410 415
 Gly Tyr Ala Trp Asn Pro Glu Lys Tyr Asn Ser Glu Gln Thr Trp Lys
 420 425 430
 Asp Ala Ile Arg Thr Ile Leu Pro Ser Ala Ala Asp Glu Leu Glu Phe
 435 440 445
 Phe Ala Ala His Asn Ser Asp Leu Gly Pro Asn Gly His Lys Tyr Arg

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450		455		460
Arg Asp Glu Ser Val	Glu Leu Gln Pro Leu	Ser Gln Arg Phe Leu Asp		
465	470	475		480
Ser Tyr Leu Lys Asn Gly	Ser Tyr Thr Glu Ala Asp	Phe Asn Ala Leu		
	485	490		495
Glu Ala Thr Phe Gly Lys Met Val	Glu Ser Gly Asp Ile Leu Met Thr			
	500	505		510
Asn Thr Gly Asn Arg Pro Leu Ile Val	Glu Met Met Pro Trp Leu Arg			
	515	520		525
Gln Phe Lys Leu Leu Gly Glu Thr Gly Gln Glu Val Leu Ala Met Ala				
	530	535		540
Lys Ala Tyr Lys Lys Gly Asp Asn Ser Leu Phe Ile Arg Lys Tyr Arg				
	545	550		555
His Val Lys Ala Leu Gln Gln Gln Met Phe Gln Val Asp Gln Thr Tyr				
	565	570		575
Asn Gln Asn Pro Tyr Gln Pro Gly Val Lys Thr Ala Thr Lys Val Ile				
	580	585		590
Lys Pro Leu Ile Asp Gln Thr Phe Thr Thr Val Thr Glu Arg Tyr Asn				
	595	600		605
Lys Glu His Gly Thr Gln Leu Asp Ala Ala Thr Asp Tyr Met Pro His				
	610	615		620
Lys Leu Val Ser Asp Val Glu Gln Leu Arg Asn Gln Pro Leu Gln Ile				
	625	630		635
Lys Thr Asn Arg Val Leu Val Ser Pro Ala Asn Glu Val Ile Lys Trp				
	645	650		655
Gly Ala Gly Cys Thr Leu Thr Ile Glu Leu Asp Gln Ala Tyr Pro Gly				
	660	665		670
Glu Asn Leu Asp Ile Asp Phe Gly Lys Pro Asp Val Ala Ala Trp Gly				
	675	680		685
Gln Leu Glu Ile Ser Ala Asp Gly Lys Glu Trp Gln Lys Val Asp Phe				
	690	695		700
Lys Gln Glu Lys Asn Arg Ile Thr Leu Asn Leu Lys Gln Thr Pro Val				
	705	710		715
Lys Ala Val Arg Phe Ser Asn Val Gly Asn Ala Glu Gln Glu Val Tyr				
	725	730		735
Leu Arg Arg Phe Met Ile Thr Leu Asp Lys				
	740	745		

<210> 8340

<211> 119

<212> PRT

<213> B.fragilis

<400> 8340

Thr Gly Lys Met Lys Asn Ser Asp Trp Lys Asp Arg Leu Asn Val Val		
1	5	10
Tyr Ser Thr Asn Pro Asp Tyr Asn Tyr Glu Met Asp Asp Asp Glu Glu		
	20	25
Gln Val Thr Leu Glu Pro Ser Gln Gln Asn Leu Arg Val Gln Leu Asp		
	35	40
Arg Lys Asn Arg Gly Gly Lys Val Val Thr Leu Ile Thr Gly Phe Val		
	50	55
Gly Thr Glu Asn Asp Leu Lys Asp Leu Gly Lys Leu Leu Lys Thr Lys		
	65	70
Cys Gly Val Gly Gly Ser Ala Lys Asp Gly Glu Ile Ile Val Gln Gly		
	85	90
Asp Phe Lys Gln Lys Ile Val Glu Leu Leu Lys Lys Glu Gly Tyr Thr		
	100	105
Lys Thr Lys Ala Val Gly Gly		110

115

<210> 8341
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 8341
 Ser Met Lys Ile Ile Ala Val Gly Met Asn Tyr Ala Arg His Asn Glu
 1 5 10 15
 Glu Leu Gly His Thr Leu Glu Asn Lys Glu Pro Val Ile Phe Met Lys
 20 25 30
 Pro Asp Ser Ala Ile Leu Lys Asp Gly Lys Pro Phe Phe Ile Pro Asp
 35 40 45
 Phe Ser Asn Glu Val His Tyr Glu Thr Glu Leu Val Val Arg Ile Asn
 50 55 60
 Arg Leu Gly Lys Asn Ile Ala Ser Arg Phe Ala His Arg Tyr Tyr Asp
 65 70 75 80
 Ala Val Thr Val Gly Ile Asp Phe Thr Ala Arg Asp Leu Gln Arg Arg
 85 90 95
 Phe Arg Glu Ala Gly Asn Pro Trp Glu Leu Cys Lys Gly Phe Asp Ser
 100 105 110
 Ser Ala Ala Ile Gly Thr Phe Val Pro Val Glu Gln Leu Ala Asp Val
 115 120 125
 Gln Asn Leu His Phe His Leu Asp Ile Asp Gly Lys Thr Val Gln Gln
 130 135 140
 Gly His Thr Ala Asp Met Leu Phe Arg Val Asp Asp Ile Ile Ala Tyr
 145 150 155 160
 Val Ser Arg Phe Val Thr Leu Lys Ile Gly Asp Leu Leu Phe Thr Gly
 165 170 175
 Thr Pro Val Gly Val Gly Pro Val Ser Ile Gly Gln His Leu Glu Gly
 180 185 190
 Tyr Leu Glu Thr Glu Lys Leu Leu Asp Phe Tyr Ile Arg
 195 200 205

<210> 8342
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 8342
 Lys Tyr Glu Met Lys Lys Leu Ala Leu Ile Ala Leu Val Phe Val Ala
 1 5 10 15
 Leu Gly Ala Ser Ala Gln Gln Asp Thr Leu Lys Tyr Arg Ile Ser Leu
 20 25 30
 Lys Asp Lys Val Gly Asn His Leu Phe Thr Gly Ser Ser Arg Glu Ile
 35 40 45
 Leu Val Gly Lys Ser His Arg Pro Pro Pro Ala Ser Ala Val Ala Cys
 50 55 60
 Arg Leu Tyr Arg Ser Ala Gly Leu Pro Ser Val Cys Gly Cys His Pro
 65 70 75 80
 Arg Gln Gly Ser Glu Asp Cys Gly Tyr Gly Lys Met Gly
 85 90

<210> 8343
 <211> 643
 <212> PRT
 <213> B.fragilis

<400> 8343

Phe Ile Ser Leu Leu Cys Phe Ile Asn Lys Pro Ile Asn Thr Thr Met
 1 5 10 15
 Arg Thr Lys Ser Ile Phe Leu Leu Leu Leu Ala Val Met Pro Leu
 20 25 30
 Cys Val Phe Ser Gln Ser Lys Ser Thr Phe Glu Ile Lys Asn Gly His
 35 40 45
 Phe Tyr Arg Asn Gly Lys Ile Thr Pro Val Leu Ser Gly Glu Met His
 50 55 60
 Tyr Ala Arg Ile Pro His Gln Tyr Trp Arg His Arg Leu Gln Met Met
 65 70 75 80
 Lys Gly Met Gly Leu Asn Thr Val Ala Thr Tyr Val Phe Trp Asn Leu
 85 90 95
 His Glu Pro Glu Pro Gly Lys Trp Asp Phe Thr Gly Asp Lys Asn Leu
 100 105 110
 Ala Glu Phe Ile Lys Thr Ala Gly Glu Glu Gly Met Met Val Ile Leu
 115 120 125
 Arg Pro Gly Pro Tyr Val Cys Ala Glu Trp Glu Phe Gly Gly Tyr Pro
 130 135 140
 Trp Trp Leu Gln Asn Val Lys Gly Met Glu Ile Arg Arg Asp Asn Pro
 145 150 155 160
 Glu Phe Leu Lys Tyr Thr Lys Ala Tyr Ile Asp Arg Leu Tyr Lys Glu
 165 170 175
 Val Gly Ser Leu Gln Cys Thr Lys Gly Gly Pro Ile Val Met Val Gln
 180 185 190
 Cys Glu Asn Glu Phe Gly Ser Tyr Val Ala Gln Arg Lys Asp Ile Pro
 195 200 205
 Leu Glu Glu His Arg Ala Tyr Asn Ala Lys Ile Lys Gln Gln Leu Ala
 210 215 220
 Asp Ala Gly Phe Asn Val Pro Leu Phe Thr Ser Asp Gly Ser Trp Leu
 225 230 235 240
 Phe Glu Gly Gly Ala Thr Pro Gly Ala Leu Pro Thr Ala Asn Gly Glu
 245 250 255
 Ser Asp Ile Glu Asn Leu Lys Lys Val Val Asp Gln Tyr His Asp Gly
 260 265 270
 Lys Gly Pro Tyr Met Val Ala Glu Phe Tyr Pro Gly Trp Leu Ser His
 275 280 285
 Trp Ala Glu Pro Phe Pro Gln Ile Gly Ala Ser Gly Ile Ala Arg Gln
 290 295 300
 Thr Glu Lys Tyr Leu Gln Asn Asp Val Ser Phe Asn Phe Tyr Met Val
 305 310 315 320
 His Gly Gly Thr Asn Phe Gly Phe Thr Ser Gly Ala Asn Tyr Asp Lys
 325 330 335
 Lys Arg Asp Ile Gln Pro Asp Met Thr Ser Tyr Asp Tyr Asp Ala Pro
 340 345 350
 Ile Ser Glu Ala Gly Trp Val Thr Pro Lys Tyr Asp Ser Ile Arg Asn
 355 360 365
 Val Ile Lys Lys Tyr Val Lys Tyr Thr Ile Pro Glu Ala Pro Ala Pro
 370 375 380
 Asn Pro Val Ile Glu Ile Pro Ser Ile Gln Leu Asn Lys Val Ala Asp
 385 390 395 400
 Val Leu Ala Phe Ala Glu Lys Gln Lys Pro Val Ser Ser Asp Thr Pro
 405 410 415
 Leu Thr Phe Glu Gln Leu Asn Gln Gly Tyr Gly Tyr Val Leu Tyr Thr
 420 425 430
 Arg His Phe Asn Gln Pro Ile Ser Gly Thr Leu Glu Ile Pro Gly Leu
 435 440 445
 Arg Asp Tyr Ala Val Val Tyr Val Asp Gly Glu Gln Val Gly Val Leu
 450 455 460

Asn Arg Asn Thr Lys Thr Tyr Ser Met Glu Ile Glu Val Pro Phe Asn
 465 470 475 480
 Ala Thr Leu Gln Ile Leu Val Glu Asn Met Gly Arg Ile Asn Tyr Gly
 485 490 495
 Ser Glu Ile Val His Asn Thr Lys Gly Ile Ile Ser Pro Val Gln Ile
 500 505 510
 Ala Gly Lys Glu Ile Val Gly Gly Trp Asp Met Tyr Gln Leu Pro Met
 515 520 525
 Asp Glu Met Pro Asp Leu Thr Lys Leu Lys Ala Asp Thr His Lys Asn
 530 535 540
 Val Pro Ser Glu Val Ala Lys Leu Lys Gly Cys Pro Val Leu Tyr Glu
 545 550 555 560
 Gly Thr Phe Thr Leu Asp Lys Val Gly Asp Thr Phe Met Asp Met Glu
 565 570 575
 Ser Trp Gly Lys Gly Ile Val Phe Val Asn Gly Val Asn Ile Gly Arg
 580 585 590
 Tyr Trp Lys Val Gly Pro Gln Gln Thr Leu Tyr Val Pro Gly Val Trp
 595 600 605
 Leu Lys Lys Gly Glu Asn Lys Ile Val Ile Phe Glu Gln Leu Asn Glu
 610 615 620
 Thr Pro Gln Thr Glu Val Lys Thr Val Lys Thr Pro Val Leu Met Lys
 625 630 635 640
 Leu Lys Gly

<210> 8344
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 8344
 Lys Cys Pro Phe Leu Ile Ser Asn Val Asp Phe Asp Cys Glu Asn Thr
 1 5 10 15
 His Asn Gly Met Thr Ala Asn Asn Lys Ser Lys Lys Ile Asp Phe Val
 20 25 30
 Arg Met Val Val Leu Ile Gly Leu Leu Met Lys Gln Ser Lys Glu Ile
 35 40 45
 Asn His Phe Pro Ala Lys Phe Pro Phe Val Phe Phe Lys Lys Ile Thr
 50 55 60

<210> 8345
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8345
 Leu Gln Arg Ser His Ala Phe Leu Tyr Thr Lys Asp Ser Phe Glu Gly
 1 5 10 15
 Thr Gly Arg Asp Arg Arg Lys Glu Lys Ser Met Lys Ala Ala Arg Asn
 20 25 30
 Ser Gly Ile Cys Met Lys Leu Asp Asp Phe Thr Gly Val Leu Ser Leu
 35 40 45
 Glu His Leu Asp Val Asn Thr Met Val Tyr Leu Tyr Ser Glu Gln Gly
 50 55 60
 Glu Leu Ile Gly Lys Ile His Ser Thr Lys Ser Ser Ala Thr Phe Thr
 65 70 75 80
 Leu Pro Gln Lys Gly Met Tyr Val Leu Val Ile His Cys Leu Ser Tyr
 85 90 95
 Pro Val Glu Val Arg Arg Val Ile Tyr

100

105

<210> 8346
 <211> 331
 <212> PRT
 <213> B.fragilis

<400> 8346

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Asp Met Val Ser Ala Ile Thr Lys Thr Leu Arg Thr Asn Asn Lys Thr
1      5      10      15
Val Tyr Val Ser Leu Leu Ser Ile Leu Thr Phe Phe Leu Met Leu Asp
      20      25      30
Tyr Ile Pro Gly Leu Gln Ala Phe Ser Thr Trp Val Thr Pro Pro Leu
      35      40      45
Ala Leu Phe Leu Gly Leu Ala Phe Ala Leu Thr Cys Gly Gln Ala His
      50      55      60
Pro Lys Phe Asn Lys Lys Thr Ser Lys Tyr Leu Leu Gln Tyr Ser Val
      65      70      75      80
Val Gly Leu Gly Phe Gly Met Asn Leu His Ser Ala Leu Ala Ser Gly
      85      90      95
Lys Glu Gly Met Glu Phe Thr Ile Val Ser Val Ile Gly Thr Leu Ile
      100      105      110
Leu Gly Trp Phe Ile Gly Arg Lys Phe Leu Lys Val Asp Arg Asn Thr
      115      120      125
Ser Tyr Leu Ile Ser Ser Gly Thr Ala Ile Cys Gly Gly Ser Ala Ile
      130      135      140
Ala Ala Val Gly Pro Val Val Lys Ala Asn Asp Ser Glu Met Ser Val
      145      150      155      160
Ala Leu Ala Thr Ile Phe Ile Leu Asn Ala Leu Ala Leu Phe Ile Phe
      165      170      175
Pro Val Ile Gly His Ala Leu Asn Met Ser Gln His Glu Phe Gly Thr
      180      185      190
Trp Ala Ala Ile Ala Ile His Asp Thr Ser Ser Val Val Gly Ala Gly
      195      200      205
Ala Ala Tyr Gly Glu Glu Ala Leu Lys Val Ala Thr Thr Ile Lys Leu
      210      215      220
Thr Arg Ala Leu Trp Ile Ile Pro Met Ala Phe Ala Thr Ser Phe Ile
      225      230      235      240
Phe Lys Ser Lys Gly Gln Lys Ile Ser Ile Pro Trp Phe Ile Phe Phe
      245      250      255
Phe Val Leu Ala Met Ile Val Asn Thr Tyr Leu Leu Gly Ser Val Pro
      260      265      270
Glu Leu Gly Ala Ala Ile Asn Gly Leu Ala Arg Lys Thr Leu Thr Ile
      275      280      285
Thr Met Phe Phe Ile Gly Ala Ser Leu Ser Leu Asp Val Val Lys Ser
      290      295      300
Val Gly Ile Lys Pro Leu Ile Gln Gly Val Leu Leu Trp Val Val Ile
      305      310      315      320
Ser Leu Ser Thr Leu Ala Tyr Ile Tyr Trp Phe
      325      330

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<210> 8347
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 8347

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Lys Lys Tyr Pro Ile Leu Lys Pro Ile Ile Asn Arg Pro Asn Asn Met
1      5      10      15

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Glu Asp Phe Lys Lys Lys Ile Gly Thr Asp Met Asn Asp Lys Glu Ile
 20 25 30
 Val Phe Ser Lys Ser Ile Lys Ala Gly Lys Arg Ile Tyr Tyr Leu Asp
 35 40 45
 Val Lys Lys Asn Arg Lys Asp Glu Met Phe Leu Ala Ile Thr Glu Ser
 50 55 60
 Lys Lys Val Val Met Gly Glu Gly Asp Asp Ser Gln Val Ser Phe Glu
 65 70 75 80
 Lys His Lys Ile Phe Leu Tyr Lys Glu Asp Phe Gly Lys Phe Met Ala
 85 90 95
 Gly Leu Glu Gln Ala Ile Asn Phe Ile Asn Gln Asn Gln Glu Tyr Thr
 100 105 110
 Glu Asp Ser Glu Ser Glu Glu Lys Val Glu Pro Glu Ser Glu Pro Glu
 115 120 125
 Thr Thr Val Leu Asp Ser Glu Ile Lys Ile Asp Ile Asp Phe Glu
 130 135 140

<210> 8348
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 8348
 Tyr Thr Met Leu Lys Thr Ile Leu Ser Ile Ser Gly Lys Pro Gly Leu
 1 5 10 15
 Tyr Lys Leu Ile Ser Gln Gly Lys Asn Met Leu Ile Val Glu Thr Ile
 20 25 30
 Asp Ala Ala Lys Lys Arg Phe Pro Ala Tyr Gly Asn Glu Lys Ile Ile
 35 40 45
 Ser Leu Ala Asp Ile Ala Met Tyr Thr Asn Asp Ser Glu Val Pro Leu
 50 55 60
 Arg Asp Val Leu Arg Ser Ile Lys Glu Lys Glu Asn Ala Ala Ile Ala
 65 70 75 80
 Ser Ile Asp Val Lys Lys Ala Thr Ser Glu Gln Leu Arg Glu Tyr Leu
 85 90 95
 Ala Glu Val Leu Pro Asp Phe Asp Arg Asp Arg Val Tyr Thr Asn Asp
 100 105 110
 Ile Lys Lys Leu Ile Leu Trp Tyr Asn Ile Leu Val Ser Asn Gly Ile
 115 120 125
 Thr Asp Phe Gly Glu Glu Thr Ala Val Glu Ala Glu
 130 135 140

<210> 8349
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 8349
 Ser Phe Gln Pro Arg Gly Glu Asp Phe Leu Gly Tyr Arg Pro Gly Val
 1 5 10 15
 Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn
 20 25 30
 Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala
 35 40 45
 Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys
 50 55 60
 Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys
 65 70 75 80
 His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile

85 90 95
 Phe Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe
 100 105 110
 Glu Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg
 115 120 125
 Leu Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp
 130 135 140
 Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser
 145 150 155 160
 Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu
 165 170 175
 Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro
 180 185 190
 Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu
 195 200 205
 Ile His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala
 210 215 220
 Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe
 225 230 235 240
 Ile Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu
 245 250 255
 Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu
 260 265 270
 Phe Gly

<210> 8350

<211> 868

<212> PRT

<213> B.fragilis

<400> 8350

Glu Arg Arg Thr Asn Asp Met Asn Phe Asn Asn Phe Thr Ile Lys Ser
 1 5 10 15
 Gln Glu Ala Val Gln Glu Ala Ile Asn Leu Ala Gln Ser Arg Gly Gln
 20 25 30
 Gln Ala Ile Glu Thr Ala His Ile Leu Tyr Gly Val Met Lys Val Gly
 35 40 45
 Glu Asn Val Thr Asn Phe Ile Phe Gln Lys Leu Gly Leu Asn Gly Gln
 50 55 60
 Gln Ile Ser Leu Val Leu Asp Lys Gln Ile Asp Ser Phe Pro Lys Val
 65 70 75 80
 Ser Gly Gly Glu Pro Tyr Leu Ser Arg Glu Ala Asn Glu Val Phe Gln
 85 90 95
 Lys Ala Thr Gln Tyr Ser Lys Glu Met Gly Asp Glu Phe Val Ser Leu
 100 105 110
 Glu His Leu Leu Leu Ala Leu Leu Thr Val Lys Ser Thr Val Ser Thr
 115 120 125
 Ile Leu Lys Asp Ala Gly Met Thr Glu Lys Glu Leu Arg Gly Ala Ile
 130 135 140
 Ser Glu Leu Arg Lys Gly Glu Lys Val Thr Ser Gln Ser Ser Glu Asp
 145 150 155 160
 Asn Tyr Gln Ser Leu Glu Lys Tyr Ala Ile Asn Leu Asn Glu Ala Ala
 165 170 175
 Arg Ser Gly Lys Leu Asp Pro Val Ile Gly Arg Asp Glu Glu Ile Arg
 180 185 190
 Arg Val Leu Gln Ile Leu Ser Arg Arg Thr Lys Asn Asn Pro Ile Leu
 195 200 205
 Ile Gly Glu Pro Gly Thr Gly Lys Thr Ala Ile Val Glu Gly Leu Ala

210	215	220
His Arg Ile Leu Arg Gly Asp Val Pro Glu Asn Leu Lys Asn Lys Gln		
225	230	235
Val Tyr Ser Leu Asp Met Gly Ala Leu Val Ala Gly Ala Lys Tyr Lys		240
	245	250
Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Val Asn Glu Val Lys Lys		255
	260	265
Ser Glu Gly Asn Ile Ile Leu Phe Ile Asp Glu Ile His Thr Leu Val		270
	275	280
Gly Ala Gly Lys Gly Glu Gly Ala Met Asp Ala Ala Asn Ile Leu Lys		285
	290	295
Pro Ala Leu Ala Arg Gly Glu Leu Arg Ser Ile Gly Ala Thr Thr Leu		300
305	310	315
Asp Glu Tyr Gln Lys Tyr Phe Glu Lys Asp Lys Ala Leu Glu Arg Arg		320
	325	330
Phe Gln Ile Val Gln Val Asp Glu Pro Asp Asn Leu Ser Thr Ile Ser		335
	340	345
Ile Leu Arg Gly Leu Lys Glu Arg Tyr Glu Asn His His His Val Arg		350
	355	360
Ile Lys Asp Asp Ala Ile Ile Ala Ala Val Glu Leu Ser Ser Arg Tyr		365
	370	375
Ile Thr Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Met Asp Glu		380
385	390	395
Ala Ala Ala Lys Leu Arg Met Glu Val Asp Ser Val Pro Glu Gly Leu		400
	405	410
Asp Glu Ile Ser Arg Lys Ile Lys Gln Leu Glu Ile Glu Arg Glu Ala		415
	420	425
Ile Lys Arg Glu Asn Asp Glu Pro Lys Leu Gln Thr Ile Gly Lys Glu		430
	435	440
Leu Ala Glu Leu Lys Glu Gln Glu Lys Ser Tyr Lys Ala Lys Trp Gln		445
	450	455
Ser Glu Lys Ser Leu Met Asp Ile Ile Gln Gln Asn Lys Val Glu Ile		460
465	470	475
Glu Asn Leu Lys Phe Glu Ala Asp Lys Ala Glu Arg Glu Gly Asn Tyr		480
	485	490
Gly Lys Val Ala Glu Ile Arg Tyr Gly Lys Leu Gln Glu Leu His Lys		495
	500	505
Glu Ile Glu Asp Thr Gln Lys Lys Leu His Glu Met Gln Gly Asp Thr		510
	515	520
Ala Met Ile Lys Glu Glu Val Asp Ala Glu Asp Ile Ala Asp Val Val		525
	530	535
Ser Arg Trp Thr Gly Ile Pro Val Ser Lys Met Met Gln Ser Glu Lys		540
545	550	555
Asp Lys Leu Leu His Leu Glu Glu Glu Leu His Gln Arg Val Ile Gly		560
	565	570
Gln Asp Glu Ala Ile Ala Ala Val Ser Asp Ala Val Arg Arg Ser Arg		575
	580	585
Ala Gly Leu Gln Asp Pro Lys Arg Pro Ile Gly Ser Phe Ile Phe Leu		590
	595	600
Gly Thr Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala Leu Ala Glu		605
	610	615
Phe Leu Phe Asp Asp Glu Thr Met Met Thr Arg Ile Asp Met Ser Glu		620
625	630	635
Tyr Gln Glu Lys His Ser Val Ser Arg Leu Val Gly Ala Pro Pro Gly		640
	645	650
Tyr Val Gly Tyr Asp Glu Gly Gly Gln Leu Thr Glu Ala Ile Arg Arg		655
	660	665
Lys Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Pro		670
	675	680
		685

Asp Val Phe Asn Ile Leu Leu Gln Val Leu Asp Asp Gly Arg Leu Thr
 690 695 700
 Asp Asn Lys Gly Arg Val Val Asn Phe Lys Asn Thr Ile Ile Ile Met
 705 710 715 720
 Thr Ser Asn Met Gly Ser Ser Tyr Ile Gln Ser Gln Met Glu Lys Leu
 725 730 735
 Asn Gly Ala Asn Asn Glu Glu Val Val Glu Glu Thr Lys Lys Glu Val
 740 745 750
 Met Asn Met Leu Lys Lys Thr Ile Arg Pro Glu Phe Leu Asn Arg Ile
 755 760 765
 Asp Glu Thr Ile Met Phe Leu Pro Leu Thr Glu Lys Asp Ile Lys Gln
 770 775 780
 Ile Val Leu Leu Gln Ile Lys Ser Val Gln Lys Met Leu Ala Gly Asn
 785 790 795 800
 Gly Val Glu Leu Glu Leu Thr Asp Ala Ala Leu Asp Phe Leu Ser Gln
 805 810 815
 Val Gly Tyr Asp Pro Glu Phe Gly Ala Arg Pro Val Lys Arg Ala Ile
 820 825 830
 Gln Arg Tyr Leu Leu Asn Asp Leu Ser Lys Lys Leu Leu Ala Gln Glu
 835 840 845
 Val Asp Arg Ser Lys Ala Ile Ile Val Asp Ala Gln Gly Asp Gly Leu
 850 855 860
 Val Phe Arg Asn
 865

<210> 8351
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 8351
 Ala Val Leu Ala Gly Leu Tyr Glu Ile Cys Ile Glu Tyr Phe Arg Glu
 1 5 10 15
 Leu Ile Cys Arg Ile Gln Gly Phe Leu Ile Ile Phe Val Ala Ile Arg
 20 25 30
 Arg Asn Leu Lys Ser Gln Cys Tyr Glu Glu Tyr Tyr Thr Lys Arg Thr
 35 40 45
 Lys Ala Phe Leu Arg Tyr Tyr Ser Val Leu Glu Ile Trp Thr Ile Ser
 50 55 60
 Leu Phe Arg Asn Asn Val Thr Asn Ala His Ala Leu Leu Tyr Met Gln
 65 70 75 80
 Ile Tyr Ser Ile Glu Arg Gly Leu Leu Tyr Ile Ile
 85 90

<210> 8352
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 8352
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser

65		70		75		80
Tyr His Pro Thr	Leu Arg Thr Cys Ser	Ser Asp Thr Ile	Leu Arg Ala			
	85	90	95			
Ile Lys Glu Leu Thr	Gln Glu Asn Ile	Ser Tyr Thr Ser	Asp Gln Gly			
	100	105	110			
Lys Thr Tyr Asp Phe	Asn Thr Ala Asp	Lys Leu Asn Thr	Leu Leu Ile			
	115	120	125			
Asn Ala Leu Val Ser	Thr Gly Glu Leu	Lys Glu Ile Glu	Glu Tyr Asp			
	130	135	140			
Val Asp Phe Asp His	Gln Phe Leu Glu	Thr Glu Lys Tyr	Asp Ala Lys			
	145	150	155			
Pro Thr Tyr Lys Lys	Phe Leu Gly Tyr	Arg Pro Gly Val	Tyr Val Ile			
	165	170	175			
Gly Asp Lys Ile Val	Tyr Ile Glu Asn	Ser Asp Gly Asn	Thr Asn Val			
	180	185	190			
Arg Phe His Gln Ala	Asp Thr His Lys	Arg Phe Phe Ala	Leu Leu Glu			
	195	200	205			
Ser Gln Asn Ile Arg	Val Asn Arg Phe	Arg Ala Asp Cys	Gly Ser Cys			
	210	215	220			
Ser Lys Glu Ile Val	Ser Glu Ile Glu	Lys His Cys Lys	His Phe Tyr			
	225	230	235			
Ile Arg Ala Asn Arg	Cys Ser Ser Leu	Tyr Asn Asp Ile	Phe Ala Leu			
	245	250	255			
Arg Gly Trp Lys Thr	Glu Glu Ile Asn	Gly Ile Gln Phe	Glu Leu Asn			
	260	265	270			
Ser Ile Leu Val Glu	Lys Trp Glu Gly	Lys Cys Tyr Arg	Leu Val Ile			
	275	280	285			
Gln Arg Gln Arg Arg	Asn Ser Gly Asp	Leu Asp Leu Trp	Glu Gly Glu			
	290	295	300			
Tyr Thr Tyr Arg Cys	Ile Leu Thr Asn	Asp Tyr Lys Ser	Ser Thr Arg			
	305	310	315			
Asp Ile Val Glu Phe	Tyr Asn Leu Arg	Gly Gly Lys Glu	Arg Ile Phe			
	325	330	335			
Asp Asp Met Asn Asn	Gly Phe Gly Trp	Ser Arg Leu Pro	Lys Ser Phe			
	340	345	350			
Met Ala Glu Asn Thr	Val Phe Leu Leu	Leu Thr Ala Leu	Ile His Asn			
	355	360	365			
Phe Tyr Lys Thr Ile	Met Ser Arg Leu	Asp Thr Lys Ala	Phe Gly Leu			
	370	375	380			
Lys Lys Thr Ser Arg	Ile Lys Ala Phe	Val Phe Arg Phe	Ile Ser Val			
	385	390	395			
Pro Ala Lys Trp Ile	Met Thr Ala Arg	Gln Tyr Val Leu	Asn Ile Tyr			
	405	410	415			
Thr Glu Asn Arg Ala	Tyr Ala Lys Pro	Phe Lys Thr Glu	Phe Gly			
	420	425	430			

<210> 8353

<211> 189

<212> PRT

<213> B.fragilis

<400> 8353

Ile Asn Lys Ala Cys	Leu Gly Thr Lys	Tyr Ser Met Glu	Ile Trp Asn
1	5	10	15
Cys Asn Gln His Asn	Asn Met Pro Asn	Pro Lys Val Ser	Gln Ser Ala
	20	25	30
Tyr Leu Leu Leu Glu	Glu Ser Ser Lys	Met Asn Val Gly	Asp Lys Ala
	35	40	45
Pro Glu Leu Leu Gly	Ile Asn Glu Lys	Gly Glu Glu Val	Arg Leu Asn

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<210> 8354
<211> 407
<212> PRT
<213> B.fragilis
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<400>	8354														
Ile	Leu	Asn	Leu	Lys	Phe	Leu	Ile	Lys	Glu	Met	Gly	Arg	Val	Leu	Ile
1				5					10					15	
Ile	Gly	Ala	Gly	Gly	Val	Gly	Thr	Val	Val	Ala	His	Lys	Val	Ala	Gln
			20					25					30		
Asn	Ala	Asp	Val	Phe	Thr	Asp	Ile	Met	Ile	Ala	Ser	Arg	Thr	Lys	Ser
		35					40					45			
Lys	Cys	Asp	Asp	Ile	Val	Lys	Ala	Ile	Gly	Asn	Pro	Asn	Ile	Lys	Thr
	50					55					60				
Ala	Gln	Val	Asp	Ala	Asp	Asn	Val	Asp	Glu	Leu	Val	Ala	Leu	Phe	Asn
65					70					75					80
Asp	Phe	Lys	Pro	Glu	Met	Val	Ile	Asn	Val	Ala	Leu	Pro	Tyr	Gln	Asp
				85					90					95	
Leu	Thr	Ile	Met	Glu	Ala	Cys	Leu	Lys	Ala	Gly	Val	Asn	Tyr	Leu	Asp
			100					105					110		
Thr	Ala	Asn	Tyr	Glu	Pro	Lys	Asp	Glu	Ala	His	Phe	Glu	Tyr	Ser	Trp
		115					120					125			
Gln	Trp	Ala	Tyr	His	Glu	Arg	Phe	Lys	Glu	Ala	Gly	Leu	Thr	Ala	Ile
	130					135					140				
Leu	Gly	Cys	Gly	Phe	Asp	Pro	Gly	Val	Ser	Gly	Ile	Tyr	Thr	Ala	Tyr
145					150					155					160
Ala	Ala	Lys	His	Tyr	Phe	Asp	Glu	Ile	Gln	Tyr	Leu	Asp	Ile	Val	Asp
				165					170					175	
Cys	Asn	Ala	Gly	Asn	His	His	Lys	Ala	Phe	Ala	Thr	Asn	Phe	Asn	Pro
			180					185					190		
Glu	Ile	Asn	Ile	Arg	Glu	Ile	Thr	Gln	Asn	Gly	Arg	Tyr	Tyr	Glu	Asn
		195					200					205			
Gly	Gln	Trp	Val	Thr	Thr	Gly	Pro	Leu	Glu	Ile	His	Lys	Asp	Leu	Thr
	210					215					220				
Tyr	Pro	Asn	Ile	Gly	Pro	Arg	Asp	Ser	Tyr	Leu	Leu	Tyr	His	Glu	Glu
225					230					235					240
Leu	Glu	Ser	Leu	Val	Lys	Asn	Phe	Pro	Thr	Ile	Lys	Arg	Ala	Arg	Phe
				245					250					255	
Trp	Met	Thr	Phe	Gly	Gln	Glu	Tyr	Leu	Thr	His	Leu	Arg	Val	Ile	Gln
			260					265					270		
Asn	Ile	Gly	Met	Ala	Arg	Ile	Asp	Glu	Ile	Asp	Tyr	Asn	Gly	Gln	Lys

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      275              280              285
Ile Val Pro Leu Gln Phe Leu Lys Ala Val Leu Pro Asn Pro Gln Asp
  290              295              300
Leu Gly Glu Asn Tyr Glu Gly Glu Thr Ser Ile Gly Cys Arg Ile Arg
 305              310              315              320
Gly Leu Lys Asp Gly Lys Glu Arg Thr Tyr Tyr Val Tyr Asn Asn Cys
      325              330              335
Ser His Glu Glu Ala Tyr Lys Glu Thr Gly Met Gln Gly Val Ser Tyr
      340              345              350
Thr Thr Gly Val Pro Ala Met Ile Gly Ala Met Met Phe Phe Lys Gly
      355              360              365
Glu Trp Lys Arg Pro Gly Val Asn Asn Val Glu Glu Phe Asn Pro Asp
      370              375              380
Pro Phe Met Glu Gln Leu Asn Lys Gln Gly Leu Pro Trp His Glu Val
 385              390              395              400
Phe Asp Gly Asn Leu Glu Leu
      405

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<210> 8355
 <211> 105
 <212> PRT
 <213> B.fragilis

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<400> 8355
His Val His Tyr Leu Phe Leu Gly Phe Phe His Tyr Phe Leu Val Val
 1              5              10              15
Gly Ala Val Gln Phe Phe His Leu Ala Leu Tyr Val Ala Ala Ala His
      20              25              30
Ile Gly Gly His Asn Asp Asp Cys Ile Phe Lys Val Tyr His Thr Ala
      35              40              45
Phe Val Ile Cys Gln Pro Ser Val Ile Glu Tyr Leu Gln Gln Asp Ile
      50              55              60
Lys Tyr Ile Arg Met Cys Phe Leu Asp Phe Ile Lys Gln Tyr Tyr Arg
 65              70              75              80
Ile Gly Phe Ala Thr Asp Arg Leu Cys Gln Leu Ser Ala Phe Val Ile
      85              90              95
Ser Tyr Ile Ser Arg Arg Arg Ser Asn
      100              105

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<210> 8356
 <211> 243
 <212> PRT
 <213> B.fragilis

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<400> 8356
Glu Met Asn Leu Glu Glu Val Leu Asn Tyr Arg Arg Ser Val Arg Val
 1              5              10              15
Phe Asp Lys Thr Lys Pro Leu Asp Pro Glu Lys Val Lys His Cys Leu
      20              25              30
Glu Leu Ala Thr Leu Ala Pro Asn Ser Ser Asn Met Gln Leu Trp Glu
      35              40              45
Phe Tyr Gln Val Ile Gln Pro Glu Leu Leu Ala Lys Ile Ser Lys Ala
      50              55              60
Cys Leu Asp Gln Thr Ala Thr Ser Thr Ala Ser Glu Val Val Val Phe
 65              70              75              80
Val Thr Arg Gln Asp Leu Tyr Arg Ser Arg Ala Lys Phe Val Leu Asp
      85              90              95
Phe Glu Arg Gly Asn Val Arg Arg Asn Ser Pro Lys Glu Arg Gln Glu
      100              105              110

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Lys Arg Ile Lys Asp Arg Glu Leu Tyr Tyr Gly Lys Leu Met Pro Phe
 115 120 125
 Leu Tyr Ala Arg Phe Phe Arg Ile Leu Gly Leu Leu Arg Ser Val Leu
 130 135 140
 Ala Lys Ala Ile Gly Leu Phe Arg Pro Ile Val Arg Glu Val Ser Glu
 145 150 155 160
 Ser Asp Met Arg Val Val His Lys Ser Cys Ala Leu Ala Ala Gln
 165 170 175
 Thr Phe Met Ile Ala Met Ala Asn Glu Gly Tyr Asp Thr Cys Pro Leu
 180 185 190
 Glu Gly Phe Asp Ser Lys Gln Met Lys Lys Leu Leu Lys Leu Pro His
 195 200 205
 Gly Ala Glu Val Asn Met Val Ile Ala Cys Gly Ile Arg Asp Gly Asn
 210 215 220
 Lys Gly Ile Trp Gly Glu Arg Gly Arg Val Pro Phe Asp Glu Val Tyr
 225 230 235 240
 His Arg Val

<210> 8357
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 8357
 Asn Asn Ser Leu Leu Met Ala Ile Lys Ile Gly Ile Thr Gly Gly Ile
 1 5 10 15
 Gly Ser Gly Lys Ser Val Val Ser His Leu Leu Glu Val Met Gly Val
 20 25 30
 Pro Val Tyr Ile Ser Asp Glu Glu Ser Lys Lys Val Val Ala Thr Asp
 35 40 45
 Pro Val Ile Arg Lys Glu Leu Cys Asp Leu Val Gly Glu Glu Val Phe
 50 55 60
 Ser Gly Gly Lys Leu Asn Lys Thr Leu Leu Ala Thr Tyr Leu Phe Ala
 65 70 75 80
 Ser Ser Thr His Ala Ser Gln Val Asn Gly Ile Ile His Pro Arg Val
 85 90 95
 Lys Glu His Phe Arg Gln Trp Ser Ser His Lys Glu Cys Leu Asp Ile
 100 105 110
 Ile Gly Met Glu Ser Ala Ile Leu Ile Glu Ser Gly Phe Ala Asp Glu
 115 120 125
 Val Asp Cys Ile Val Met Val Tyr Ala Pro Leu Glu Leu Arg Val Glu
 130 135 140
 Arg Ala Val Arg Arg Asp Asn Ala Ser Cys Glu Gln Ile Met Gln Arg
 145 150 155 160
 Ile Arg Ser Gln Met Ser Asp Glu Glu Lys Cys Glu Arg Ala Ser Phe
 165 170 175
 Val Ile Ile Asn Asp Gly Glu Lys Pro Leu Ile Pro Gln Ile Leu Glu
 180 185 190
 Leu Ile Ala Phe Leu Tyr Gln Lys Ile His Tyr Leu Cys Ser Ala Lys
 195 200 205
 Asn Asn
 210

<210> 8358
 <211> 83
 <212> PRT
 <213> B.fragilis

Thr	Phe	Gly	Asn	Ser	Arg	Arg	Asn	Arg	Gln	Lys	Leu	Leu	Phe	Gly	Arg
1				5					10					15	
Tyr	Arg	His	His	Asp	Glu	Ser	Val	Gln	Gln	Lys	Ile	Ile	Ile	His	Phe
			20					25						30	
Ser	Ile	His	Asn	Gln	Met	Pro	Glu	Ala	Arg	Ile	Asp	Lys	Trp	Met	Trp
			35				40					45			
Ala	Val	Arg	Ile	Phe	Lys	Thr	Arg	Thr	Ile	Ala	Ala	Glu	Ala	Cys	Lys
			50			55					60				
Lys	Gly	Arg	Ile	Ser	Ile	Asn	Gly	Ser	Phe	Val	Lys	Ala	Ala	Arg	Met
65				70					75					80	
Ile	Lys	Pro	Gly	Asp	Val	Ile	Gln	Val	Lys	Lys	Pro	Pro	Ile	Thr	Tyr
			85					90						95	
Ser	Phe	Lys	Val	Leu	Gln	Ala	Ile	Glu	Lys	Arg	Val	Gly	Ala	Lys	Leu
			100					105					110		
Val	Ser	Glu	Met	Met	Glu	Asn	Val	Thr	Thr	Pro	Asp	Gln	Tyr	Glu	Leu
			115				120					125			

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<210> 8361
<211> 423
<212> PRT
<213> B.fragilis
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<400>	8361															
Ser 1	Leu	Met	Asn	Gln	Lys	Arg	Asn	Gln	Thr	Lys	Val	Val	Asn	Val	Phe	
				5					10					15		
Thr	Val	Phe	Met	Val	Met	Leu	Ile	Leu	Tyr	Phe	Ile	Val	Gly	Leu	Phe	
			20					25					30			
Thr	Val	Ile	Asn	Gln	Gln	Phe	Gln	Ile	Pro	Leu	Gln	Thr	Ala	Met	Leu	
			35				40					45				
Pro	His	Asp	Gly	Asn	Ile	Thr	Asn	Ala	Leu	Val	Thr	Met	Leu	Asn	Phe	
	50					55					60					
Ser 65	Trp	Phe	Leu	Ala	Tyr	Pro	Leu	Ser	Glu	Gly	Phe	Gly	Thr	Arg	Trp	
					70					75					80	
Leu	Glu	Lys	Tyr	Gly	Tyr	Arg	Lys	Thr	Ser	Tyr	Leu	Ala	Leu	Leu	Ile	
				85					90					95		
Leu	Ile	Ala	Gly	Leu	Ala	Ile	Tyr	Glu	Ala	Ala	Val	Leu	Phe	His	Ile	
			100					105					110			
Tyr	Thr	Pro	Met	Gln	Val	Ser	Ile	Ile	Gly	Asn	His	Ile	Ser	Val	Gly	
			115				120					125				
Phe	Phe	Ile	Phe	Leu	Ile	Gly	Ser	Phe	Val	Ile	Gly	Val	Ala	Ala	Thr	
	130					135					140					
Ile	Leu	Gln	Val	Val	Leu	Asn	Leu	Tyr	Leu	Thr	Val	Cys	Arg	Ile	Gly	
145					150					155					160	
Lys	Thr	Thr	Ala	Leu	Gln	Arg	Gln	Met	Ile	Gly	Gly	Thr	Ser	Asn	Ser	
				165					170					175		
Ile	Gly	Met	Ala	Ile	Ala	Pro	Leu	Val	Ile	Ser	Tyr	Leu	Ile	Phe	His	
			180					185					190			
Gly	Thr	Pro	Leu	His	Asp	Ile	Val	Thr	Lys	Gln	Phe	Ile	Ile	Pro	Leu	
			195				200					205				
Ile	Ile	Leu	Ile	Leu	Ile	Met	Leu	Ile	Ile	Thr	Leu	Leu	Val	Gly	Lys	
	210					215					220					
Thr	Gln	Met	Pro	Ser	Ile	Asp	Asn	Val	Arg	Gln	Ala	Pro	Gly	Glu	Lys	
225					230					235				240		
Phe	Asp	Lys	Ser	Val	Trp	Ser	Phe	Arg	Asn	Leu	Lys	Leu	Gly	Val	Trp	
				245					250					255		
Gly	Ile	Phe	Phe	Tyr	Val	Gly	Ile	Glu	Val	Ala	Val	Gly	Ala	Asn	Val	
			260					265					270			
Asn	Met	Tyr	Ala	Ser	Glu	Leu	Gly	Gly	Ser	Phe	Ala	Ser	Asn	Ala	Thr	
		275					280					285				
His	Met	Ala	Ala	Leu	Tyr	Trp	Gly	Leu	Leu	Leu	Leu	Gly	Arg	Phe	Leu	
	290					295					300					
Gly	Ser	Phe	Ile	Lys	Gln	Val	Pro	Ser	Glu	Lys	Gln	Leu	Val	Ile	Ala	
305					310					315					320	

Ala Ile Phe Thr Leu Ala Thr Asp Gln Leu Gly Lys Tyr Thr Thr Lys
 355 360 365
 Ala Ser Gly Val Leu Thr Met Gly Val Ile Gly Gly Ile Ile Pro
 370 375 380
 Leu Leu Gln Gly Ile Phe Ala Asp Val Met Gly Gly Asn Trp Leu Trp
 385 390 395 400
 Thr Trp Leu Leu Val Ile Ala Gly Glu Ala Tyr Ile Leu Tyr Tyr Gly
 405 410 415
 Leu Asn Gly Tyr Lys Gln His
 420

<210> 8362
 <211> 229
 <212> PRT
 <213> B.fragilis

<400> 8362

Thr Ile Met Lys Thr Met Lys Phe Ile Leu Ala Cys Val Leu Leu Leu
 1 5 10 15
 Ser Pro Leu Leu Cys Gln Ala Gln Lys Asn Leu Phe Asn Lys Tyr Asn
 20 25 30
 Asp Met Lys Gly Val Ser Ser Val Tyr Ile Ser Lys Ala Met Met Glu
 35 40 45
 Leu Asn Pro Asn Leu Phe Met Lys Asp Leu Tyr Ile Gly Lys Val Ala
 50 55 60
 Glu His Leu Asn Ser Val Gln Val Leu Ser Thr His Asp Asn Lys Val
 65 70 75 80
 Arg Glu Glu Met Ala Lys Asp Ile Arg Ser Leu Val Gln Ser Ser Lys
 85 90 95
 Tyr Glu Leu Leu Met Lys Gln Lys Ser Thr Val Ser Gly Ser Glu Val
 100 105 110
 Tyr Val Asn Arg Lys Gly Ser Lys Val Lys Glu Leu Ile Met Val Met
 115 120 125
 Asn Gly Ala Ser Ser Leu Lys Phe Val Tyr Met Glu Gly Asp Met Thr
 130 135 140
 Thr Asp Asp Ile Lys Lys Leu Met Leu Tyr Gln Ser Thr Ser Gln Asn
 145 150 155 160
 Phe Ile Ile Ser Gly Asp Leu Phe Tyr Ala Asn Asn Lys Pro Val Thr
 165 170 175
 Tyr Phe Lys Lys Gly Asn Ser Asp Asn Gln Lys Asp Met Ala Glu Leu
 180 185 190
 Ser Gly Thr Tyr Asn Leu Asn Ser Ile Asp Thr Asn Tyr Lys Glu Glu
 195 200 205
 Leu Ser Thr Leu Asn Asp Lys Leu Lys Arg Ile Asp Gln Gly Leu Lys
 210 215 220
 Asn Met Asn Ile Lys
 225

<210> 8363
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 8363

Lys Asp Met Lys Tyr Leu Ile Val Gly Leu Gly Asn Ile Gly Pro Glu
 1 5 10 15
 Tyr His Glu Thr Arg His Asn Ile Gly Phe Met Val Leu Asp Ala Leu
 20 25 30
 Ala Arg Ala Asn Asn Leu Ser Phe Thr Asp Gly Arg Tyr Gly Phe Thr


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      35              40              45
Thr Thr Leu Ser Val Lys Gly Arg Gln Met Ile Leu Leu Lys Pro Ser
  50              55              60
Thr Phe Met Asn Leu Ser Gly Asn Ala Val Arg Tyr Trp Met Gln Lys
  65              70              75              80
Glu Asn Ile Pro Leu Glu Asn Val Leu Ile Ile Val Asp Asp Leu Ala
      85              90              95
Leu Pro Phe Gly Thr Leu Arg Leu Lys Ser Lys Gly Ser Asp Ala Gly
      100              105              110
His Asn Gly Leu Lys His Ile Ala Thr Ile Leu Gly Thr Gln Asn Tyr
      115              120              125
Ala Arg Leu Arg Phe Gly Ile Gly Asn Asp Phe Pro Arg Gly Gly Gln
      130              135              140
Ile Asp Phe Val Leu Gly His Phe Thr Asp Glu Asp Trp Lys Thr Met
  145              150              155              160
Asp Glu Arg Leu Glu Thr Ala Gly Glu Ile Ala Lys Ser Phe Cys Leu
      165              170              175
Ala Gly Ile Asp Ile Thr Met Asn Gln Phe Asn Lys Lys
      180              185

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<210> 8364

<211> 361

<212> PRT

<213> B.fragilis

<400> 8364

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Arg Pro Lys Asn Thr Leu His Lys Phe Tyr Lys Ser Ile Ile Met Ala
  1              5              10              15
Lys Lys Glu Asp Glu Leu Asn Phe Glu Thr Asp Asn Asn Lys Met Ala
      20              25              30
Ser Ser Glu Lys Leu Lys Ala Leu Gln Ala Ala Met Asp Lys Ile Glu
      35              40              45
Lys Ser Phe Gly Lys Gly Ser Ile Met Lys Met Gly Glu Glu Val Val
  50              55              60
Glu Gln Val Glu Val Ile Pro Thr Gly Ser Ile Ala Leu Asn Ala Ala
  65              70              75              80
Leu Gly Val Gly Gly Tyr Pro Arg Gly Arg Ile Ile Glu Ile Tyr Gly
      85              90              95
Pro Glu Ser Ser Gly Lys Thr Thr Leu Ala Ile His Ala Ile Ala Glu
      100              105              110
Ala Gln Lys Ala Gly Gly Ile Ala Ala Phe Ile Asp Ala Glu His Ala
      115              120              125
Phe Asp Arg Phe Tyr Ala Ala Lys Leu Gly Val Asp Val Asp Asn Leu
      130              135              140
Phe Ile Ser Gln Pro Asp Asn Gly Glu Gln Ala Leu Glu Ile Ala Glu
  145              150              155              160
Gln Leu Ile Arg Ser Ser Ala Ile Asp Ile Ile Val Val Asp Ser Val
      165              170              175
Ala Ala Leu Thr Pro Lys Ala Glu Ile Glu Gly Asp Met Gly Asp Asn
      180              185              190
Lys Val Gly Leu Gln Ala Arg Leu Met Ser Gln Ala Leu Arg Lys Leu
      195              200              205
Thr Ser Ala Val Ser Lys Thr Arg Thr Thr Cys Ile Phe Ile Asn Gln
      210              215              220
Leu Arg Glu Lys Ile Gly Val Met Phe Gly Asn Pro Glu Thr Thr Thr
  225              230              235              240
Gly Gly Asn Ala Leu Lys Phe Tyr Ala Ser Val Arg Leu Asp Ile Arg
      245              250              255
Gly Ser Gln Gln Ile Lys Asp Gly Glu Glu Val Ile Gly Lys Gln Thr

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260 265 270
 Lys Val Lys Val Val Lys Asn Lys Val Ala Pro Pro Phe Arg Lys Ala
 275 280 285
 Glu Phe Asp Ile Met Phe Gly Glu Gly Ile Ser His Ser Gly Glu Ile
 290 295 300
 Ile Asp Leu Gly Ala Asp Leu Gly Ile Ile Lys Lys Ser Gly Ser Trp
 305 310 315 320
 Tyr Ser Tyr Asn Asp Thr Lys Leu Gly Gln Gly Arg Asp Ala Ala Lys
 325 330 335
 Gln Cys Ile Ala Asp Asn Pro Glu Leu Ala Glu Glu Leu Glu Gly Leu
 340 345 350
 Ile Phe Glu Lys Leu Arg Glu His Lys
 355 360

<210> 8365
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 8365
 Leu Leu Arg Asn Tyr Asp Met Asp Glu Lys Ile Lys Phe Pro Ser Asn
 1 5 10 15
 Val Val Leu Ile Asp Ala Ala Phe Leu Asn Leu Val Val Thr Asp Leu
 20 25 30
 Lys Lys Tyr Phe Glu Lys Thr Leu Met Arg Glu Leu Gln Glu Ile Asp
 35 40 45
 Leu Ser Glu Leu Val Thr Tyr Ile Val Leu Asp Ala Gly Met Ala Val
 50 55 60
 Gly Asp Asn Gln Ile Gln Ile Leu Met Val Tyr Asp Lys Asp Ser Ala
 65 70 75 80
 Gln Leu Ser Asn Cys Arg Pro Ser Asp Leu Ser Ala Glu Leu Asn Gly
 85 90 95
 Val Ala Phe Lys Ser Gln Phe Gly Glu Phe Ser Phe Ala Ser Val Pro
 100 105 110
 Cys Glu Glu Met Val Ser Arg Glu Glu Leu Tyr Leu Asp Leu Leu Ser
 115 120 125
 Ile Val Leu Asp Ser Ala Asp Val Glu Arg Leu Ile Leu Val Ser Phe
 130 135 140
 Asn Glu Glu Tyr Gly Asp Lys Val Met Glu Arg Leu Lys Gly Val Lys
 145 150 155 160
 Asn Lys Glu Thr Ile Gln Phe Arg Met Asn Glu Pro Glu Glu Ser Ile
 165 170 175
 Glu Gly Tyr Gln Trp Glu Met Leu Ala Tyr Pro Val Met Gln Ala Leu
 180 185 190
 Gly Ile Arg Gly Glu Glu Leu
 195

<210> 8366
 <211> 234
 <212> PRT
 <213> B.fragilis

<400> 8366
 Tyr Ile Met Asp Ala Leu Lys Met Leu Ile Val Val Thr Gly Thr Asp
 1 5 10 15
 Met Tyr Ala Asp Gly Asn Leu Gln Thr Gly Leu Trp Leu Ser Glu Leu
 20 25 30
 Thr His Ile Tyr His Cys Ala Glu Glu Ala Gly Tyr Glu Ile Thr Val
 35 40 45

Ala Ser Pro Lys Gly Gly Asn Val Pro Val Asp Pro Glu Ser Leu Lys
50 55 60
Pro Met Met Leu Asp Lys Leu Ser Lys Asp Tyr Trp Asp Asp Leu Glu
65 70 75 80
Phe Arg Arg Glu Leu Gln His Ala Lys Ser Leu Ala Glu Val Ser Gly
85 90 95
Gln Leu Phe Asp Cys Val Tyr Leu Ala Gly Gly His Gly Ala Met Tyr
100 105 110
Asp Phe Pro Asp Asp Thr Val Leu Gln Ala Ile Ile Glu Lys His Tyr
115 120 125
Glu Ser Asp Lys Ala Val Ala Ala Ile Cys His Gly Val Ser Gly Leu
130 135 140
Leu Asn Val Lys Leu Ser Gly Gly Glu Tyr Leu Ile Lys Asp Lys Lys
145 150 155 160
Ile Thr Gly Phe Ser Trp Phe Glu Glu Ser Leu Ala Gly Arg Lys Lys
165 170 175
Glu Val Pro Phe Asp Leu Glu Ala Ala Leu Glu Lys Arg Gly Ala Asp
180 185 190
Tyr Glu Lys Ala Leu Ile Pro Met Thr Ser Lys Val Val Val Asp Cys
195 200 205
Asn Leu Ile Thr Gly Gln Asn Pro Phe Ser Ser Lys Glu Met Ala Glu
210 215 220
Val Val Met Arg Gln Leu Ser Arg Glu Lys
225 230

<210> 8367

<211> 287

<212> PRT

<213> B.fragilis

<400> 8367

Phe Gly Lys Cys Ile Asn Phe Met Leu Phe Phe Tyr Ile Phe Ala Pro
1 5 10 15
Ile Phe Asn Leu Asn Ser Met Thr Met Lys Lys Val Leu Leu Ser Ile
20 25 30
Cys Met Val Ser Ala Val Phe Ala Met Ser Ser Cys Gly Ser Thr Lys
35 40 45
Glu Ala Ala Ser Leu Ser Ser Leu Asn Gly Glu Trp Asn Ile Ile Glu
50 55 60
Val Asn Gly Ser Ala Ile Val Pro Ala Glu Asn Gln Glu Leu Pro Phe
65 70 75 80
Ile Gly Phe Asp Thr Ala Thr Gly Lys Val Tyr Gly Asn Ser Gly Cys
85 90 95
Asn Arg Met Met Gly Ser Ile Asp Leu Asn Ser Lys Pro Gly Thr Ile
100 105 110
Asp Met Ser Arg Leu Gly Ser Thr Arg Met Ala Cys Pro Asp Met Thr
115 120 125
Thr Glu Gln Asn Val Leu Asn Ala Leu Gly Gln Val Lys Ser Tyr Lys
130 135 140
Lys Leu Gly Lys His Asn Met Ala Leu Cys Asn Ala Ser Asn Arg Pro
145 150 155 160
Val Val Val Leu Gln Lys Lys Ala Ser Asp Val Lys Leu Ser Ala Leu
165 170 175
Asn Gly Glu Trp Lys Ile Glu Glu Val Asn Gly Glu Ala Ile Pro Ser
180 185 190
Gly Met Glu Lys Gln Pro Phe Ile Asn Phe Asp Val Lys Lys Lys Ser
195 200 205
Ile His Gly Asn Ala Gly Cys Asn Leu Ile Asn Gly Gly Phe Glu Thr
210 215 220

Asp Lys Glu Asn Pro Arg Ser Ile Ser Phe Pro Asn Val Ile Ser Thr
 225 230 235 240
 Met Met Ala Cys Pro Asp Met Glu Val Glu Gly Lys Val Met Lys Ala
 245 250 255
 Ile Asn Glu Val Lys Ser Phe Asp Val Leu Ser Gly Gly Gly Ile Gly
 260 265 270
 Phe Tyr Ser Ala Asp Gly Thr Leu Val Met Val Leu Val Lys Lys
 275 280 285

<210> 8368
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 8368
 Thr Ser Val Cys Tyr Cys His Gly Gln Glu Lys Arg Tyr Val Lys Asn
 1 5 10 15
 Leu Ile Asn Gly Ile Ile Met Lys Val Glu Glu Ile Glu Arg Leu Leu
 20 25 30
 Ala Glu Phe Tyr Glu Gly Thr Thr Thr Glu Ser Gln Glu Glu Val Leu
 35 40 45
 Arg Asn Tyr Phe Arg Thr Thr Glu Val Pro Gly His Leu Leu Lys Asp
 50 55 60
 Lys Glu Ile Phe Leu Asn Leu Cys Pro Asp Ala Asp Gln Asp Ile Glu
 65 70 75 80
 Val Pro Ala His Leu Glu Asp Lys Leu Asn Leu Leu Ile Asp Glu Met
 85 90 95
 Ala Glu Lys Glu Gln His Phe Phe Arg Pro Asn Asn Ser Lys Asn Ser
 100 105 110
 Trp Arg Trp Ile Gly Gly Val Ala Ala Thr Ile Leu Leu Leu Ile Gly
 115 120 125
 Ile Gly Tyr Gly Ile Asp Asn Leu Ser Lys Asn Val Cys Pro Pro Thr
 130 135 140
 Pro Gln Asp Thr Phe Ser Asp Pro Glu Glu Ala Tyr Arg Met Leu Gln
 145 150 155 160
 Ala Thr Leu Leu Glu Ile Ser Ala Asn Leu Asn Tyr Gly Leu Asn Glu
 165 170 175
 Val Lys Glu Ser Gln Ile Asp Met Arg Lys Ile His Gln Glu Val Arg
 180 185 190
 Asn Glu Ile Lys
 195

<210> 8369
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 8369
 Lys Lys Tyr Arg Met Lys Ile Lys Arg Leu Leu Val Leu Ala Val Leu
 1 5 10 15
 Pro Met Leu Cys Leu Ala Val Asn Ala Gln Asn Ser Ser Lys Asp Asn
 20 25 30
 Thr Pro Lys Lys Gly Asp Phe Thr Val Ala Ala Thr Val Gly Tyr Asn
 35 40 45
 Ser Tyr Thr Ser Val Thr Ala Pro Ser Gly Leu Leu Thr Asp Tyr Glu
 50 55 60
 Val Arg Ala Leu Ser Thr Asn Trp Ala Asp Lys Lys Leu Met Val Gly
 65 70 75 80
 Phe Glu Gly Gly Trp Phe Phe Lys Asp Gln Trp Lys Leu Asn Leu Gly

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<210> 8370
<211> 71
<212> PRT
<213> B.fragilis
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<210> 8371
<211> 340
<212> PRT
<213> B.fragilis
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<400> 8371															
Ile	Lys	Pro	Met	Phe	Glu	Arg	Arg	Asn	Ile	Lys	Tyr	Ile	Tyr	Leu	Lys
1				5				10						15	
Leu	Ser	Arg	Lys	Ile	Lys	Asp	Phe	Leu	Leu	Ser	Asp	Lys	Ser	Arg	Glu
			20					25					30		
Phe	Leu	Ile	Phe	Leu	Phe	Phe	Phe	Phe	Ile	Ala	Gly	Gly	Phe	Trp	Leu
			35				40					45			
Leu	Gln	Thr	Leu	Asn	Asn	Asp	Tyr	Glu	Ala	Glu	Phe	Ser	Ile	Pro	Val
			50			55					60				
Arg	Leu	Lys	Gly	Val	Pro	Asn	His	Val	Val	Leu	Thr	Ser	Glu	Pro	Pro
65					70					75					80
Ser	Glu	Leu	Arg	Ile	Lys	Val	Lys	Asp	Lys	Gly	Thr	Val	Leu	Leu	Asn
				85					90					95	

Tyr Met Leu Gly Lys Ser Phe Phe Pro Val Asn Ile Asp Phe Ser Glu
 100 105 110
 Ser Lys Val Pro Asp Asn His Val Lys Ile Tyr Thr Ser Glu Leu Glu
 115 120 125
 Lys Lys Ile Ala Gly Gln Leu Asn Val Ser Thr Arg Leu Leu Ser Val
 130 135 140
 Lys Pro Asp Thr Leu Glu Tyr Ile Tyr Ser Thr Gly Lys Ser Lys Leu
 145 150 155 160
 Val Pro Val Lys Leu Glu Gly Lys Val Val Ala Gly Arg Gln Tyr Tyr
 165 170 175
 Ile Ser Asp Thr Ile Tyr Ser Pro Asp Ser Val Leu Val Tyr Ala Pro
 180 185 190
 Val Ala Ile Leu Asp Thr Ile Thr Ala Ala Tyr Thr Gln Lys Val Asn
 195 200 205
 Phe Glu Asn Val Met Asp Thr Leu Lys Gln Arg Ile Ala Leu Ala Gly
 210 215 220
 Val Lys Gly Ala Lys Phe Val Pro Gly Ala Ile Asp Leu Thr Leu Pro
 225 230 235 240
 Val Asp Ile Tyr Thr Glu Lys Thr Val Glu Val Leu Leu Arg Gly Ile
 245 250 255
 Asn Phe Pro Ala Asp Lys Val Leu Arg Ala Phe Pro Ser Lys Val Gln
 260 265 270
 Val Thr Phe Gln Val Gly Leu Ser Arg Phe Arg Glu Val Asn Ala Ser
 275 280 285
 Asp Phe Val Val Asn Val Ser Tyr Glu Glu Leu Leu Lys Leu Gly Thr
 290 295 300
 Asp Lys Tyr Thr Val Lys Leu Lys Ser Leu Pro Arg Gly Val Ser His
 305 310 315 320
 Val Arg Ile His Pro Glu Gln Val Asp Phe Leu Ile Glu Gln Leu Ser
 325 330 335
 Ser Asp Gly Asn
 340

<210> 8372
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 8372
 Lys Tyr Ile Phe Phe Ala Lys Asp Leu His Leu Thr Tyr Ser Phe Phe
 1 5 10 15
 Ala Phe Phe Val Thr Lys Phe Leu Leu Leu Arg Leu Lys Asp Ile Asn
 20 25 30
 Ile Asp Lys Asn Glu His Met Asp Thr Glu Ser Phe Lys Arg Glu Phe
 35 40 45
 Leu Pro Tyr His Arg Lys Leu Tyr Cys Val Ala Tyr Arg Leu Leu Glu
 50 55 60
 Asn Ala Ala Asp Ala Glu Asp Leu Val Gln Glu Ala Tyr Leu Lys Leu
 65 70 75 80
 Trp Asp Lys Arg Glu Gly Leu Ser Val Ile Ser Asn Pro Glu Ala Phe
 85 90 95
 Ser Val Thr Leu Val Lys Pro Lys Ile Arg Asn Tyr His Pro Ile His
 100 105 110
 Asp

<210> 8373
 <211> 198
 <212> PRT

<213> B.fragilis

<400> 8373

Gln Asn Ile Ile Met Lys Arg Arg Leu Arg Thr Leu Leu Leu Leu Leu
 1 5 10 15
 Leu Ile Ala Thr Arg Thr Leu Leu Ala Gln Asn Ser His Phe Ala Ser
 20 25 30
 Ser Ser Ser Pro Gly Ser Leu Ser Pro Asp Glu Glu Thr Asp Phe Ile
 35 40 45
 Thr Thr His Phe Pro Leu Lys Gln Leu Cys Lys Trp Thr Pro Gly Met
 50 55 60
 Lys Phe Met Phe Ile Pro Asp Ser Ser Asp Glu Phe Val Pro Ile Leu
 65 70 75 80
 Cys Lys Tyr Glu Asp Gly Lys Glu Val Asp Asn Asp Leu Leu Lys Ser
 85 90 95
 Lys Thr Leu Glu Tyr Thr Gly Ser Glu Glu Thr Val His Glu Thr Tyr
 100 105 110
 Ile Gly Lys Ile Tyr Thr Ser Arg Phe Ile Phe Gln Cys Glu Asp His
 115 120 125
 Lys Tyr Tyr Tyr Glu Met Lys Asp Val Lys Leu Asn Asp Leu Cys Asp
 130 135 140
 Gln Asn Pro Tyr Ala Ser Ile Pro Ala Leu Val Tyr Leu Gln Asp Val
 145 150 155 160
 Asn Lys Ala Lys Glu Leu Leu Ile Gly Lys Thr Leu Tyr Thr Arg Thr
 165 170 175
 Thr Ile Ala Lys Thr Asp Asp Ala Asn Ser Tyr Ser Gly Tyr Arg Glu
 180 185 190
 Val Asn Ile Ala Lys Gly
 195

<210> 8374

<211> 280

<212> PRT

<213> B.fragilis

<400> 8374

Lys Met Thr Ile Asp Asn Gln Thr Gly Leu Val Leu Glu Gly Gly Gly
 1 5 10 15
 Met Arg Gly Val Phe Thr Cys Gly Val Leu Asp Tyr Leu Met Asp His
 20 25 30
 Asp Ile Arg Phe Pro Tyr Thr Ile Gly Val Ser Ala Gly Ala Cys Asn
 35 40 45
 Gly Leu Ser Tyr Met Ser Arg Gln Arg Gly Arg Ala Lys Tyr Ser Asn
 50 55 60
 Ile Asp Leu Leu Glu Lys Tyr His Tyr Ile Gly Leu Lys His Leu Leu
 65 70 75 80
 Lys Lys Arg Asn Ile Leu Asp Phe Asp Leu Leu Phe Thr Glu Phe Pro
 85 90 95
 Glu His Ile Leu Pro Tyr Asp Tyr Gln Ala Tyr Phe Asp Ser Pro Glu
 100 105 110
 Arg Tyr Val Met Val Thr Thr Asn Cys Leu Thr Gly Glu Ala Asp Tyr
 115 120 125
 Phe Glu Glu Lys Lys Asp Lys Asn Arg Val Ile Asp Ile Val Arg Ala
 130 135 140
 Ser Ser Ser Leu Pro Phe Val Cys Pro Ile Ala Tyr Val Asp Gly Ile
 145 150 155 160
 Pro Met Leu Asp Gly Gly Ile Val Asp Ser Ile Pro Leu Gln Arg Ala
 165 170 175
 Ile His Asp Gly Tyr Arg Asn Asn Val Val Val Leu Thr Arg Asn His

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<210> 8375
<211> 221
<212> PRT
<213> B.fragilis
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<210> 8376
<211> 114
<212> PRT
<213> B.fragilis
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<400> 8376
Cys Cys Gly Ile Lys Val Lys Asn Met Cys Phe Asp Leu Leu Arg Ser
1          5          10          15
Gly Lys Tyr Val Leu Ser Arg Gln Ser Val Glu Leu Ser Ala Ala Gln
          20          25          30

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Asp	Val	Phe	Gln	Pro	Asp	Asn	Leu	Glu	Ala	Arg	Glu	Gly	Val	Arg	Gln
	35						40					45			
Ile	Lys	Asp	Ile	Ile	Ala	His	Leu	Pro	Glu	Gln	Gln	Gln	Arg	Ile	Ile
	50					55				60					
Asn	Met	Arg	Asp	Ile	Lys	Gly	Cys	Ser	Tyr	Glu	Glu	Ile	Glu	Gln	Val
65					70					75					80
Thr	Gly	Leu	Asn	Ser	Ile	Asn	Val	Arg	Val	Leu	Leu	Ser	Arg	Ala	Arg
			85						90					95	
Lys	Lys	Ile	Arg	Glu	Glu	Phe	Asn	Lys	Trp	Asn	Asn	Tyr	Glu	Ser	Arg
			100					105					110		
Arg	Asn														

<210> 8377

<211> 542

<212> PRT

<213> B.fragilis

<400> 8377

Lys	Ile	Glu	Ile	Met	Lys	Lys	Lys	Leu	Met	Met	Val	Ala	Val	Leu	Leu
1				5					10					15	
Gly	Ala	Leu	Ser	Leu	Gly	Ala	Cys	Val	Asp	Asn	Asn	Glu	Ser	Ala	Ser
			20					25					30		
Val	Glu	Ala	Val	Arg	Asn	Ala	Lys	Ala	Lys	Gln	Leu	Glu	Ser	Val	Ala
		35					40					45			
Asn	Met	Asn	Asn	Ala	Asn	Ala	Asp	Ala	Lys	Lys	Ala	Ile	Thr	Ala	Ala
	50					55					60				
Glu	Val	Ala	Ile	Lys	Glu	Ala	Glu	Ala	Ala	Tyr	Gln	Lys	Ala	Gln	Ala
65					70					75					80
Glu	Leu	Ala	Gln	Ala	His	Ala	Asp	Gln	Gln	Lys	Ile	Leu	Leu	Glu	Lys
				85				90						95	
Ala	Gln	Ala	Ala	Leu	Glu	Ala	Glu	Leu	Glu	Ala	Ala	Lys	Ile	Asn	Ala
			100					105						110	
Glu	Ala	Glu	Leu	Asn	Asn	Ala	Lys	Ala	Ala	Leu	Glu	Ser	Ala	Lys	Ala
			115				120						125		
Ala	Leu	Ile	Ala	Ala	Leu	Asp	Gln	Val	Asp	Gln	Ala	Asn	Lys	Thr	Arg
	130					135					140				
Ile	Thr	Thr	Leu	Leu	Gly	Lys	Ala	Asn	Gly	Leu	Leu	Ala	Thr	Ile	Asn
145					150					155					160
Ala	Asp	Arg	Gln	Ser	Leu	Ile	Asp	Ala	Lys	Asp	Gln	Leu	Ala	Arg	Leu
				165					170					175	
Lys	Ala	Gly	Leu	Val	Ser	Val	Glu	Leu	Ser	Asn	Gln	Gln	Thr	Ile	Ala
			180					185						190	
Gly	Glu	Glu	Lys	Asn	Lys	Ala	Val	Ala	Gln	Ala	Leu	Ile	Ala	Glu	Tyr
			195				200					205			
Glu	Lys	Tyr	Ser	Thr	Lys	Asp	Lys	Ala	Asp	Ala	Glu	Lys	Ala	Ala	Gln
					215						220				
Glu	Ala	Asn	Ala	Lys	Leu	Thr	Ala	Leu	Gly	Gln	Thr	Arg	Asp	Glu	Lys
225					230						235				240
Asn	Thr	Ala	Asp	Arg	Asn	Ala	Gln	Gln	Ala	Tyr	Trp	Glu	Ala	Tyr	Arg
				245					250					255	
Asn	Leu	Asn	Gly	Ser	Leu	Tyr	Val	Arg	Thr	Leu	Gln	Gln	Ala	Gly	Pro
			260					265					270		
Ser	Tyr	Tyr	Asp	Thr	Glu	Asp	Ile	Arg	Gly	Glu	Val	Val	Asn	Tyr	Thr
			275				280					285			
Asn	Asp	Asp	Ser	Thr	Thr	Gly	Thr	Val	Tyr	Pro	Ser	Ser	Tyr	Thr	Lys
			290			295					300				
Tyr	Ile	Pro	Asn	Leu	Asp	Arg	Ile	Asn	Glu	Ala	Ile	Thr	Asn	Gln	Thr
305					310					315					320

Arg Tyr Leu Ser Val Ser Lys Ala Ala Leu Ala Asp Ala Asn Lys Ala
 325 330 335
 Leu Thr Asp Ala Lys Ala Ser Asp Thr Tyr Lys Ser Leu Ala Lys Ala
 340 345 350
 Val Thr Asp Ala Gln Lys Lys Phe Asp Asp Ala Lys Thr Glu Ala Asp
 355 360 365
 Lys Asn Thr Ala Leu Ser Glu Leu Gly Ile Ala Glu Gly Asn Leu Ser
 370 375 380
 Ala Tyr Ile Gln Pro Leu Glu Asp Ala Val Asp Ser Ala Thr Ala Arg
 385 390 395 400
 Val Glu Lys Gly Glu Asn Ser Leu Lys Glu Tyr Asn Asp Ala Leu Ala
 405 410 415
 Ala Val Ser Gly Asp Asn Ala Thr Ala Tyr Ala Asn Leu Leu Thr Ala
 420 425 430
 Met Asp Asn Ala Val Lys Ala Arg Val Glu Thr Leu Ile Ala Tyr Tyr
 435 440 445
 Lys Ala Asp His Asn Tyr Ser Val Gln Asn Thr Leu Ala Tyr Thr Leu
 450 455 460
 Gln Thr Ile Ala Asp Gly Leu Ala Asp Tyr Asp Gln Leu Ile Leu Val
 465 470 475 480
 Gln Lys Gln Ala Ile Ala Ala Ala Asp Glu Asn Ile Ala Asn Ala Ala
 485 490 495
 Ser Val Val Ser Lys Glu Gln Ala Ile Ala Asn Gln Glu Lys Thr Ile
 500 505 510
 Ala Asp Leu Glu Asn Ser Leu Ala Val Asn Glu Pro Ile Tyr Asn Asp
 515 520 525
 Tyr Leu Ala Gln Ile Lys Ala Leu Val Gly Asp Ser Ala Glu
 530 535 540

<210> 8378
 <211> 302
 <212> PRT
 <213> B.fragilis

<400> 8378
 Ala Phe Ile Phe Met Ser Asp Phe Arg Leu Lys Val Phe Leu Ser Val
 1 5 10 15
 Ala Lys Asn Leu Ser Phe Thr Lys Ala Ser Gln Glu Leu Phe Val Ser
 20 25 30
 Gln Pro Ala Ile Thr Lys His Ile Gln Glu Leu Glu Thr Cys Tyr Gln
 35 40 45
 Val Arg Leu Phe Asp Arg Gln Gly Asn Lys Ile Ser Leu Thr Glu Ala
 50 55 60
 Gly Lys Leu Leu Gln Glu His Ser Glu Lys Ile Leu Glu Asp Tyr Lys
 65 70 75 80
 Arg Leu Glu Tyr Glu Met His Leu Leu His Asn Glu Tyr Ile Gly Asp
 85 90 95
 Leu Lys Leu Gly Ala Ser Thr Thr Ile Ser Gln Tyr Val Leu Pro Pro
 100 105 110
 Leu Leu Ala Asn Phe Ile Ala Lys Phe Pro Gln Val Asn Leu Ser Leu
 115 120 125
 Leu Asn Gly Asn Ser Arg Glu Ile Glu Ala Ala Leu Gln Glu His Arg
 130 135 140
 Ile Asp Leu Gly Leu Val Glu Gly Ile Cys Arg Leu Pro Asn Leu Arg
 145 150 155 160
 Tyr Thr Thr Phe Leu Gln Asp Glu Leu Val Ala Val Val His Thr Gly
 165 170 175
 Ser Lys Leu Ser Leu Pro Asp Glu Ile Thr Pro Glu Asp Leu Ser Arg
 180 185 190

Ile	Pro	Leu	Val	Leu	Arg	Glu	Arg	Gly	Ser	Gly	Thr	Leu	Asp	Val	Phe
		195					200					205			
Glu	Arg	Ala	Leu	Ser	Glu	His	Asn	Met	Lys	Leu	Ser	Ser	Leu	Asn	Val
		210				215						220			
Leu	Leu	Tyr	Leu	Gly	Ser	Thr	Glu	Ser	Ile	Lys	Leu	Phe	Leu	Glu	His
225					230					235					240
Thr	Asp	Cys	Ile	Gly	Ile	Val	Ser	Ile	Arg	Ser	Ile	Ser	Arg	Glu	Leu
				245					250					255	
Leu	Ser	Gly	Thr	Phe	Arg	Val	Ile	Glu	Ile	Lys	Gly	Met	Pro	Met	Leu
			260					265					270		
Arg	Glu	Phe	Cys	Phe	Ala	Gln	Pro	Gln	Gly	Gln	Glu	Ser	Gly	Leu	Ser
		275					280						285		
Gln	Val	Leu	Met	Gln	Phe	Ala	Met	His	His	Asn	Lys	Lys	Leu		
		290				295					300				

<210> 8379

<211> 338

<212> PRT

<213> B.fragilis

<400> 8379

Asn	Thr	Ala	Leu	Lys	Asn	Val	Ile	Tyr	Leu	Cys	Lys	Leu	Ile	Lys	Asn
1			5						10				15		
Val	Tyr	Phe	Cys	Asn	Ser	Leu	Ile	Thr	Val	Leu	Ile	Lys	Ile	Met	Ile
		20						25					30		
Asn	Arg	Val	Leu	Ile	Arg	Leu	Lys	Ile	Ile	Gln	Ile	Val	Tyr	Ala	Tyr
		35					40					45			
Tyr	Gln	Asn	Gly	Ser	Lys	Asn	Leu	Asp	Ser	Ala	Glu	Lys	Glu	Leu	Phe
		50				55					60				
Phe	Ser	Leu	Ser	Lys	Ala	Tyr	Asp	Leu	Tyr	Asn	Tyr	Leu	Leu	Met	Leu
65					70					75					80
Met	Ile	Ala	Leu	Thr	Glu	Tyr	Ala	Gln	Lys	Arg	Ile	Asp	Thr	Ala	Lys
				85					90					95	
Ala	Lys	Leu	Ala	Pro	Thr	Lys	Glu	Glu	Leu	Tyr	Pro	Asn	Met	Lys	Phe
		100					105						110		
Val	Glu	Asn	Lys	Phe	Val	Ala	Gln	Leu	Glu	Val	Asn	Lys	Gln	Leu	Ser
		115					120						125		
Glu	Phe	Ile	Ala	Asn	Gln	Lys	Arg	Thr	Trp	Ala	Asn	Asp	Gln	Asp	Phe
		130				135						140			
Ile	Lys	Glu	Leu	Tyr	Glu	Lys	Ile	Ile	Ala	Ser	Asp	Ile	Tyr	Lys	Glu
145					150					155					160
Tyr	Met	Ala	Ser	Ser	Asp	Lys	Ser	Tyr	Glu	Ala	Asp	Arg	Glu	Leu	Trp
			165						170					175	
Arg	Lys	Leu	Tyr	Lys	Thr	Phe	Val	Phe	Asn	Asn	Asp	Ser	Leu	Asp	Gln
		180						185					190		
Val	Leu	Glu	Asp	Gln	Ser	Leu	Tyr	Trp	Asn	Asp	Asp	Lys	Glu	Ile	Val
		195					200						205		
Asp	Thr	Phe	Val	Leu	Lys	Thr	Ile	Lys	Arg	Phe	Glu	Glu	Lys	Gln	Gly
		210				215						220			
Ala	Asn	Gln	Pro	Leu	Leu	Pro	Glu	Phe	Lys	Asp	Asp	Glu	Asp	Gln	Glu
225				230						235					240
Phe	Ala	Arg	Arg	Leu	Phe	Arg	Arg	Ala	Ile	Leu	Asn	Ala	Asp	Tyr	Tyr
				245					250					255	
Arg	His	Leu	Ile	Ser	Glu	Asn	Thr	Lys	Asn	Trp	Asp	Leu	Asp	Arg	Val
		260						265					270		
Ala	Phe	Met	Asp	Val	Ile	Ile	Met	Gln	Cys	Ala	Leu	Ala	Glu	Ile	Leu
		275					280						285		
Ser	Phe	Pro	Asn	Ile	Pro	Val	Ser	Val	Ser	Leu	Asn	Glu	Tyr	Val	Glu
		290				295					300				

Ile Ala Lys Leu Tyr Ser Thr Val Lys Ser Gly Ser Phe Ile Asn Gly
 305 310 315 320
 Thr Leu Asp Gly Ile Val Asn Gln Leu Lys Lys Glu Gly Lys Leu Thr
 325 330 335
 Lys Asn

<210> 8380
 <211> 202
 <212> PRT
 <213> B.fragilis

<400> 8380
 His Lys Lys Phe Gln Glu Met Arg Ser Ile Glu Val Lys Gly Thr Ala
 1 5 10 15
 Arg Thr Ile Ala Glu Arg Ser Ser Glu Gln Ala Arg Ala Leu Lys Glu
 20 25 30
 Ile Arg Asn Asn Gly Gly Val Pro Cys Val Leu Tyr Gly Gly Glu Glu
 35 40 45
 Val Val His Phe Thr Val Thr Asn Glu Gly Leu Arg Asn Leu Val Tyr
 50 55 60
 Thr Pro His Ile Tyr Val Val Asp Leu Val Ile Asp Gly Lys Lys Val
 65 70 75 80
 Asn Ala Ile Leu Lys Asp Ile Gln Phe His Pro Val Lys Asp Thr Ile
 85 90 95
 Leu His Val Asp Phe Tyr Gln Ile Asp Glu Ala Lys Pro Ile Val Met
 100 105 110
 Glu Val Pro Val Gln Leu Glu Gly Leu Ala Glu Gly Val Lys Ala Gly
 115 120 125
 Gly Lys Leu Ala Leu Gln Met Arg Lys Leu Lys Val Lys Ala Leu Tyr
 130 135 140
 Asn Ile Ile Pro Glu Lys Leu Thr Ile Asn Val Ser His Leu Gly Leu
 145 150 155 160
 Gly Lys Thr Val Lys Val Gly Glu Leu Ser Tyr Glu Gly Leu Glu Leu
 165 170 175
 Leu Asn Ala Lys Glu Ala Val Val Cys Ala Val Lys Leu Thr Arg Ala
 180 185 190
 Ala Arg Gly Ala Ala Ala Ala Gly Lys
 195 200

<210> 8381
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 8381
 Gln Glu Glu Phe Cys Tyr Lys Glu Ser Glu Lys Arg Ile Ser Lys Met
 1 5 10 15
 Lys Ile Phe Gly Glu Lys Asp Val Leu Leu Met Thr Glu Leu Lys Ile
 20 25 30
 Asp Thr Met Ser Gln Asn Glu Thr Thr Lys Leu Asp Ile Ile Val Glu
 35 40 45
 Val Leu Gly Glu Arg Glu Pro Glu Ile Arg Arg Leu Val Ile Leu Asp
 50 55 60
 Asp Arg Leu Arg Met Phe Ala Glu Ser Asn Asp Glu Asn Gly Pro Gly
 65 70 75 80
 Ile Pro Ile Glu Leu Val Ala Glu Trp Ala Thr Leu Leu Asn Lys Tyr
 85 90 95
 Tyr Pro Leu Ala Leu Glu Lys Arg Asn Met Met Asn

105

<400> 8382

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<210> 8383
<211> 132
<212> PRT
<213> B.fragilis
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<400> 8383

[illegible]

<210> 8384
 <211> 612
 <212> PRT
 <213> B.fragilis

<220>

<221> UNSURE

<222> (596), (603), (604), (608), (610)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8384

Lys	Ser	Lys	Pro	Cys	Glu	Leu	Val	Trp	Arg	Gln	Ala	Glu	Ile	Asn	Tyr
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Phe	Leu	Thr	Leu	Ser	Gln	Tyr	Lys	Ile	Met	Gln	Asn	Tyr	Phe	Ser	Ile
			20					25					30		
Gln	Leu	Leu	Arg	Val	Val	Lys	Ser	Ser	Leu	Trp	Leu	Thr	Ser	Lys	Lys
		35					40					45			
Ile	Pro	Lys	Thr	Met	Arg	Leu	Phe	Ile	Leu	Phe	Leu	Ile	Cys	Ser	Met
	50					55					60				
Ser	Phe	Val	His	Ala	Thr	Asp	Ser	Phe	Ala	Gln	Lys	Val	Glu	Ile	Ser
65				70						75				80	
Ile	Asp	Ala	Gln	Asn	Gln	Thr	Val	Glu	Lys	Val	Leu	Lys	Glu	Ile	Glu
				85					90					95	
Lys	Gln	Ser	Gly	Phe	Gly	Phe	Phe	Phe	Asn	Asn	Lys	His	Val	Asn	Leu
			100					105					110		
Lys	Arg	Val	Val	Ser	Val	Ser	Val	Asp	Lys	Ser	Asn	Ile	Phe	Lys	Val
		115					120					125			
Leu	Asp	Lys	Ile	Phe	Glu	Gly	Thr	Asp	Val	Lys	Tyr	Ser	Val	Leu	Asp
	130					135					140				
Lys	Lys	Ile	Ile	Leu	Ser	Thr	Glu	Met	Thr	Ser	Lys	Gln	Gln	Gln	Ala
145				150						155					160
Val	Lys	Ile	Ser	Gly	Lys	Val	Val	Asp	Val	Asn	Gly	Glu	Pro	Val	Ile
				165					170					175	
Gly	Ala	Ser	Ile	Val	Glu	Lys	Gly	Thr	Thr	Asn	Gly	Thr	Val	Thr	Asn
			180					185					190		
Leu	Gln	Gly	Asp	Phe	Ser	Leu	Ser	Val	Ser	Ser	Asp	Lys	Ala	Val	Ile
		195					200					205			
Glu	Ile	Ser	Tyr	Ile	Gly	Tyr	Gln	Pro	Gln	Glu	Leu	Lys	Val	Ile	Ala
	210					215					220				
Gly	Lys	Pro	Leu	Asn	Val	Thr	Met	Lys	Glu	Asp	Ala	Gln	Ala	Leu	Glu
225				230						235					240
Glu	Val	Val	Val	Val	Gly	Tyr	Gly	Ser	Gln	Lys	Lys	Val	Asn	Val	Ile
				245					250					255	
Gly	Ser	Ile	Ala	Ala	Val	Asp	Ser	Lys	Lys	Leu	Glu	Ser	Arg	Thr	Ala
			260					265					270		
Pro	Ser	Val	Ser	Asn	Met	Leu	Thr	Gly	Gln	Leu	Ser	Gly	Val	Thr	Ile
		275					280					285			
Thr	Gln	Ser	Ser	Gly	Asn	Pro	Gly	Gln	Asp	Gln	Gly	Thr	Ile	Arg	Val
	290				295						300				
Arg	Gly	Val	Gly	Ser	Phe	Gly	Ala	Thr	Pro	Asp	Pro	Leu	Val	Leu	Val
305				310						315					320
Asp	Gly	Leu	Pro	Gly	Ser	Leu	Asn	Asp	Leu	Asn	Pro	Ala	Asp	Ile	Glu
				325					330					335	
Ser	Ile	Ser	Ile	Leu	Lys	Asp	Ala	Ser	Ser	Ala	Ala	Ile	Tyr	Gly	Ser
			340					345					350		
Arg	Ala	Ala	Asn	Gly	Val	Val	Leu	Val	Lys	Thr	Lys	Gly	Gly	Gln	Lys
		355					360					365			
Gly	Lys	Val	Thr	Val	Ser	Tyr	Asn	Gly	Tyr	Val	Gly	Phe	Asn	Gln	Ala

370 375 380
 Thr Glu Leu Pro Glu Met Cys Asp Ser Trp Glu Tyr Ala Glu Leu Tyr
 385 390 395 400
 Asn Lys Ala Met Gly Lys Glu Val Tyr Ser Ala Glu Glu Ile Gln Lys
 405 410 415
 Tyr Lys Asp Gly Ser Asp Pro Tyr Asn Tyr Pro Asn Glu His Tyr Leu
 420 425 430
 Asp Lys Leu Leu Gly Asn Lys Gly Leu Gln Thr Gly His Glu Leu Thr
 435 440 445
 Val Asn Gly Gly Asn Asp Lys Thr Gln Tyr Met Val Ser Phe Gly Tyr
 450 455 460
 Val Lys Gln Asn Gly Leu Met Glu His Asn His Tyr Asp Arg Tyr Asn
 465 470 475 480
 Gly Arg Val Asn Leu Thr Thr Glu Leu Ala Lys Lys Leu Thr Leu Thr
 485 490 495
 Thr Arg Leu Gly Gly Val Val Ser Lys Arg Ser Glu Pro Ser Thr Pro
 500 505 510
 Gly Gly Met Asp Ser Ala Gly Phe Lys Ala Phe Ser Ser Asn Ala Leu
 515 520 525
 Arg Phe Pro Gly Leu Trp Ala Thr Lys Leu Glu Asp Gly Ser Tyr Gly
 530 535 540
 Leu Gly Pro Lys Val Leu Gly Thr Pro Leu Ala Trp Leu Asp Ser Gly
 545 550 555 560
 Ser Phe Tyr His Glu Asn Phe His Lys Phe Arg Ser Asn Val Glu Leu
 565 570 575
 Ala Phe Thr Pro Val Lys Gly Leu Thr Leu Lys Ala Ser Ser Pro Arg
 580 585 590
 Gly Trp Ser Xaa Arg Ser Ala Leu Ser Phe Xaa Xaa Ser Tyr Pro Xaa
 595 600 605
 Gly Xaa Ser Ile
 610

<210> 8385
 <211> 385
 <212> PRT
 <213> B.fragilis

<400> 8385
 Phe Gly Glu Tyr Arg Gly Tyr Cys Arg Gln Val Phe Ile Ser Leu Leu
 1 5 10 15
 Leu Asn Phe Tyr Leu Arg Tyr Leu Asn Val Ile Leu Met Asn Arg Lys
 20 25 30
 Asn Tyr Leu Leu Ala Phe Ile Leu Cys Val Gln Thr Leu Phe Val Ser
 35 40 45
 Ala Gln Val Tyr Pro Val Arg Ala Lys Leu Thr Asp Glu Lys Ser Phe
 50 55 60
 Ser Met Ile Leu Leu Pro Asp Pro Tyr Ser Tyr Thr Met Val Asp Ala
 65 70 75 80
 His Tyr Ala Leu Phe Glu Leu Gln Thr Ala Trp Val Ala Asn Ser Ile
 85 90 95
 Glu Ser Leu Asn Ile Lys Gly Val Leu Cys Thr Gly Asp Leu Val Glu
 100 105 110
 Gln Asn Glu Ile Arg Ile Pro Asp Gly Val Asn Gly Asn Gln Thr Ser
 115 120 125
 Glu Glu Gln Trp Arg Ala Ala Ser Arg Ala Phe Glu Arg Leu Asp Gly
 130 135 140
 Lys Leu Pro Tyr Val Ile Cys Thr Gly Asn His Asp Tyr Gly Tyr Gln
 145 150 155 160
 Lys Ala Glu Asn Arg Leu Cys His Phe Pro Asp Tyr Phe Pro Ala Glu

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<210> 8386
<211> 338
<212> PRT
<213> B.fragilis
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Ile	Thr	Asn	Met	Asn	Tyr	Glu	Asp	Ile	Asp	His	Leu	Leu	Pro	Arg	Tyr
1				5					10					15	
Cys	Glu	Gly	Leu	Ala	Thr	Glu	Glu	Glu	Cys	Arg	Gln	Val	Glu	Ser	Trp
			20					25					30		
Met	Glu	Glu	Ser	Glu	Asp	Asn	Arg	Lys	Ile	Val	Asp	Gln	Ile	Asn	Thr
		35				40					45				
Leu	Tyr	Ile	Ala	Val	Asp	Thr	Val	Asn	Val	Met	Arg	Lys	Val	Asp	Thr
	50					55				60					
Glu	Lys	Ala	Leu	Lys	Lys	Val	Ser	Ser	Arg	Met	Ile	Val	Arg	Lys	Thr
65					70				75						80
Thr	Trp	Trp	Glu	Trp	Met	Gln	Arg	Val	Ala	Ala	Ile	Leu	Phe	Ile	Pro
			85					90						95	
Leu	Ser	Val	Ala	Phe	Leu	Val	Gln	Tyr	Met	His	Asn	Gly	Lys	Ser	Ala
			100				105						110		
Val	Cys	Gln	Met	Met	Glu	Ile	Lys	Thr	Asn	Pro	Gly	Met	Thr	Thr	Ser
		115					120					125			
Val	Val	Leu	Pro	Asp	Ser	Thr	Val	Tyr	Leu	Asn	Ser	Glu	Ser	Ser	
	130					135			140						
Leu	Arg	Tyr	Pro	Ser	Val	Phe	Glu	Gly	Asp	Ile	Arg	Asn	Val	Glu	Leu
145					150				155						160
Lys	Gly	Glu	Ala	Tyr	Phe	Ala	Val	Ala	Lys	Asp	Leu	Lys	Lys	Lys	Phe
			165					170						175	
Val	Val	Ser	Ala	Pro	His	Ser	Ser	Gln	Ile	Glu	Val	Leu	Gly	Thr	His


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      180              185              190
Phe Asn Val Glu Ala Tyr Glu Asp Glu Pro Asp Val Ser Thr Thr Leu
      195              200              205
Val Glu Gly Gln Val Cys Phe His Phe Ser Asp Lys Asp Tyr Leu Ala
      210              215              220
Lys Lys Val Val Met Lys Pro Gly Gln Arg Leu Val Tyr Ser Ser Thr
225              230              235              240
Asn Gly Asp Val Gln Leu Tyr Ala Thr Ser Cys Leu Ser Glu Thr Ala
      245              250              255
Trp Lys Asp Gly Lys Ile Ile Phe Asn Asn Thr Pro Leu Asp Val Ala
      260              265              270
Leu Arg Met Leu Glu Lys Arg Phe Asn Val Thr Phe Lys Leu Lys Asn
      275              280              285
Ala Arg Leu Lys Thr Asn Ala Phe Thr Gly Thr Phe Thr Glu Gln Arg
      290              295              300
Leu Glu Arg Ile Leu Glu Tyr Phe Lys Ile Ser Ser Lys Ile Gln Trp
305              310              315              320
Arg Tyr Leu Glu Ser Pro Asp Ile Arg Asp Glu Arg Ser Ile Ile Glu
      325              330              335
Val Tyr

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<210> 8387
<211> 96
<212> PRT
<213> B.fragilis

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<400> 8387
Arg Lys Ser Arg Ser Met Gly Lys Ser Gly Ser Ser Ser Asn Arg Ser
1              5              10              15
Val Thr Ile Ser Ser Gln Lys Glu Asp Ile Tyr Gln Gly Arg Asp Phe
      20              25              30
Ala Asp Leu Glu Pro Gly Glu Phe Ile Gly Ser Ala Thr Arg Ala Asn
      35              40              45
Val Arg Tyr Phe Lys Val Met Leu Gly Glu Phe Lys Glu Lys Asp Glu
      50              55              60
Lys Pro Leu Pro Asp Val Arg Val Leu Glu Pro Gly Glu Ile Ser Gly
      65              70              75              80
Asn Phe Ala Arg Ile Leu Glu Glu Val Arg Ser Leu Phe Pro Cys Glu
      85              90              95

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<210> 8388
<211> 101
<212> PRT
<213> B.fragilis

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<400> 8388
Ala Pro Val Ile Gly Met Leu Met Ser Ile Ser Thr Arg Gln Phe Thr
1              5              10              15
Met Gln Asn Lys Val Pro Phe Val Tyr Phe Leu Asp Glu Met Thr Thr
      20              25              30
Val Asn Ile Lys Ser Phe Glu Ser Leu Leu Ser Val Met Arg Glu Asn
      35              40              45
Lys Val Ala Phe Val Leu Leu Thr Gln Ser Gly Ser Lys Leu Glu Asn
      50              55              60
Leu Tyr Gly Lys Leu Asp Arg Ser Ser Val Glu Ala Asn Phe Gly Ile
      65              70              75              80
Gln Phe Phe Gly Arg Thr Lys Asp Val Glu Ala Leu Lys Tyr Tyr Pro
      85              90              95

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Gln Met Phe Gly Lys
100

<210> 8389

<211> 216

<212> PRT

<213> B.fragilis

<400> 8389

Ala Leu Ser Val Pro Ser Ser Pro Val Val Lys Thr Ala Gln Met Lys
1 5 10 15
Lys Phe Thr Arg Glu Cys Met Asp Glu Tyr Ala Arg Asn Phe Tyr Arg
20 25 30
Glu Lys Ile Lys Ser Gly Asp Asp Leu Val Trp Tyr Gly Arg Val Glu
35 40 45
Thr Glu Arg His Tyr Lys Asn Asp Asp Pro Glu Val Lys Ala Gly Arg
50 55 60
Ala Lys Ala Gly Asp Lys Lys Pro Gly Leu Gln Leu His Val His Val
65 70 75 80
Ile Val Ser Arg Met Asp Arg Thr Gln Thr Val Ser Leu Ser Pro Leu
85 90 95
Ser Lys Ser Arg Gly Asn Arg Gln Val Leu Glu Gly Arg Glu Val Val
100 105 110
Val Gly Phe Asp Arg Ser Gln Trp Ser Ser Arg Cys Ala Ser Arg Phe
115 120 125
Asn Gln Ser Tyr Asp Tyr Phe Pro Asn Tyr Tyr Ser Arg Asp Glu Ser
130 135 140
Leu Arg Lys Tyr Ser Glu Asn Trp Gln Ala Lys Asn Glu Leu Lys Asn
145 150 155 160
Glu Ala Val Ser Lys Leu Lys Gln Glu Val Leu Lys Gly Glu Leu Lys
165 170 175
Glu Glu Arg Arg Leu Tyr Ala Asn Thr Phe Arg Ile Tyr Arg Phe Val
180 185 190
Val Asn Pro Lys Lys Ala Ile Ile Gln Glu Leu Lys Arg Leu Gly Thr
195 200 205
Asp Leu Leu Ser Gly Arg Asp Leu
210 215

<210> 8390

<211> 439

<212> PRT

<213> B.fragilis

<400> 8390

Tyr Ile Met Ser Lys Ile Gln Leu Arg Gln Val Tyr Arg Asp Gln Leu
1 5 10 15
Tyr Asn Tyr Arg Pro Thr Trp Ile Leu Arg Trp Gly Ile Thr Ile Phe
20 25 30
Phe Val Phe Leu Leu Leu Val Ile Ser Val Ser Gly Phe Ile Arg Tyr
35 40 45
Pro Asp Ile Val Pro Ala Thr Val Glu Ile Thr Thr Ile Asn Pro Pro
50 55 60
Ala Asn Leu Ile Ser Lys Val Asn Gly Lys Ile Glu Ile Ile Phe Thr
65 70 75 80
Glu Glu Gly Glu Ser Ile Thr Lys Gly Gln Val Leu Ala Ile Leu Glu
85 90 95
Ser Pro Ala Gln Trp Lys Asp Met Lys Ile Leu Asp His Tyr Ile Thr
100 105 110
Val Leu Glu Asn Thr Ile Gly Lys Asp Ser Leu Ser Val Ile Pro Glu

115	120	125
Pro Asp Phe Leu Arg Asn Asp	Leu Glu Leu Gly Glu Val	Gln Gly Arg
130	135	140
Tyr Ala Asp Leu Lys Leu Asn	Tyr Thr Glu Leu Tyr Asn	Phe Leu His
145	150	155
Ser Gly Leu Phe Glu Glu Val	Leu Ser Leu Gln Glu Lys	Lys Gln
165	170	175
Ala Gln Lys Gln Leu Leu Val	Gln Glu Asn Arg Lys Arg	Glu Leu Leu
180	185	190
Lys Thr Gln Ile Arg Leu Ala	Asp Lys Glu Tyr Gln Arg	Asp Ser Ile
195	200	205
Leu Phe Val Lys Glu Val Ile	Ser Glu Ser Glu Ile Glu	Gln Arg His
210	215	220
Gln Asn Arg Leu Gln Phe Gln	Ser Ser Leu Val Asp Met	Glu Val Asn
225	230	235
Ile Leu Asn Ile Lys Ser Ser	Leu Lys Gln Leu Arg Ser	Asp Leu Lys
245	250	255
Lys Ile Glu Leu Lys His Asn	Thr Asp Arg Gln Glu Leu	Thr Asn Lys
260	265	270
Leu Leu Gln Ser Thr His Leu	Leu Lys Ala Gln Thr Glu	Thr Trp Lys
275	280	285
Gln Asn Tyr Leu Ile Thr Thr	Pro Ile Asp Gly Lys Val	Ser Phe Thr
290	295	300
Thr Tyr Trp Ser Lys Asn Gln	Asn Val Lys Ser Gly Glu	Leu Ile Phe
305	310	315
Ser Val Val Pro Ile Asp Ser	Met Thr Thr Lys Ala Arg	Leu Gln Phe
325	330	335
Pro Ile Gln Asn Ser Gly Lys	Ile Lys Glu Gly Gln Gln	Val Asn Ile
340	345	350
Lys Leu Gln Asn Tyr Pro Tyr	Gln Glu Phe Gly Met Leu	Val Gly His
355	360	365
Leu Ser Lys Ile Ser Glu Val	Pro Asn Glu Leu Leu Tyr	Ser Ala Asp
370	375	380
Val Val Leu Asp Lys Gly Leu	Ile Thr Ser Tyr Gly Lys	Arg Leu Pro
385	390	395
Lys Val Gln Gln Leu Lys Gly	Asp Ala Glu Ile Leu Thr	Asp Asp Leu
405	410	415
Ser Leu Leu Met Arg Phe Phe	Asn Pro Leu Arg Ala Ile	Phe Asp His
420	425	430
Arg Leu Arg Lys His Asn Gln		
435		

<210> 8391
 <211> 441
 <212> PRT
 <213> B.fragilis

<400> 8391

Leu Cys Met Ser Met Asn Lys Gln Met His Ile Ser Asn Gly Asn Lys	
1	15
Arg Ile Leu Gln Ile Ala Val Pro Ser Ile Ile Ser Asn Ile Thr Val	
20	30
Pro Leu Leu Gly Leu Val Asp Val Thr Ile Val Gly His Leu Gly Ser	
35	45
Ala Ala Tyr Ile Gly Ala Ile Ala Val Gly Gly Met Leu Phe Asn Ile	
50	60
Ile Tyr Trp Ile Phe Gly Phe Leu Arg Met Gly Thr Ser Gly Met Thr	
65	80
Ser Gln Ala Phe Gly Gln Arg Asn Leu Glu Glu Val Thr Lys Leu Leu	

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<210> 8392
<211> 115
<212> PRT
<213> B.fragilis
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<400> 8392

Lys	Tyr	Leu	Phe	Met	Gly	Leu	Glu	Asp	Asp	Phe	Leu	Leu	Asn	Asp	Ala
1				5					10					15	
Asp	Asp	Glu	Lys	Thr	Ile	Glu	Phe	Ile	Arg	Asn	Tyr	Leu	Pro	Gln	Glu
			20					25					30		
Leu	Lys	Glu	Lys	Phe	Ser	Glu	Asp	Glu	Leu	Tyr	Tyr	Phe	Leu	Asp	Leu
		35				40						45			
Ile	Asp	Glu	Tyr	Tyr	Ser	Glu	Ser	Gly	Ile	Leu	Asp	Val	Gln	Pro	Asp

50 55 60
 Ala Asp Gly Tyr Val Asp Ile Asp Leu Glu Gln Val Val Glu Phe Ile
 65 70 75 80
 Val Lys Glu Ala Lys Lys Asp Glu Val Gly Glu Tyr Asp Pro Glu Asp
 85 90 95
 Ile Leu Phe Val Val Gln Gly Glu Met Glu Tyr Gly Asn Phe Leu Gly
 100 105 110
 Gln Val Glu
 115

<210> 8393

<211> 418

<212> PRT

<213> B.fragilis

<400> 8393

Leu Leu Leu Leu Asp Thr Ile Asp Ser Val Leu Ile Ile Ile Ser Leu
 1 5 10 15
 Asp Tyr Tyr Ile Ile His Asn Ile Glu Leu Thr Leu Asn Ile Asn Lys
 20 25 30
 Met Lys Lys Ile Asn Ala Ala Leu Val Ile Ser Leu Phe Val Met Thr
 35 40 45
 Gly Cys Gly Gly Asn Lys Gln Leu Thr Asp Asp Cys Ile Thr Val Asp
 50 55 60
 Val Ser Ala Asp Tyr Pro Lys Lys Glu Leu Ile Leu Gln Asp Phe Met
 65 70 75 80
 Asp Val Glu Tyr Val Pro Leu Glu Thr Thr Asp Asp Phe Ile Thr Gln
 85 90 95
 Gly Ile Val Lys Ala Thr Gly Lys Lys Ile Leu Leu Val Ala Asn Arg
 100 105 110
 Ile Met Asp Gly Asn Ile Phe Val Phe Asp Arg Ala Thr Gly Lys Gly
 115 120 125
 Leu Arg Lys Ile Asn Arg Leu Gly Gln Ser Gly Glu Glu Tyr Ser His
 130 135 140
 Ile Thr Ser Ile Val Leu Asp Glu Asp Asn Asn Glu Met Phe Val Val
 145 150 155 160
 Asp Tyr Pro Ala Arg Lys Ile Leu Val Tyr Asp Leu Tyr Gly Glu Phe
 165 170 175
 Asn Arg Ser Leu Pro Phe Pro Asp Thr Cys Tyr Tyr Glu Phe Leu Ser
 180 185 190
 Asp Tyr Asp Arg Asp His Leu Ile Gly Tyr Lys Ser Tyr Leu Pro Leu
 195 200 205
 Ile Glu Thr Asp Glu Ser Cys His Val Leu Ile Ser Lys Lys Asp Gly
 210 215 220
 Ser Val Thr Arg Lys Ile Gln Ile Pro Phe Lys Glu Leu Glu Thr Pro
 225 230 235 240
 Val Val Thr Lys Asp Glu Ala Ile Val Thr Pro Val Phe Phe Leu Ile
 245 250 255
 Thr Pro His Asp Ser Asn Cys Leu Leu Thr Lys Thr Ser Ser Asp Thr
 260 265 270
 Ile Tyr Asn Tyr Leu Pro Asp Gly Thr Leu Ser Pro Phe Ile Val Arg
 275 280 285
 Thr Pro Ser Ile His Ser Met Asp Pro Lys Val Phe Leu Phe Pro Thr
 290 295 300
 Ile Ile Thr Asp Arg Tyr Tyr Phe Met Gln Thr Leu Asp Lys Lys Phe
 305 310 315 320
 Asn Phe Glu Lys Gly Arg Gly Phe Pro Thr Asn Asp Leu Val Tyr Asp
 325 330 335
 Lys Gln Glu Lys Ala Ile Phe Gln Tyr Thr Val Tyr Asn Asp Asp Phe

340 345 350
 Ser Asn Lys His Arg Val Ala Leu Gly Gln Gln Pro Glu Lys Ser Val
 355 360 365
 Asp Glu Glu Ile Val Thr Cys Arg Ala Leu Asn Ala Ser Asp Leu Val
 370 375 380
 Glu Ala Asn Glu Lys Gly Glu Leu Lys Gly Lys Leu Lys Glu Ile Ala
 385 390 395 400
 Ala Gly Leu Asn Glu Glu Ser Asn Ser Val Ile Met Leu Ile Lys Arg
 405 410 415
 Lys Lys

<210> 8394
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 8394
 Ala Ala Asp Pro Arg Cys Pro Thr Ile Val Thr Ser Thr Ser Pro Asn
 1 5 10 15
 Asn Gly Thr Val Ile Leu Glu Ile Ile Glu Gly Thr Ala Ile Cys Arg
 20 25 30
 Ile Arg Leu Phe Pro Leu Leu Met Cys Ile Cys Leu Phe Ile Asp Met
 35 40 45
 Gln Ser Tyr Met Lys Asn Arg Glu Tyr Glu Asn Asp Val Asn Asn His
 50 55 60
 Val Ile Ile Leu Val Arg Asn Val Leu Asp Thr Gly Ile Asn Ile Ile
 65 70 75 80
 Phe Val Cys Ile Leu Lys Asp Ile Leu Gln Thr Ile Asn Lys His Arg
 85 90 95
 Ser Glu Val Ala Leu Ser Ile
 100

<210> 8395
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 8395
 Arg Asn Leu Pro Lys Asn Tyr Val Pro Asn Met Met Pro Tyr Pro Glu
 1 5 10 15
 Ser Phe Pro Val Pro Leu Ile His Ile Ala Lys Ala Asp Ser Thr Asn
 20 25 30
 Gly Tyr Leu Asn Ala Leu Cys Glu Lys Glu Lys Val Ser Glu Leu Thr
 35 40 45
 Thr Val Val Ala Asp Phe Gln Thr Ala Gly Arg Gly Gln Arg Gly Asn
 50 55 60
 Ser Trp Glu Ser Glu Asp Gly Lys Asn Leu Met Phe Ser Phe Val Leu
 65 70 75 80
 Tyr Pro Thr Phe Leu Glu Ala Arg Lys Gln Phe Leu Leu Ser Gln Ile
 85 90 95
 Ala Ser Leu Ala Val Lys Glu Thr Leu Asp Leu Tyr Ile Gly Asp Val
 100 105 110
 Ser Ile Lys Trp Pro Asn Asp Ile Tyr Trp Lys Asp Lys Lys Ile Cys
 115 120 125
 Gly Met Leu Ile Glu Asn Asp Leu Met Gly Ile His Ile Ser Gln Ser
 130 135 140
 Ile Ala Gly Val Gly Ile Asn Ile Asn Gln Lys Glu Phe His Ser Ser
 145 150 155 160

Ala Pro Asn Pro Ile Ser Ile Ile Gln Ile Thr His Arg Glu Ser Asp
 165 170 175
 Arg Met Glu Ile Leu Ala Gln Val Leu Gln Arg Ile Lys Glu Tyr Tyr
 180 185 190
 Lys Ile Leu Gln Glu Gly Asp Ile Glu Phe Ile Thr Asp Arg Tyr Gln
 195 200 205
 Ala Ala Leu Phe Arg Lys Glu Gly Ile His Phe Tyr Lys Asp Ser Glu
 210 215 220
 Gly Thr Phe Asn Ala Gly Ile Val Gly Val Glu Ala Asp Gly His Leu
 225 230 235 240
 Val Leu Gln Asp Glu Thr Gly Lys Ile Arg Arg Tyr Leu Phe Lys Glu
 245 250 255
 Val Gln Tyr Ile Leu
 260

<210> 8396

<211> 105

<212> PRT

<213> B.fragilis

<400> 8396

Lys Met Ala Leu Glu Ile Thr Asp Asn Asn Phe Lys Glu Ile Leu Ala
 1 5 10 15
 Glu Gly Ser Pro Val Val Ile Asp Phe Trp Ala Pro Trp Cys Gly Pro
 20 25 30
 Cys Lys Met Val Gly Pro Ile Ile Asp Glu Leu Ala Lys Glu Tyr Glu
 35 40 45
 Gly Lys Val Ile Met Gly Lys Cys Asp Val Asp Glu Asn Ser Asp Leu
 50 55 60
 Pro Ala Glu Phe Gly Ile Arg Asn Ile Pro Thr Val Leu Phe Phe Lys
 65 70 75 80
 Asn Gly Glu Leu Val Asp Lys Gln Val Gly Ala Val Gly Lys Pro Ala
 85 90 95
 Phe Val Glu Lys Val Glu Lys Leu Leu
 100 105

<210> 8397

<211> 443

<212> PRT

<213> B.fragilis

<400> 8397

Ser Gly Ser Thr Gln Ile Ile Met Phe Leu Thr Lys Arg Phe Tyr Ile
 1 5 10 15
 Leu Val Leu Val Val Ile Leu Leu Leu Gly Gly Gly Tyr Leu Phe Gly
 20 25 30
 Ser Leu Phe Ile Ile Gly Gln Leu Gly Leu Leu Ala Leu Leu Leu Ala
 35 40 45
 Leu Ala Phe Asp Gly Tyr Leu Leu Tyr Arg Thr Lys Gly Ile Gln Ala
 50 55 60
 Phe Arg Gln Cys Ala Gly Arg Phe Ser Asn Gly Asp Asp Asn Glu Val
 65 70 75 80
 Ser Leu Arg Ile Glu Ser Arg Tyr Ser Tyr Pro Val Arg Leu Ile Val
 85 90 95
 Ile Asp Glu Val Pro Val Ile Phe Gln Gln Arg Asn Val His Phe Glu
 100 105 110
 Leu Ser Leu Leu Pro Asn Glu Gly Lys Thr Leu Thr Tyr Arg Leu Arg
 115 120 125
 Pro Thr Arg Arg Gly Glu Tyr Gly Phe Gly Phe Ile Arg Val Phe Thr

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      130                      135                      140
Thr Thr Arg Ile Gly Leu Ile Ser Arg Arg Ala Thr Cys Gly Arg Pro
145                      150                      155                      160
Glu Thr Val Lys Val Tyr Pro Ser Tyr Leu Met Leu His Arg Tyr Glu
      165                      170                      175
Leu Leu Ala Met Ser Asp Asn Leu Thr Glu Leu Gly Ile Lys Arg Ile
      180                      185                      190
Arg Arg Ala Gly His Gln Thr Glu Phe Glu Gln Ile Lys Glu Tyr Val
      195                      200                      205
Lys Gly Asp Asp Tyr Arg Thr Ile Asn Trp Lys Ala Ser Ala Arg Arg
      210                      215                      220
His Gln Leu Met Val Asn Val Tyr Gln Asp Glu Arg Ser Gln Gln Ile
225                      230                      235                      240
Tyr Ser Val Ile Asp Lys Gly Arg Val Met Gln Gln Ala Phe Arg Gly
      245                      250                      255
Met Thr Leu Leu Asp Tyr Ala Ile Asn Ala Ser Leu Val Leu Ser Tyr
      260                      265                      270
Val Ala Met Arg Lys Asp Asp Lys Ala Gly Leu Val Thr Phe Asn Glu
      275                      280                      285
Tyr Phe Asp Thr Phe Val Pro Ala Ser Lys Gln Val Gly Gln Met Gln
      290                      295                      300
Thr Leu Leu Glu Asn Leu Tyr Lys Gln Glu Thr Thr Phe Gly Glu Thr
305                      310                      315                      320
Asp Phe Ser Ala Leu Cys Gly His Leu Gly Lys His Val Asn Lys Arg
      325                      330                      335
Ser Phe Leu Val Leu Tyr Thr Asn Phe Ser Asn Met Thr Ser Leu Asn
      340                      345                      350
Arg Gln Leu Val Tyr Leu Gln Gln Leu Ala Arg Gln His Arg Val Leu
      355                      360                      365
Val Val Phe Phe Glu Asp Ala Asp Leu Lys Glu Tyr Ile Ala Gly Lys
      370                      375                      380
Ser Val Thr Thr Glu Glu Tyr Tyr Arg His Val Ile Ala Glu Lys Phe
385                      390                      395                      400
Ala Phe Glu Lys Arg Leu Ile Val Ser Thr Leu Lys Gln His Gly Ile
      405                      410                      415
Tyr Ser Leu Leu Thr Thr Pro Asp Lys Leu Ser Ile Asp Val Ile Asn
      420                      425                      430
Lys Tyr Leu Glu Met Lys Ser Arg Gln Leu Leu
      435                      440

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<210> 8398

<211> 288

<212> PRT

<213> B.fragilis

<400> 8398

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Ser Ile Asn Thr His Asn Met Glu Trp Pro Lys Ser Lys Asn Asn Lys
1      5      10      15
Met Glu Glu Leu Leu Glu Arg Met Ser Gln Phe Glu Ala Asn Leu Ala
      20      25      30
Gln Leu Ile Ser Thr Gly Ile Pro Asn His Thr Pro Ser Pro Ala Thr
      35      40      45
Asp Glu Ala Thr Ser Ser Pro Asn Glu Gln Glu Leu Ser Pro Glu
      50      55      60
Gln Glu Glu Glu Met Lys Leu Lys Ile Gln Glu Leu Gln Gln Lys Glu
65      70      75      80
Glu Glu Leu Asn Leu Arg Ala Glu Lys Leu Asp Lys Leu Ala Lys Glu
      85      90      95
Leu Glu Glu Arg Gln Gln Asn Leu Glu Asn Arg Asn Pro Asn Asp Glu

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      100              105              110
Arg Ser Ile Glu Pro Ala Thr His Pro Asp His Ser Phe Pro Ser Gln
      115              120              125
Ile Gly Asp Gln Ile Asn Ala Leu Lys Lys Leu Leu Glu Asp Ser Ser
      130              135              140
Tyr Lys Asp Lys Ile Ile Lys Asp Leu His Glu Glu Leu Gln Ser His
      145              150              155              160
Asn Arg Asp Leu His Ala Glu Ile Val Lys Pro Leu Leu Lys Asn Met
      165              170              175
Ile Lys Met His Glu Arg Leu Thr Lys Thr Tyr Lys Phe Tyr Glu Asn
      180              185              190
Thr Glu Ala Lys Ser Ser Pro Glu Thr Tyr Thr Arg Leu Leu Arg Glu
      195              200              205
Val Glu Asn Cys Lys Leu His Ile Gln Asp Ile Leu Glu Asp Glu Tyr
      210              215              220
Asp Leu Glu Tyr Phe Glu Pro Thr Ile Gly Ser Ala Tyr Ser Pro Lys
      225              230              235              240
Glu Gln Thr Ala Ile Arg Thr Val Ile Thr Asp Thr Pro Glu Gln Ala
      245              250              255
Gly Thr Ile Lys Glu Phe His Tyr Gly Gly Phe Arg Asn Thr Thr Thr
      260              265              270
Asn Lys Ile Phe Gln Pro Ser Thr Val Thr Val Tyr Lys Lys Ser Glu
      275              280              285

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<210> 8399

<211> 240

<212> PRT

<213> B.fragilis

<400> 8399

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Tyr Gln Leu Thr Thr Asp Arg Leu Met Asn Ile Ser Glu Leu Ser Ile
1      5      10      15
Arg Arg Pro Val Leu Ser Thr Val Leu Thr Ile Ile Ile Leu Leu Phe
20      25      30
Gly Leu Ile Gly Tyr Asn Tyr Leu Gly Val Arg Glu Tyr Pro Ser Val
35      40      45
Asp Asn Pro Ile Ile Ser Val Ser Cys Ser Tyr Pro Gly Ala Asn Ala
50      55      60
Asp Val Ile Glu Asn Gln Ile Thr Glu Pro Leu Glu Gln Asn Ile Asn
65      70      75      80
Gly Ile Pro Gly Ile Arg Ser Leu Ser Ser Val Ser Gln Gln Gly Gln
85      90      95
Ser Arg Ile Thr Val Glu Phe Glu Leu Ser Val Asp Leu Glu Thr Ala
100      105      110
Ala Asn Asp Val Arg Asp Lys Val Ser Arg Ala Gln Arg Tyr Leu Pro
115      120      125
Arg Asp Cys Asp Pro Pro Thr Val Ser Lys Ala Asp Ala Asp Ala Thr
130      135      140
Pro Ile Leu Met Val Ala Leu Gln Ser Asp Lys Arg Ser Leu Leu Glu
145      150      155      160
Leu Ser Glu Ile Ala Asp Leu Thr Val Lys Glu Gln Leu Gln Thr Ile
165      170      175
Ser Asp Val Ser Ser Val Ser Ile Trp Gly Glu Lys Arg Tyr Ser Met
180      185      190
Arg Leu Trp Leu Asp Pro Ile Lys Met Ser Gly Tyr Gly Ile Thr Pro
195      200      205
Ile Asp Val Lys Asn Ala Val Asp Lys Glu Asn Val Glu Leu Pro Ser
210      215      220
Gly Ser Ile Glu Gly Asn Pro Pro Glu Leu Ser Ile Arg Thr Trp Asp

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225

230

235

240

<210> 8400

<211> 662

<212> PRT

<213> B.fragilis

<400> 8400

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Pro Thr Glu Thr Asp Met Lys Lys Ser Arg Cys Ile Lys Ser Tyr Ile
1          5          10          15
Trp Val Ala Phe Leu Leu Asn Thr Leu Ile Leu Phe Gly Cys Ile Gln
20          25          30
Pro Asn Asn Ser Arg Tyr Pro Asp Lys Ile His Glu Val Leu Lys Leu
35          40          45
Ser His Asn Asn Arg Lys Glu Ile Glu Lys Ala Leu Asp Phe Phe Ile
50          55          60
Asn Gln Lys Asp Ser Leu Lys Ile Arg Ser Ile Phe Phe Leu Val Gly
65          70          75          80
Asn Met Ala Asp Lys Tyr Ser Leu Thr Pro Ala Asn Glu Gln Asp Pro
85          90          95
Phe His Ser Ile Ile Leu Asn Asn His Ile Lys Glu Lys Glu Ala Trp
100         105         110
Asp Pro Gly Lys Ser Arg Leu Gly Met Ala Leu Asp Ser Val Tyr Lys
115         120         125
Thr Cys Thr Asp Pro Pro Arg Pro Lys Ile Val Arg Asp Ile Glu Val
130         135         140
Ile Thr Gly Asn Phe Leu Ile Asn Asn Val Glu Glu Ala Ile Lys Ile
145         150         155         160
Trp His Arg Thr Lys Lys Phe Thr Glu Cys Ser Phe Asp Asp Phe Cys
165         170         175
Glu Tyr Ile Leu Pro Tyr Arg Ile Gly Asn Glu Ser Leu Ser Ala Trp
180         185         190
Arg Glu Gln Ala Cys Gln Lys Phe Ser Tyr Leu Leu Asp Ser Ile Ser
195         200         205
Asp Pro Leu Glu Leu Thr Lys Ala Ile Val Gln Val Ser Gly Ile Tyr
210         215         220
Tyr Asn Ala Gly Met Ser Lys Tyr Pro Phe Phe Pro Thr Phe Ser Glu
225         230         235         240
Leu Asp Gln Leu His Trp Gly Ser Cys Asp His Leu Ala Ala Tyr Leu
245         250         255
Thr Phe Ser Leu Arg Ala Ile Gly Ile Pro Ser Thr Ile Asp Val Val
260         265         270
Pro Ala Trp Ala Asn Arg Gly Gly Gly His Ala Trp Asn Val Val Met
275         280         285
Asn Lys Asp Gly Lys Phe Val Asp Val Gly Phe Asn Gly Glu Gly His
290         295         300
Asn Ser Ile Ser Tyr Lys Ile Pro Lys Ile Tyr Arg Thr Gly Tyr Ser
305         310         315         320
Ser Asn Lys Gly Gly Ile Gly Tyr Leu Asp Pro Leu Trp Lys Asp Val
325         330         335
Thr Gly Glu Tyr Pro Met Pro Ile Ser Asp Ile Ala Leu Ser Gly Ser
340         345         350
Asp Ser Asp Met Lys Gly Asp Val Leu Leu Cys Ile Phe Asn Asn
355         360         365
Lys Asp Trp Ile Pro Val Ala Val Ser Ala Thr Glu Asn Lys Lys Thr
370         375         380
Met Thr Phe Gly Asn Val Ala Arg Gly Ile Pro Phe Gly Asp Asn Lys
385         390         395         400
Ile Ala Gly Tyr Gln Asn Glu Gly Lys Gly Ile Val Tyr Leu Pro Ala

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405 410 415
 Ser Val Arg Asn Gly Val Met Val Pro Phe Ala Thr Pro Phe Ile Leu
 420 425 430
 Lys Glu Asn Gly Asp Val His Lys Leu Thr Pro Asp His Ser Ala Leu
 435 440 445
 Arg Ser Ile Ser Leu Tyr Arg Lys Tyr Pro Lys Tyr Gly His Ile Ser
 450 455 460
 Val Tyr Ala Ala Arg Met Ala Asp Gly Cys Phe Glu Ile Ser Asn Gln
 465 470 475 480
 Thr Asp Phe Pro Thr Pro Lys Arg Ile Tyr Thr Ile Lys Glu Pro Pro
 485 490 495
 Lys His Ala Met Ala Glu Val Asn Leu His Ala Pro Ala Thr Cys Arg
 500 505 510
 Tyr Ile Arg Tyr Lys Ala Pro Asp Gln Ser Trp Val Asn Ile Ser Glu
 515 520 525
 Leu Gln Cys Tyr Ser Pro Glu Gly Lys Leu Ser Gly Thr Pro Phe Ala
 530 535 540
 Ser Asp Lys Asn Lys Ser Pro Glu Glu Leu Ala Lys Ile Cys Asp Gly
 545 550 555 560
 Asn Ile Asp Thr Phe Tyr Ala Gly Glu Val Arg Asn Ala Tyr Val Gly
 565 570 575
 Ile Asp Phe Gly Lys Glu Val Glu Ile Asp Arg Ile Ile Tyr Ser Pro
 580 585 590
 Arg Thr Asp Gly Asn Asp Val Ile Pro Gly Glu Glu Tyr Glu Leu Phe
 595 600 605
 Tyr Trp Glu Asn Arg Trp Val Ser Leu Gly Arg Lys Lys Ala Asp Ser
 610 615 620
 Phe Arg Leu Gln Tyr Asp Ser Val Pro Asp Asn Ser Leu Leu Trp Leu
 625 630 635 640
 His Asn Arg Thr Lys Gly Val Glu Glu Arg Ile Phe Thr Tyr Met Asn
 645 650 655
 Asn Glu Gln Ile Trp Trp
 660

<210> 8401

<211> 931

<212> PRT

<213> B.fragilis

<400> 8401

Met Asp Lys Thr Leu Leu Lys Leu Glu Ile Gly Lys Trp Asn Glu Ala
 1 5 10 15
 Cys Arg Phe Leu Lys Ser Lys Gln Thr Glu Leu Ser Thr Ala Glu Trp
 20 25 30
 Thr Ala Ile Glu Thr Leu Ala Asp Tyr Trp Arg Lys Lys Phe Asp Pro
 35 40 45
 Asp Ala Thr Ser Glu Cys Met Asp Leu Ile Ser Thr Leu Glu Gln Ser
 50 55 60
 Asp Lys Leu His Ser Asn Asn Lys Glu Ile Ile Val Trp Ser Lys Glu
 65 70 75 80
 Phe Arg Thr Ile Ala Arg Lys Tyr Tyr Thr Lys Asp Glu Thr Thr Phe
 85 90 95
 Leu Val Phe Gln Asn Ala Leu Lys Glu Leu Tyr Gln Ser Ser Ala Pro
 100 105 110
 Arg Ser Ser Ala Pro Leu Gln Thr Pro Val Asn Ser Glu Ser Gln Asn
 115 120 125
 Ile Ile Leu Lys Gln Asn Ala Lys Lys Trp Val Ser Thr Tyr Ser Gln
 130 135 140
 Leu Tyr Glu Asn Gln Asn Glu Leu Asp Arg Asp Glu Trp Asn Ala Val

145 150 155 160
 Arg Phe Leu Ala Asn Phe Trp Lys Asn Gly Thr Phe Asn Glu Thr Ser
 165 170 175
 Arg Lys Glu Cys Glu Gln Tyr Ile Ser Ile Leu Ile Ala Ser Asp Lys
 180 185 190
 Leu His Ser Asn Asn Lys Asn Ile Ile Thr Trp Ser Lys Asp Phe Arg
 195 200 205
 Gly Ile Ala Lys Thr Tyr Tyr Thr Lys Asp Ser Lys Thr Phe Glu Gly
 210 215 220
 Phe Lys Lys Phe Met Thr Lys Tyr Thr Arg Glu Asn Pro Ile Gln Glu
 225 230 235 240
 Arg Thr Pro Gln Glu Arg Ile Pro Gln Thr Pro Pro Arg Gln Thr Ser
 245 250 255
 Pro Ser Ile Glu Ile Thr Gly Leu Val Ile Ala Asn Thr Asp Glu Lys
 260 265 270
 Gly Asp Pro Ile Pro Ser Asn Gln Ala Glu Leu Asp Thr Arg Ser Cys
 275 280 285
 Tyr Leu Gln Pro Arg Ile Asp Tyr Arg Val Leu Arg Gly Gly Ser Ser
 290 295 300
 Val Asp Ile Trp Tyr Lys Leu Tyr Ala Pro Asp Arg Thr Leu Met Thr
 305 310 315 320
 Ala Ser Asn Ser Lys Ser Gly Tyr Thr Trp Tyr Gly Asn Val Pro Leu
 325 330 335
 Thr Gly Ser Arg Ser Ala Tyr Pro Leu Asn Gly Phe Gly Ser Met Ser
 340 345 350
 Gly Asn Val Phe Ser Ala Gly Gln Trp Ile Ile Glu Phe Phe Glu Asn
 355 360 365
 Asp Leu Gln Ile Ala Thr Tyr Thr Phe Thr Ile Lys Gln His Arg Thr
 370 375 380
 Ser Thr Pro Pro Pro Gln Ser Arg Val Thr Pro Pro Pro Pro Pro Arg
 385 390 395 400
 Thr Pro Ser Asn Arg Arg Thr Ser Thr Val Ser Pro Lys Lys Gly His
 405 410 415
 Gly Gly Leu Trp Ser Phe Leu Ile Ile Ala Ala Ile Ile Gly Phe Cys
 420 425 430
 Gly Tyr Gln Tyr Trp Tyr Lys Pro Met Thr Ile Asp Arg Asp Ala Glu
 435 440 445
 Arg Thr Tyr Val Tyr Val Ser Ser Leu Leu Gln Arg Ser Asp Lys Asn
 450 455 460
 Ala Asn Val Glu Tyr Asn Arg Ile Gln Ser Leu Pro Tyr Gly Ser Glu
 465 470 475 480
 Leu Ile Thr Tyr Gln Lys Glu Gly Asp Gly Trp Ser Tyr Ile Arg Ala
 485 490 495
 Asn Glu Lys Lys Gly Tyr Val Ser Thr Asn Tyr Thr Leu Ser Lys Thr
 500 505 510
 Asp Phe Glu Leu Leu Asn Asn Leu Trp Gly Ser Lys Glu Ala Met Glu
 515 520 525
 Gly Ala Pro Thr Ala Lys Cys Arg Leu Ala Leu Val Asp Phe Ile Lys
 530 535 540
 Lys Asn Asn Tyr Lys Thr Gly Thr Gly Gln Trp Gln Leu Phe Ala Gln
 545 550 555 560
 Pro Ile Glu Val Lys Pro Asn Ala Val Leu Tyr Pro Arg Leu Ala Asn
 565 570 575
 Gly Tyr Thr Lys Phe Thr Glu Phe Ala Phe Val Leu Ser Asn Ser Ser
 580 585 590
 Thr His Glu Gly Val Leu Ala Ile Tyr Ser Phe Ala Asp Asp Glu Thr
 595 600 605
 Pro Val Phe Ile Tyr Gln Glu Gln Thr Thr Glu Asn Ala Lys Ile Lys
 610 615 620

```

Asp Val Arg Tyr Tyr Pro Trp Lys Thr Asp Lys Tyr Lys Val Ile Tyr
625                      630                      635                      640
Ala Thr Pro Asn Ala Met Val Ser Arg Ser Pro Gln Leu Pro Thr Asn
                      645                      650                      655
Gln Gln Pro Ser Lys Ala Lys Ser Glu Asn Gly Leu Lys Ile Thr Lys
                      660                      665                      670
Ala Leu Phe Gly Asn Thr Asp Lys Ser Tyr Asn Ile Leu Thr Gln Phe
                      675                      680                      685
Gly Thr Gln Leu Pro Thr Thr Thr Gln Tyr Leu Ser Pro Arg Ile Phe
                      690                      695                      700
Tyr Glu Asn Pro Ala Gly Lys Ser Ser Val Val Ile Lys Tyr Lys Ile
705                      710                      715                      720
Ile Thr Pro Gln Gly Asn Leu Met Thr Gly Thr Gly Ser Pro Ser Gly
                      725                      730                      735
Tyr Thr Asn Glu Gln Lys Val Thr Leu Asn Arg Ser Gly Tyr Ile Asn
                      740                      745                      750
Leu Ala Gly Trp Gly Asn Thr Thr Gly Asp Ala Tyr Thr Ser Gly Thr
                      755                      760                      765
Tyr Arg Ile Glu Phe Trp Ser Glu Gly Glu Leu Leu Tyr Ser Thr Gly
770                      775                      780
Val Gln Ile Gln Gly Asn Ser Glu Lys Ala Val Thr Val Ser Ser Asn
785                      790                      795                      800
Pro Val Glu Cys Pro Ile Lys Ile Arg Thr Met Leu Phe Ala Asn Ser
                      805                      810                      815
Asn Asp Lys Gly Thr Ile Leu Glu Asp Tyr Gly Lys Pro Leu Tyr Gly
                      820                      825                      830
Asn Lys Leu Gln Tyr Leu Lys Pro Lys Ile Ile Tyr Ser Ser Leu Asn
                      835                      840                      845
Gly Ala Arg Asn Ile Thr Leu Tyr Ala Lys Ile Tyr Arg Pro Asn Gly
                      850                      855                      860
Val Leu Ile Ala Asn Lys Asn Ser Pro Asn Gly Tyr Thr Tyr Lys His
865                      870                      875                      880
Gly Met Tyr Thr Pro Ala Val Gly Ala Asp Asn Asn Val Ser Tyr Leu
                      885                      890                      895
Thr Ser Trp Gly Ser Pro Glu Cys Asp Val Tyr Ser Pro Gly Thr Tyr
900                      905                      910
Gln Tyr Glu Ile Trp Tyr Glu Gly Ser Lys Ile Phe Ser Cys Gln Val
915                      920                      925
Ile Val His
930

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<210> 8402

<211> 441

<212> PRT

<213> B.fragilis

<400> 8402

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Gly Thr Ala Ala Val Cys His Cys Leu Arg Cys Asn Ser His Ser Val
1                      5                      10                      15
Cys Leu Gly Tyr Tyr Glu Thr Leu Tyr Ser Ala Ile Met Glu Val Leu
20                      25                      30
Tyr Glu Ile Tyr Leu Ser Ile Arg Gln Asn Lys Ile Arg Thr Phe Leu
35                      40                      45
Ser Gly Phe Gly Ile Ser Trp Gly Ile Leu Ile Leu Val Val Leu Leu
50                      55                      60
Gly Thr Gly Lys Gly Phe Gln Asn Ser Val Met Asp Ile Phe Ser Ile
65                      70                      75                      80
Phe Ala Gln Lys Ser Met Tyr Val Tyr Gly Gly Ala Thr Ser Met Lys
85                      90                      95

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Tyr Lys Asn Ile Arg Glu Gly Glu Gln Leu His Phe Asp Leu His Phe
      100                      105                      110
Leu Asn Arg Ile Lys Lys Gln Phe Pro Gly Ile Lys Ala Ile Ser Pro
      115                      120                      125
Glu Ile Thr Gly Pro Tyr Ser Gln Val Met Asn Lys Ala Lys Ser Gly
      130                      135                      140
Leu Phe Lys Ile Ile Gly Ile Asn Glu Asn Tyr Met Gly Ile Lys Ile
      145                      150                      155                      160
Leu Lys Ile Asn Glu Asp Gly Arg Tyr Phe Asn Lys Gly Asp Asp Glu
      165                      170                      175
Asn Thr Arg Asn Val Thr Ile Ile Gly Glu Asn Val Ser Thr Thr Leu
      180                      185                      190
Phe Asn Asn Gln Lys Ala Leu Gly Lys Ser Ile Asn Ile Ala Gly Ile
      195                      200                      205
Asp Phe Lys Val Ile Gly Val Leu Lys Asn Asp Asp Ile Phe Ser Ala
      210                      215                      220
Ser Glu Ile Asn Ser Val Tyr Val Pro Phe Ser Ser Tyr Ile Asn Cys
      225                      230                      235                      240
Ile Asp Asn Lys Thr Pro Leu Arg Ala Phe Cys Leu Tyr Leu Asn Lys
      245                      250                      255
Glu Val Asp Ser Lys Arg Phe Glu Asn Glu Leu Arg Ala Phe Ile Ala
      260                      265                      270
Asn Lys Tyr Gln Phe Ala Tyr Pro Asp Lys Gln Ala Leu Gln Ile Ile
      275                      280                      285
Asn Phe Glu Thr Gln Thr Ser Ala Phe Glu Gly Leu Phe Asp Gly Leu
      290                      295                      300
Lys Met Phe Ile Trp Ile Val Gly Ile Cys Phe Leu Ile Ser Gly Ile
      305                      310                      315                      320
Val Gly Val Ser Asn Ile Met Phe Val Val Ile Lys Glu Arg Ser Ser
      325                      330                      335
Glu Ile Gly Ile Arg Lys Ala Val Gly Ala Thr Pro Lys Ser Ile Leu
      340                      345                      350
Val Leu Met Leu Thr Glu Ser Val Ile Ile Thr Val Ile Ser Gly Ile
      355                      360                      365
Ile Gly Leu Ile Ser Gly Ala Gly Ile Leu Glu Ile Ile Asn Trp Leu
      370                      375                      380
Leu Glu Ser Ala Arg His Ala Thr Met Ile Lys His Val Glu Ile Asp
      385                      390                      395                      400
Ile Asn Val Ala Val Leu Ala Leu Val Ile Leu Ile Leu Ser Gly Val
      405                      410                      415
Ile Ala Gly Ala Phe Pro Ala Met Lys Ala Ser Val Ile Gln Pro Ile
      420                      425                      430
Asp Ala Ile Arg Asn Glu Asn Ile Gly
      435                      440

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<210> 8403

<211> 245

<212> PRT

<213> B.fragilis

<400> 8403

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Ser Glu Met Ala Glu Ser Thr Ile Ile Thr Gly Gln Phe Val Arg Ile
1      5      10      15
Ser Gln Val Pro Ala Ser Leu Gly Glu Arg Ile Leu Ala Arg Ile Ile
      20      25      30
Asp Tyr Phe Leu Leu Phe Ile Tyr Ile Leu Ala Thr Ser Tyr Ile Leu
      35      40      45
Gly Lys Leu Asn Ile His Ala Phe Ser Gly Ser Thr Phe Phe Leu Leu
      50      55      60

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Phe Leu Phe Ile Tyr Leu Pro Val Leu Cys Tyr Ser Leu Leu Cys Glu
 65 70 75 80
 Val Phe Asn Gln Gly Gln Ser Ala Gly Lys Lys Leu Met Asn Ile Arg
 85 90 95
 Val Val Lys Ala Asp Gly Thr Thr Pro Ser Leu Ser Ala Tyr Leu Leu
 100 105 110
 Arg Trp Leu Leu Tyr Gly Ile Asp Val Thr Ile Thr Gly Gly Leu Gly
 115 120 125
 Val Leu Val Ile Leu Leu Thr Lys Asn Ser Gln Arg Leu Gly Asp Leu
 130 135 140
 Ala Ala Gly Thr Met Val Ile Lys Glu Lys Asn Tyr Arg Lys Ile Gln
 145 150 155 160
 Val Ser Leu Asp Glu Phe Asp Tyr Leu Thr Lys Gly Tyr His Pro Ser
 165 170 175
 Phe Pro Ser Ala Ala Asp Leu Ser Leu Glu Gln Ile Asn Val Ile Ser
 180 185 190
 Lys Ala Leu Glu Leu His His Lys Asp Arg Thr Arg His Ile Ala Gln
 195 200 205
 Leu Ala Pro Lys Val Arg Ala Leu Leu Ser Val Asp Gln Thr Asn Ile
 210 215 220
 Asn Asp Glu Lys Phe Leu Gln Thr Val Val Arg Asp Tyr Gln Tyr Tyr
 225 230 235 240
 Ala Leu Glu Glu Ile
 245

<210> 8404

<211> 602

<212> PRT

<213> B.fragilis

<400> 8404

Asn Lys Pro Ala Met Lys Asn Lys Val Leu Lys Ile Thr Ala Ala Leu
 1 5 10 15
 Leu Phe Leu Leu Pro His Ala Gly Leu Asp Asn Asn Arg Phe Pro Val
 20 25 30
 Met Leu Phe Leu Phe Tyr Ile Cys Ser Phe Val Phe Phe Ala Thr Thr
 35 40 45
 Trp Ser Gly Met Lys Glu Asp Trp Ser Arg Asn Ser Arg Thr Cys Phe
 50 55 60
 Ile Val Ser Gly Ile Val Leu Ser Leu Phe Leu Arg Tyr Val Ser Gly
 65 70 75 80
 Asn Ile Tyr Gly Thr Tyr Arg Leu Tyr Thr Met Ala Val Leu Trp Ile
 85 90 95
 Leu Phe Phe Ser Phe Tyr Ala Ala Gln Ser Leu Pro Gly Lys Asn Arg
 100 105 110
 Arg Phe Leu Ala Trp Val Val Ile Ala Thr Val Ala Val Glu Thr Val
 115 120 125
 Leu Gly Ile Ala Gln Ser Ile Gly Leu Leu Glu Asn Ser Asp Pro Gln
 130 135 140
 Phe Ile Ile Gly Gly Ser Met Thr Asn Pro Gly Ala Tyr Ala Gly Tyr
 145 150 155 160
 Leu Gly Val Thr Thr Pro Leu Ile Leu Ser Leu Leu Val Ser Tyr Lys
 165 170 175
 Lys Asn Lys Arg Phe Glu Asn Ile Cys Tyr Ile Leu Gly Gly Leu Phe
 180 185 190
 Ile Leu Val Cys Tyr Leu Leu Ile Leu Ser Arg Ser Arg Gly Ala Trp
 195 200 205
 Ile Ala Cys Gly Ala Gly Cys Leu Cys Val Leu Cys Tyr Arg Tyr Ala
 210 215 220

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Arg Phe Leu Arg Gly Thr Asn Tyr Trp Ser Lys Lys Ala Ile Arg Thr
225                230                235                240
Pro Thr Ile Ile Leu Ser Ala Val Leu Ile Ile Ala Ser Gly Phe Phe
                245                250                255
Val Phe Lys Met Lys Glu Asp Ser Ala Leu Gly Arg Ile Leu Val Trp
                260                265                270
Lys Val Thr Leu Ser Thr Pro His Pro His Ala Ser Leu Leu Trp Gly
                275                280                285
Asn Gly Ile Gly Tyr Phe Glu Ser Gln Tyr Gly Lys Trp Gln Ala Asp
                290                295                300
Tyr Phe Arg Glu Lys Glu Gly Thr Glu Lys Glu Arg His Ile Ala Gly
305                310                315                320
Tyr Val Thr Thr Ala Tyr Asn Glu Phe Leu Glu Leu Gly Leu Glu Gln
                325                330                335
Gly Ile Ile Val Thr Ala Cys Ile Ala Ala Leu Leu Val Met Ala Thr
                340                345                350
Gly Thr Gly Trp Lys Asn Leu Ser Thr Ile Glu Leu Gly Ala Lys Ala
                355                360                365
Ser Ile Val Ser Ile Thr Ile Leu Met Phe Cys Ser Tyr Pro Leu Lys
                370                375                380
Val Leu Pro Thr Thr Leu Tyr Leu Met Phe Cys Leu Ser Val Ala Leu
385                390                395                400
Tyr Gly Lys Lys Arg Leu Leu Ser Thr Gly His Arg Met Ile Ser Asn
                405                410                415
Gly Val Arg Ser Leu Ala Gly Pro Leu Ile Cys Val Phe Ala Leu Ala
                420                425                430
Gly Met Ile Asn Ala Tyr Gly Tyr Tyr Phe Cys His Arg Gly Gln Gln
                435                440                445
Arg Val Met Arg His Asp Leu Lys Gly Gly Ile Glu Met Tyr Lys Lys
450                455                460
Ala Gln Gly Ile Leu Arg Lys Asp Gly Ile Phe His Phe Tyr Leu Gly
465                470                475                480
Ser Ala Tyr Phe Leu Ser Ala Glu Tyr Gln Lys Ala Ile Glu Glu Leu
                485                490                495
Ser Val Ser Cys Thr Gln Cys Ser Asn Pro Ser Ser Phe Ile Leu Leu
                500                505                510
Gly Asn Ala Tyr Arg Glu Asn Gly Asp Thr Ala Lys Ala Ile Asp Ala
                515                520                525
Tyr Thr Thr Ala Val Tyr Ile Gln Pro Ser Lys Leu Tyr Pro Lys Tyr
530                535                540
Leu Leu Ala Lys Leu Tyr Glu Ala Ala Gly Asp Tyr Gly Ser Ala Gly
545                550                555                560
Glu Trp Ala Ser Lys Ile Leu Ala Thr Asp Glu Lys Val Pro Thr Thr
                565                570                575
Ala Ala Lys Glu Ile Lys Glu Glu Met Arg Leu Leu Leu Lys Gln Val
                580                585                590
Val Ile Lys Thr Lys Lys Asp Asp Tyr Lys
595                600

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<210> 8405

<211> 236

<212> PRT

<213> B.fragilis

<400> 8405

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Ser Met Glu Ala Lys Val Lys Ile Leu Phe Ile Asp Asp Asp Ile Thr
1          5          10          15
Phe Gly Arg Ile Cys Thr Ile Ile Leu Gln Glu Lys Gly Tyr Glu Val
20          25          30

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Phe Tyr Gln Thr Thr Leu Asn Gly Ala Lys Ala Cys Ile Ala Glu Ala
  35              40              45
His Pro Asp Ile Ile Val Leu Asp Val Glu Ile Gly Asn Gln Asn Gly
  50              55              60
Ile Glu Val Ala Pro Glu Ile Thr Val Ile Ala Pro Asn Val Pro Val
  65              70              75              80
Leu Phe Ile Ser Ser His Thr Glu Ser His Trp Val Val Gln Ala Leu
              85              90              95
Glu Ala Gly Ala Val Ala Tyr Leu Lys Lys Pro Phe His Ala Glu Glu
              100              105              110
Leu Ile Ala Tyr Val Glu Arg Phe Ala Val Gln Arg Pro Ser Gln Leu
              115              120              125
Arg Ile Gly Ser Leu Ser Leu Asp Thr Glu Thr Arg Ile Leu Phe Ala
              130              135              140
Asp Asp Ser Thr Val Ile Lys His Leu Ser Glu Ser Glu Tyr Lys Leu
              145              150              155              160
Val Arg Leu Leu Leu Ile His Lys Asn His Ile Val Gly Arg Gly Gln
              165              170              175
Ile Glu Met Glu Leu Trp Gly Asn Thr Glu Gly Asn Glu Gln Ser Thr
              180              185              190
Asn Asn Leu Ile Phe Lys Ile Arg Lys Tyr Leu Val Ala Asp Pro Asp
              195              200              205
Ile Ala Leu Glu Thr Ile Pro Arg Ser Gly Tyr Arg Leu Ser Val Lys
              210              215              220
Leu Glu Lys Gln Lys Arg Arg Val Ser Asp Cys Phe
              225              230              235

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<210> 8406

<211> 251

<212> PRT

<213> B.fragilis

<400> 8406

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Asn Trp Val Tyr Leu Gln Thr Lys Leu Lys Lys Tyr Met Lys Lys Ile
  1              5              10              15
Tyr Leu Phe Leu Ser Phe Leu Ile Val Ile Leu Ala Tyr Pro Leu Ile
              20              25              30
Ser Leu Leu Thr Val Leu Ile Ile Gly Asn Leu Val Gln Asn Thr Thr
              35              40              45
Pro Trp Ile Arg Pro Met Thr Leu Phe Ser Leu Ala Thr Phe Ile Leu
              50              55              60
Ile Phe Arg Lys Asn Ile Arg Cys His Ser Ser Phe Asn Arg Ser Leu
              65              70              75              80
Ser Leu Lys Thr Ile Leu Ser Val Cys Ile Leu Thr Ile Ser Met Cys
              85              90              95
Ile Ala Ile Gly Met Ile Thr Pro Ile Pro Gln Asn Ile Ser Leu Ala
              100              105              110
Lys Gln Glu Leu Leu Asn Phe Pro Arg Phe Ile Tyr Ser Leu Phe Leu
              115              120              125
Ile Pro Ile Leu Glu Glu Leu Cys Phe Arg Ile Ile Ile Ile Asn Lys
              130              135              140
Phe Lys Gly Lys Met Asn Gln Trp Ile Ile Ile Thr Gly Thr Ala Leu
              145              150              155              160
Leu Phe Gly Ile Ile His Thr Ser Ser Ile Tyr Thr Met Ile Ser Met
              165              170              175
Ala Cys Phe Gly Phe Ile Leu Ala Tyr Leu Tyr Val Lys Ser Glu Asn
              180              185              190
Gly Phe Leu Leu Ile Leu Val His Ser Leu Tyr Ser Ile Ser Val Tyr
              195              200              205

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Cys Ser Tyr Ser Val Phe Trp Ser Ile Thr Ser Arg Val Leu Asn Tyr
 210 215 220
 Val Tyr Ser Pro Ile Tyr Tyr Ile Ile Val Ala Ile Ser Ile Met Tyr
 225 230 235 240
 Ile Ile Tyr Phe Phe Leu Lys Lys Lys Tyr Val
 245 250

<210> 8407

<211> 365

<212> PRT

<213> B.fragilis

<400> 8407

Lys Arg Lys Tyr Arg Ile Met Lys Thr Phe Lys Ile Ile Leu Ile Cys
 1 5 10 15
 Ile Phe Ser Ala Thr Leu Ala Phe Val Ala Phe Arg Ser Ser Leu Arg
 20 25 30
 Gly Thr Lys Ala Ile Tyr Glu Thr Thr Gln Pro Gln Tyr Arg Glu Ile
 35 40 45
 Lys Glu Glu Ile Asn Ile Ser Gly Asn Val Phe Pro Met Lys Glu Ile
 50 55 60
 Glu Ile Lys Ser Gln Ile Ser Gly Val Leu Asp Lys Ile Asn Val Ser
 65 70 75 80
 Ile Gly Asp Lys Val Arg Ile Gly Asp Pro Val Ala Ser Ile Met Leu
 85 90 95
 Val Pro Asn Ala Ser Asp Met Glu Arg Leu Glu Tyr Asn Leu Asn Thr
 100 105 110
 Ala Gln Ile Glu Tyr Lys Ala Arg Leu Glu Asp Tyr Lys Arg Glu His
 115 120 125
 Lys Leu Tyr Ser Lys Asn Leu Val Ala Gln Ala Glu Met Asp Ser Tyr
 130 135 140
 Thr Gln Ala Tyr Glu Leu Ser Lys Glu Lys Leu Ala Ser Ala Gln Asn
 145 150 155 160
 Gln Leu Asn Ile Leu Lys Glu Gly Arg Ile Ser Pro Glu Thr Ala Ser
 165 170 175
 Asn Ile Val Arg Ser Ser Ile Ser Gly Val Ile Ile Asp Thr Pro Leu
 180 185 190
 Glu Thr Gly Ala Ser Val Ile Glu Arg Asn Asn Phe Asn Pro Gly Thr
 195 200 205
 Thr Ile Ala Val Val Ala Glu Met Ser Arg Phe Arg Phe Lys Ala Leu
 210 215 220
 Val Pro Glu Lys Tyr Leu Lys Asp Ile Ala Leu Gln Asp Thr Ile Ser
 225 230 235 240
 Leu Leu Phe Asn Ala Tyr Asp Asn Leu Arg Thr Arg Ala Val Val Thr
 245 250 255
 Lys Ile Ser Ser Lys Gly Asn Ala Glu Asn Gly Ile Met Lys Tyr Met
 260 265 270
 Leu Glu Ala Glu Phe Pro Val Ser Glu Asn Met Pro Val Ile Arg Ser
 275 280 285
 Gly Tyr Ser Ala Thr Ala Asn Met Val Ile Lys Gln Lys Lys His Thr
 290 295 300
 Leu Ser Ile Asp Glu Lys Tyr Val Leu Tyr Glu Asn Asp Ser Thr Tyr
 305 310 315 320
 Leu Tyr Leu Leu Asp Thr Val Thr Gln Gln Lys Thr Lys Gln Ile Ile
 325 330 335
 Asn Ile Gly Ile Ser Asp Gly Asn Tyr Val Glu Val Ile Lys Gly Ile
 340 345 350
 Ser Leu Lys Asp Lys Ile Val Thr Asn Ser Thr Asp Lys
 355 360 365

<210> 8408
 <211> 353
 <212> PRT
 <213> B.fragilis

<400> 8408

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Trp Pro Asp Leu Ser Lys Val Leu Ser Arg Val Ile Pro Asn Tyr Pro
1      5      10      15
Met Phe Cys Gly Trp Ala Ser Phe Tyr Cys His Cys His Leu Leu Ser
      20      25      30
Ile Thr Ile Phe Ile Tyr Gln Thr Glu Lys Leu Met Glu Ser Gln Lys
      35      40      45
Pro Lys Ile Ala Leu Tyr Val Lys Arg Pro Phe Gly Asp Lys Leu Asn
      50      55      60
Ala Thr Met Asp Phe Ile Lys Glu Asn Trp Lys Pro Met Leu Lys Phe
      65      70      75      80
Cys Thr Tyr Leu Ile Leu Pro Leu Cys Leu Ile Gln Ala Ile Ser Met
      85      90      95
Asn Gly Ile Met Gly Gly Ala Met Gly Ile Ala Ala Ala Lys Glu Ala
      100      105      110
Gly Thr Asn Ser Leu Ala Ala Ile Gly Met Gln Phe Trp Val Asn Tyr
      115      120      125
Gly Leu Met Phe Leu Cys Tyr Leu Val Gly Ser Ile Leu Leu Thr Ser
      130      135      140
Ile Ile Tyr Gly Leu Met Gln Val Tyr Asn Gln Arg Glu Glu Arg Leu
      145      150      155      160
Ala Gly Val Thr Phe Ala Asp Leu Lys Pro Phe Leu Phe Lys Asn Ile
      165      170      175
Arg Arg Leu Leu Val Met Val Leu Phe Cys Ile Gly Leu Thr Ile Val
      180      185      190
Val Gly Ile Val Met Gly Ile Leu Val Val Ala Ser Pro Phe Thr Leu
      195      200      205
Leu Leu Thr Ile Pro Leu Leu Ile Ala Cys Ala Val Pro Leu Ala Leu
      210      215      220
Phe Thr Pro Ile Tyr Leu Phe Glu Glu Ile Gly Ile Leu Ala Ala Phe
      225      230      235      240
Trp Lys Thr Phe Arg Leu Gly Phe Ala Thr Trp Gly Gly Val Phe Leu
      245      250      255
Val Ser Leu Val Met Gly Leu Ile Ser Ser Val Leu Gln Gly Val Thr
      260      265      270
Thr Thr Pro Trp Tyr Ile Ala Thr Ile Val Lys Tyr Phe Phe Met Leu
      275      280      285
Ser Asp Thr Gln Asn Glu Leu Thr Ile Ser Ala Gly Tyr Ser Phe Met
      290      295      300
Val Tyr Leu Leu Ala Ile Val Gln Thr Phe Gly Ala Tyr Leu Ser Met
      305      310      315      320
Ile Phe Ser Leu Ile Gly Met Val Tyr Gln Tyr Gly His Ala Ser Glu
      325      330      335
Val Val Asp Ser Ile Ser Val Glu Ser Glu Ile Asp Lys Phe Glu Gln
      340      345      350
Leu

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<210> 8409
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 8409

Pro Met Phe His Ile Leu Gly Phe Leu Phe Ile Ile Val Ile Ala Val
 1 5 10 15
 Ile Ile Ile Gly Leu Ala Leu Val Gly Ser Val Leu Arg Ala Val Phe
 20 25 30
 Gly Leu Gly Lys Arg Ser Pro Ser Ser Gly Ser Asp Arg Asn Gly Pro
 35 40 45
 Asn Asn Asn Ser Gly Ser Arg Arg Tyr Tyr His Gln Thr Gln Ala Asn
 50 55 60
 Asp Lys Glu Glu Ile Ile Thr Gly Thr Gly Ala Lys His Lys Lys Leu
 65 70 75 80
 Phe Asp Asp Asn Glu Gly Glu Tyr Val Asp Tyr Glu Glu Ile Lys Glu
 85 90 95

<210> 8410

<211> 242

<212> PRT

<213> B.fragilis

<400> 8410

Thr Asn Asn Gln Asn Arg Met Ala Lys Tyr Lys Arg Val Leu Leu Lys
 1 5 10 15
 Leu Ser Gly Glu Ser Leu Met Gly Glu Lys Gln Tyr Gly Ile Asp Glu
 20 25 30
 Lys Arg Leu Ala Glu Tyr Ala Ala Gln Ile Lys Glu Ile His Glu Gln
 35 40 45
 Gly Val Gln Ile Gly Ile Val Ile Gly Gly Gly Asn Ile Phe Arg Gly
 50 55 60
 Leu Ser Gly Ala Asn Lys Gly Phe Asp Arg Val Lys Gly Asp Gln Met
 65 70 75 80
 Gly Met Leu Ala Thr Val Ile Asn Ser Leu Ala Leu Ser Ser Ala Leu
 85 90 95
 Val Ala Ala Gly Val Lys Ala Arg Val Leu Thr Ala Val Arg Met Glu
 100 105 110
 Pro Ile Gly Glu Phe Tyr Ser Lys Trp Lys Ala Ile Glu Cys Met Glu
 115 120 125
 Asn Gly Glu Ile Val Ile Met Ser Ala Gly Thr Gly Asn Pro Phe Phe
 130 135 140
 Thr Thr Asp Thr Gly Ser Ser Leu Arg Gly Ile Glu Ile Glu Ala Asp
 145 150 155 160
 Val Met Leu Lys Gly Thr Arg Val Asp Gly Ile Tyr Thr Ala Asp Pro
 165 170 175
 Glu Lys Asp Pro Thr Ala Thr Lys Phe His Asp Ile Thr Tyr Asp Glu
 180 185 190
 Val Leu Lys Arg Gly Leu Lys Val Met Asp Leu Thr Ala Thr Cys Met
 195 200 205
 Cys Lys Glu Asn Asn Leu Pro Ile Val Val Phe Asp Met Asp Thr Val
 210 215 220
 Gly Asn Leu Lys Lys Val Ile Thr Gly Glu Glu Ile Gly Thr Leu Val
 225 230 235 240
 His Asn

<210> 8411

<211> 469

<212> PRT

<213> B.fragilis

<400> 8411

Thr Ala Gly Gln Pro Lys Val Val Leu Leu Ile Leu Ala Leu Ala Gly
 1 5 10 15
 Asn Gly Leu Gly Ser His His Ile Arg Pro Thr Ala Leu Thr Gly Lys
 20 25 30
 Val Ser Val Arg Met Ile Tyr Arg His His Arg Ala Lys Val Gly Thr
 35 40 45
 Val Glu Cys Thr Val Asp Leu Cys Cys Leu Val Thr Val Val Thr Ser
 50 55 60
 Val Arg Ser Ile Pro Val Ser Val Val Val Asp Gly Leu Gln Pro His
 65 70 75 80
 Leu Gln Pro Ile Gly Asp Val Arg Ser Gln Val Gln Val Asp Ile Glu
 85 90 95
 Thr Ala Val Leu Ile Val Val Met Phe Gln Cys Ser Pro Leu Val Glu
 100 105 110
 Glu Thr Tyr Arg Thr Val Ile Gly Gly Leu Ala Arg Thr Ser Val Glu
 115 120 125
 Arg Gln Gly Val Leu Leu His Gln Gly Val Val Phe Asp Gly Phe Ile
 130 135 140
 Tyr Pro Val Gly Val Ala Ala Ile Gln Ile Leu Val Gly Ile Gly Arg
 145 150 155 160
 Ile Asp Glu Tyr Arg Gln Ile Val Phe Arg Val Gly Ile Ile Gly Ile
 165 170 175
 Asp Met Ile His Ile Val Leu Ile Val Val Ile Ala Ser Thr Arg Val
 180 185 190
 Ala Val Gly Gln Ile Met Glu Ile Gly Lys Cys Pro Arg Ile His Ile
 195 200 205
 Leu Arg Phe Ala Cys Arg Arg Ile Asp Arg Pro Val Gly Arg Glu Arg
 210 215 220
 Asp Leu Gly Phe Leu Val Phe Thr Phe Leu Gly Gly Asn Gln His Asp
 225 230 235 240
 Thr Ile Gly Cys Leu Cys Ser Val Asn Arg Ser Arg Ser Arg Ile Leu
 245 250 255
 Gln Tyr Arg Tyr Ala Phe His Ile Gly Arg Ile Asp His Val Gly Ile
 260 265 270
 His Leu His Thr Ile Asp Gln Tyr Gln Arg Ser Gly Arg Val Tyr Arg
 275 280 285
 Cys Ser Thr Thr Asn Val Glu Pro Val Ser Phe Ala Arg Arg Thr Val
 290 295 300
 Val Gly Gly Asn Val Gln Val Thr Asp Arg Arg Leu Gln Ser Leu Ala
 305 310 315 320
 Lys Ile Gly Asp Arg Ala Thr Leu Gln Cys Leu Cys Arg Asn Thr Gly
 325 330 335
 Tyr Gly Ser Gly Glu Val Gly Phe Leu Leu Cys Thr Ile Thr His His
 340 345 350
 His Asp Phe Val Gln Gly Phe Ala Val Leu Phe Gln Gly Asp Leu Gln
 355 360 365
 Thr Gly Leu Cys Gly Asn Gly His Asp Leu Cys Phe His Ser Asn Lys
 370 375 380
 Gly Asp Leu Lys Leu Leu Ser Leu Phe Arg Phe Asn Arg Glu Val Thr
 385 390 395 400
 Ile His Ile Gly Asp Cys Ser Thr Ser Gly Ser Thr Leu Tyr Gln Tyr
 405 410 415
 Arg Ser Pro Gly Lys Arg Arg Thr Arg Asn Val Lys Asn Thr Thr Gly
 420 425 430
 Tyr Phe Leu Phe Leu Leu Phe Tyr Leu His His Ser Gly Arg Cys Cys
 435 440 445
 Ile Val Ala Val Arg Ser Lys Ala Arg Leu Lys Ser His Thr Arg Lys
 450 455 460
 Lys Asp Lys His Pro

4573
 Thr Ala Gly Gln Pro Lys Val Val Leu Leu Ile Leu Ala Leu Ala Gly
 1 5 10 15
 Asn Gly Leu Gly Ser His His Ile Arg Pro Thr Ala Leu Thr Gly Lys
 20 25 30
 Val Ser Val Arg Met Ile Tyr Arg His His Arg Ala Lys Val Gly Thr
 35 40 45
 Val Glu Cys Thr Val Asp Leu Cys Cys Leu Val Thr Val Val Thr Ser
 50 55 60
 Val Arg Ser Ile Pro Val Ser Val Val Val Asp Gly Leu Gln Pro His
 65 70 75 80
 Leu Gln Pro Ile Gly Asp Val Arg Ser Gln Val Gln Val Asp Ile Glu
 85 90 95
 Thr Ala Val Leu Ile Val Val Met Phe Gln Cys Ser Pro Leu Val Glu
 100 105 110
 Glu Thr Tyr Arg Thr Val Ile Gly Gly Leu Ala Arg Thr Ser Val Glu
 115 120 125
 Arg Gln Gly Val Leu Leu His Gln Gly Val Val Phe Asp Gly Phe Ile
 130 135 140
 Tyr Pro Val Gly Val Ala Ala Ile Gln Ile Leu Val Gly Ile Gly Arg
 145 150 155 160
 Ile Asp Glu Tyr Arg Gln Ile Val Phe Arg Val Gly Ile Ile Gly Ile
 165 170 175
 Asp Met Ile His Ile Val Leu Ile Val Val Ile Ala Ser Thr Arg Val
 180 185 190
 Ala Val Gly Gln Ile Met Glu Ile Gly Lys Cys Pro Arg Ile His Ile
 195 200 205
 Leu Arg Phe Ala Cys Arg Arg Ile Asp Arg Pro Val Gly Arg Glu Arg
 210 215 220
 Asp Leu Gly Phe Leu Val Phe Thr Phe Leu Gly Gly Asn Gln His Asp
 225 230 235 240
 Thr Ile Gly Cys Leu Cys Ser Val Asn Arg Ser Arg Ser Arg Ile Leu
 245 250 255
 Gln Tyr Arg Tyr Ala Phe His Ile Gly Arg Ile Asp His Val Gly Ile
 260 265 270
 His Leu His Thr Ile Asp Gln Tyr Gln Arg Ser Gly Arg Val Tyr Arg
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 Cys Ser Thr Thr Asn Val Glu Pro Val Ser Phe Ala Arg Arg Thr Val
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 Val Gly Gly Asn Val Gln Val Thr Asp Arg Arg Leu Gln Ser Leu Ala
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 Lys Ile Gly Asp Arg Ala Thr Leu Gln Cys Leu Cys Arg Asn Thr Gly
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 Tyr Gly Ser Gly Glu Val Gly Phe Leu Leu Cys Thr Ile Thr His His
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 His Asp Phe Val Gln Gly Phe Ala Val Leu Phe Gln Gly Asp Leu Gln
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 Gly Asp Leu Lys Leu Leu Ser Leu Phe Arg Phe Asn Arg Glu Val Thr
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 Ile His Ile Gly Asp Cys Ser Thr Ser Gly Ser Thr Leu Tyr Gln Tyr
 405 410 415
 Arg Ser Pro Gly Lys Arg Arg Thr Arg Asn Val Lys Asn Thr Thr Gly
 420 425 430
 Tyr Phe Leu Phe Leu Leu Phe Tyr Leu His His Ser Gly Arg Cys Cys
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Pro Glu Ile Asp Ile Tyr Gly Trp Leu Ser Met Gln Leu Ser Lys Leu
          35          40          45
Leu Arg Ala Ile Phe Gly Ser Arg Phe Ala Glu Glu Tyr Ser Gly Ile
          50          55          60
Ile Leu Ile Ile Ile Ala Ile Leu Ile Leu Leu Ile Leu Trp Phe
65          70          75          80
Leu Tyr Lys Lys Arg Pro Glu Leu Phe Met Arg Ser Arg Arg Gly Pro
          85          90          95
Val Asn Tyr Ser Val His Glu Asp Thr Ile Tyr Gly Val Asp Phe Asp
          100          105          110
Ala Glu Ile Arg Arg Ala Ile Asp Arg Lys Asp Tyr Arg Glu Ala Ile
          115          120          125
Arg Leu Leu Tyr Leu Gln Thr Leu Lys Leu Leu Ser Asp Asp Gly Arg
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Ile Asp Trp Gln Leu Tyr Lys Thr Pro Thr Glu Tyr Ile Tyr Glu Val
145          150          155          160
Lys Gln Glu Ile Leu Arg Thr Pro Phe Arg Asn Leu Thr His Gly Phe
          165          170          175
Leu Arg Val Arg Tyr Gly Asn Phe Pro Ala Ser Glu Ser Leu Phe Glu
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          20          25          30
Phe His Ser Ser Ile Arg Thr Ile Ser Lys Lys Asp Arg Val Ile Lys
          35          40          45
Arg Glu Ile Lys Ile Ser Phe Ser Cys Lys Asn Ala Asn Lys Gln Ile
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Tyr Leu His Asn Tyr Phe Ser Leu Arg Thr Arg Asp Lys Ile Tyr Pro
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Tyr Asn Gln Lys Thr
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Ala Phe Tyr Tyr Tyr His Thr Ala Gln Met Ala Gln Ile Lys Asn Ala
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Asn Ile Leu Leu Ile Ser Lys Asp Glu Met Lys Leu Arg Leu Ile Asp
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Tyr Lys Gly Gln Glu Leu Phe Thr Ala Asp Ile Ala Cys Gly Lys Asn
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Tyr Gly Asn Lys Glu Lys Gln Gly Asp Leu Lys Thr Pro Glu Gly Thr
          85           90           95
Phe Lys Ile Ile Asp Ile Gln Asp Ala Ser Lys Trp Lys His Asp Phe
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Gly Asp Gly Lys Gly Glu Ile Glu Gly Ala Tyr Gly Asn His Phe Ile
          115          120          125
Arg Leu Glu Thr Pro Gly His Lys Gly Asn Trp Asp Ser Trp His Pro
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Ser Lys Ile Gln Asn
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Ile Arg Ala Gly Lys Ala Ser Thr Arg Leu Leu Asp Gly Ile Arg Val
          35           40           45
Asp Ser Tyr Gly Ser Met Val Pro Ile Ser Asn Val Ala Ala Val Thr
          50           55           60
Thr Pro Asp Ala Arg Ser Ile Thr Ile Lys Pro Trp Asp Lys Ser Met
65           70           75           80
Phe Arg Val Ile Glu Lys Ala Ile Ile Asp Ser Asp Leu Gly Ile Met
          85           90           95
Pro Glu Asn Asn Gly Glu Ile Ile Arg Ile Gly Ile Pro Pro Leu Thr
          100          105          110
Glu Glu Arg Arg Lys Gln Leu Ala Lys Gln Cys Lys Ala Glu Gly Glu
          115          120          125
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Leu Lys Lys Ala Val Lys Asp Gly Leu Ala Glu Asp Glu Gln Lys Asn
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 Asp Ile Thr Leu Ile Cys Lys Ser Gln Asn His Leu Ser Asp Tyr Leu
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 Tyr Ile Pro Pro Ser Ser His Ile Lys Thr Glu Glu Ala Glu Ile Ile
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 Lys Ser Asn Ile Pro Ile Ile His Phe Ile Asn Thr Glu Tyr Leu Lys
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 Asp Glu Tyr Leu Ser Glu Asp Gln Gln Val Glu Lys Ile Ile Leu Cys
 115 120 125
 Asp Cys Phe Asn Gln Leu Leu Glu Ser Phe Phe Gln Lys Asp Lys Met
 130 135 140
 Phe Val Leu Pro Tyr Phe Ser Ile Pro Val Val Thr Lys Asn Val Glu
 145 150 155 160
 Ile Arg Asn Lys Asn Ser Pro Lys Leu Leu Ile Ala Ile Ala His Pro
 165 170 175
 Asn Leu Lys Asn Ser Pro Val Tyr Tyr Ile Ser Asn Leu Leu Asn Ile
 180 185 190
 Leu Ser Asp Tyr Arg Ile Thr Ile Leu Tyr Asn Gly Asp Pro Leu Ile
 195 200 205
 Pro Ile Phe Asn Ser Asn Ile Thr Leu Ile Asn Val Lys Glu Ser Asn
 210 215 220
 Ile Glu Lys Val Ile Leu Ser Asn Asp Ile Ile Ile Gly Asp Gly Ile
 225 230 235 240
 Ser Ile Tyr Thr Gly Ile Met Leu Gly Lys Pro Cys Ile Val Ile Gly
 245 250 255
 Glu Gln Gly Tyr Gly Gly Leu Ile Thr Pro Gln Asn Leu Ser Gln Gln
 260 265 270
 Phe Ala Asn Lys Phe Gln Gly Arg Ile Gly Gly Ser Leu Asn Glu Tyr
 275 280 285
 Ile Pro Leu Asn Leu Ile Met Asn Asp Ile Gln Tyr Val Gln Asn Thr
 290 295 300
 Glu Lys Ser Lys Asn Ile Asp Cys Ile Ile Ile Lys Asn Lys Lys Leu
 305 310 315 320
 Leu Asp Asn Glu Tyr Arg Gln Thr Gln Gln Ser Leu Asn Asp Leu Ile
 325 330 335
 Leu Glu Val Ala Ala Asn His Lys Gln Leu Tyr Thr Phe Pro Met Glu
 340 345 350
 Ile His Leu Arg Leu Ser Asp Ala Phe His Leu Ile Lys Phe Ser Asp
 355 360 365
 Thr Lys Phe Val Leu Ala Tyr Thr Ala Asn Asn Lys Val His Ser Ser
 370 375 380
 Phe Gly Lys Glu Glu Ala Glu Ile Ile Ala Leu Phe Lys Arg Ser Cys
 385 390 395 400
 Leu Ile Lys Asp Ala Ile Asn Met Ser Pro Tyr Lys Lys Glu Pro Lys
 405 410 415
 Ile Phe Val Glu Phe Ile Gln Met Leu Phe Asn Glu Lys Ile Leu Ile
 420 425 430
 Ala

<210> 8417
 <211> 361
 <212> PRT
 <213> B.fragilis

<400> 8417

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Asp Met Asp Lys Lys Val Lys Trp Gly Ile Val Ile Leu Val Gly Ala
1      5      10      15
Gly Leu Ile Gly Trp Gly Ile Tyr Ser Arg Leu Pro Lys Ala Asn Glu
      20      25      30
Glu Leu Ala Ala Ala Asp Lys Val Met Thr Gly Lys Gln Ile Asn Lys
      35      40      45
Arg Val Leu Asn Val Asn Ala Lys Ile Ile Lys Pro Gln Leu Leu Thr
      50      55      60
Asp Gln Ile Gln Ile Ser Gly Ser Leu Met Pro Asp Glu Glu Val Asp
65      70      75      80
Leu Ser Phe Glu Thr Ser Gly Lys Ile Val Glu Ile Asn Phe Asp Glu
      85      90      95
Gly Thr Thr Val Lys Lys Gly Gln Leu Leu Ala Lys Val Asn Asp Arg
      100     105     110
Gln Leu Gln Ala Gln Leu Gln Arg Leu Val Ala Gln Leu Lys Leu Ala
      115     120     125
Glu Asp Arg Val Phe Arg Gln Asn Ala Leu Leu Glu Arg Asp Ala Val
      130     135     140
Ser Lys Glu Ala Tyr Glu Gln Val Lys Thr Glu Leu Ala Thr Leu Asn
145     150     155     160
Ala Asp Ile Asp Leu Val Lys Ala Asn Ile Ala Met Thr Glu Leu Arg
      165     170     175
Ala Pro Phe Asp Gly Val Ile Gly Leu Arg Gln Val Ser Val Gly Ser
      180     185     190
Tyr Ala Ser Pro Thr Thr Ile Val Ala Lys Leu Thr Lys Ile Ile Pro
      195     200     205
Leu Lys Ile Glu Phe Ser Val Pro Glu Arg Tyr Ala Ser Gln Val Lys
      210     215     220
Lys Gly Thr Asn Leu Asn Phe Glu Leu Glu Gly Lys Leu Ser Ser Phe
225     230     235     240
Pro Ala Lys Val Tyr Ala Thr Glu Ser Arg Ile Asp Gln Ser Thr Arg
      245     250     255
Thr Leu Thr Val Arg Ala Leu Tyr Ala Asn Ser Asn Gly Ala Ile Leu
      260     265     270
Pro Gly Arg Tyr Ala Ser Ile Gln Leu Lys Lys Glu Glu Ile Pro Asn
      275     280     285
Ala Ile Ala Ile Pro Ser Glu Ser Ile Val Pro Glu Met Gly Lys Asp
      290     295     300
Lys Val Phe Leu Tyr Lys Ser Gly Lys Ala Glu Pro Val Glu Ile Thr
305     310     315     320
Ala Gly Ile Arg Thr Glu Ala Glu Val Gln Val Ile Lys Gly Leu Gln
      325     330     335
Met Gly Asp Thr Ile Ile Thr Ser Gly Thr Leu Gln Leu Arg Thr Gly
      340     345     350
Leu Pro Val Thr Leu Asp Asn Ile Asn
      355     360

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<210> 8418
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 8418

Phe Ile Thr Lys Ile Phe Cys Ile Lys Ile Glu Ala Ile Ile Asp Asn
 1 5 10 15
 Asn Ile Arg Met Ala Asp Asn Gly Lys Tyr Cys Ile Gly Ile Thr Tyr
 20 25 30
 Ile Asp Arg Met Ile Glu Ile Gly Leu Ser Ile Phe Asn Ser Ile Leu
 35 40 45
 Phe Leu Leu Val Val Lys Leu Ile Ile Asp Pro Asp Lys Leu Phe Phe
 50 55 60
 Cys Lys Ile
 65

<210> 8419
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 8419
 Cys Ser Cys Leu Pro Ser Phe His Ile Leu Trp Met Asp Leu Pro Met
 1 5 10 15
 Gln Ala Arg His Leu Pro Val Val Ile Ser Ala Pro Val Ile Val Trp
 20 25 30
 Ser Phe Thr Val Pro Ser Asp Ser Tyr Ser Asp Gly Val Ser Asp Tyr
 35 40 45
 Gln Pro Gly Ser Pro Phe Phe Thr Val Leu Val Asp Asn His Phe Trp
 50 55 60
 Asp Tyr
 65

<210> 8420
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 8420
 Tyr Phe Asn Asn Met Lys Lys Leu Asn Ile Asn Lys Leu Ser Glu Tyr
 1 5 10 15
 Pro Val Val Asn Ile Glu Glu Gln Thr Ser Leu Lys Gly Gly Val Ser
 20 25 30
 Gln Asp Glu Phe Phe Arg Met Leu Glu Asn Asn Thr Trp Gln Gly Gly
 35 40 45
 Tyr Val Asp Gly Tyr Gly Tyr Ala Ala Pro Ala Val Thr Ile Tyr Gly
 50 55 60
 Thr Ser Trp Asn Glu Thr Gly Arg Trp Asp Ile Asp Gly Cys Pro Ala
 65 70 75 80
 Cys Gly Asn Gly Leu Gly Tyr Asp Gln Thr Lys Pro Lys Pro Glu His
 85 90 95
 Asp Ile Val Thr Ile Trp Thr His Phe Phe Cys His Lys His Ile Tyr
 100 105 110
 Tyr Gly Ser Lys
 115

<210> 8421
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 8421
 Met Val Asn Lys Tyr Phe Phe Ile Ala Ala Phe Leu Phe Trp Leu Leu
 1 5 10 15

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Pro Ala Ile Val Arg Leu Cys Val Ile Asp Ile Ser Glu Ile Ala Ile
      20              25              30
Ser His Thr Thr Thr Phe Glu Ile Asn Ser Pro Ala Asn Lys Thr Leu
      35              40              45
Tyr Phe Leu Tyr Asn Lys Asp Lys His Ser Ala Phe Ile Thr Ile Leu
      50              55              60
Lys Asn Asn Met Gln Gly Cys Ile Leu Asn Val Leu Gly Gly Gly Leu
      65              70              75              80
Leu Gly Ile Gly Thr Leu Phe Asn Leu Leu Leu Asn Gly Phe Cys Phe
      85              90              95
Ala Asp Val Cys Cys Arg Thr Tyr Lys Leu Gly Met Ser Ile Thr Asp
      100             105             110
Ile Phe Ala Leu Thr Leu Pro His Ser Phe Glu Leu Ile Gly Phe Trp
      115             120             125
Ile Ser Gly Gly Ile Gly Leu Tyr Ile Ala Trp Asn Ile Ile Leu Phe
      130             135             140
Met Tyr Thr Asp Lys Met Pro Thr Phe Lys Phe Tyr Lys Asn Ile Gly
      145             150             155             160
Ile Asn Leu Leu Ile Ile Phe Ile Ile Ile Leu Ser Ala Ala Tyr Ile
      165             170             175
Glu Thr Tyr Val Ser Ile Asn Met Leu Thr
      180             185

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<210> 8422
<211> 270
<212> PRT
<213> B.fragilis

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<400> 8422
Lys Ser Ser Lys His Leu Gln Val Glu Met Thr Tyr Val Asp Asn Phe
1      5      10      15
Leu Lys Phe Ile Phe Val Ser Ser Cys Arg His Cys Asn Phe Met Ala
      20      25      30
Ser Asn Tyr Gln Pro Ile Thr Met Gln Asp Phe Val His Leu His Val
      35      40      45
His Thr Gln Tyr Ser Leu Leu Asp Gly Gln Ala Ser Val Ser Ala Leu
      50      55      60
Val Asp Lys Ala Met Lys Asp Gly Met Lys Gly Ile Ala Val Thr Asp
      65      70      75      80
His Gly Asn Met Cys Ala Ile Lys Glu Phe Thr Asn Tyr Val Asn Lys
      85      90      95
Lys Asn Gly Gly Pro Lys Gly Glu Ile Lys Asp Leu Lys Lys Arg Ile
      100     105     110
Ala Ala Ile Glu Ala Gly Glu Val Glu Cys Ala Asp Lys Asp Ala Glu
      115     120     125
Ile Ala Asp Cys Lys Ala Lys Ile Ala Asp Ala Glu Gly Arg Leu Phe
      130     135     140
Lys Pro Ile Ile Gly Cys Glu Met Tyr Val Ala Arg Arg Thr Met Asp
      145     150     155     160
Lys Lys Glu Gly Lys Pro Asp Gln Ser Gly Tyr His Leu Ile Val Leu
      165     170     175
Ala Lys Asn Glu Lys Gly Tyr His Asn Leu Ile Lys Leu Val Ser Arg
      180     185     190
Ala Trp Thr Lys Gly Tyr Tyr Met Arg Pro Arg Thr Asp Arg Asn Glu
      195     200     205
Leu Glu Lys Tyr His Glu Gly Leu Ile Ile Cys Ser Ala Cys Leu Gly
      210     215     220
Gly Glu Val Pro Lys Lys Ile Thr Gln Gly Leu Leu Ala Glu Ala Glu
      225     230     235     240

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Glu Ala Ile Gln Trp Tyr Lys Asn Leu Phe Gly Asp Asp Tyr Tyr Leu
 245 250 255
 Glu Met Gln Arg His Lys Ala Thr Gly Pro Lys Ala Lys Ser
 260 265 270

<210> 8423
 <211> 418
 <212> PRT
 <213> B.fragilis

<400> 8423

Ile Gly Ile Lys Trp Leu Lys Tyr Leu Arg Pro Leu Ser Leu Thr Ser
 1 5 10 15
 Gly Ile Trp Leu Thr Lys Arg Ile Ile Lys Asn Glu Met Lys Thr Lys
 20 25 30
 Leu Thr Asn Cys Val Lys Thr Val Leu Leu Ser Phe Met Leu Gly Val
 35 40 45
 Leu Phe Ala Cys Cys Gln Gly Ala Ala Ser Ser Gly Asn Ala Gly Lys
 50 55 60
 Asn Ala Ser Arg Val Arg Ile Ala Ser Asn Asp Ser Ala Lys Leu Val
 65 70 75 80
 Pro Asp Lys Ala Leu Asn Asp Ala Ser Cys Val Leu Ala Gly Leu Pro
 85 90 95
 Val Asp Lys Ala Ser Gly Lys Leu Tyr Ala Leu Thr Arg Thr Lys Glu
 100 105 110
 Trp Lys Asn His Ala Arg Tyr Met Asp Gln Ile Trp Asn Val Phe Arg
 115 120 125
 Gln Thr Ala Pro Arg Leu Val Ala Phe Ser Gln Thr Glu Leu Glu Asp
 130 135 140
 Ile Asn Thr Arg Cys His Thr Leu Phe Tyr Pro Phe Gly Gly Pro Asp
 145 150 155 160
 Phe Leu Phe Ala Asn Ala Phe Phe Pro Glu Met Asp Thr Tyr Val Leu
 165 170 175
 Ile Gly Leu Glu Pro Ala Gly Thr Ala Pro Lys Val Lys His Pro Ser
 180 185 190
 Ala Glu Thr Tyr Arg Leu Tyr Gln Asn Ala Val Ser Asn Val Leu Asn
 195 200 205
 Leu Ser Phe Phe Asn Asp Met Asp Lys Glu Leu Ala Asn Asp Thr Ile
 210 215 220
 Asp Gly Val Val Pro Ile Tyr Ser Leu Leu Met Ala Arg Gly Asn Arg
 225 230 235 240
 Lys Ile Val Ser Ile Gln Glu Val Trp Leu Ser Glu Thr Gly Asp Leu
 245 250 255
 Phe Glu Arg Lys Glu Gly Asp Thr Ile Arg Asn Thr Cys Ser Ala Gly
 260 265 270
 Met Glu Val Arg Phe Phe Arg Pro Gly Ala Ser Arg Leu Gln Thr Leu
 275 280 285
 Tyr Tyr Phe Cys Thr Asp Ile Ser Asn Glu Gly Leu Gln Ala Asn Arg
 290 295 300
 Pro Leu Gln Ala Phe Met Asp Arg Phe Asp Ala Glu Thr Thr Ala Thr
 305 310 315 320
 Phe Val Lys Ser Ala Ser Tyr Leu Met His Glu Pro Ala Phe Ser Arg
 325 330 335
 Ile Arg Glu Thr Ile Leu Gln Lys Ser Ser Ala Val Val Gln Asp Asp
 340 345 350
 Ser Ser Ile Pro Leu Ser Cys Phe Asp Pro Glu Val Trp Ser Val Thr
 355 360 365
 Leu Tyr Gly Thr Phe Tyr Lys Pro Ile Ser Thr Phe Ser Gln Tyr Leu
 370 375 380

Gln Pro Gln Leu Arg Asp Ala Tyr Gln Leu Gly Asp Pro Lys Pro Leu
 385 390 395 400
 Asn Phe Arg Ile Gly Tyr Ala Arg Gln Ser Asn Leu Gln Val Ala Arg
 405 410 415
 Arg Lys

<210> 8424
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 8424
 Ile Leu Gln Lys His Arg His Gln Phe Ile Asp His Phe His Asn Tyr
 1 5 10 15
 Ser Phe Ser Cys Leu His Arg Asn Leu Cys Ile Asn Lys Tyr Val Asn
 20 25 30
 Met Lys Arg Ile Ile Asn Thr Leu Glu Lys Met Pro Lys Trp Tyr Gly
 35 40 45
 Phe Leu Thr Ile Leu Leu Tyr Ser Leu Leu Leu Ala Glu Phe Leu Ile
 50 55 60
 Thr Thr Asn His Leu Val Asn Asn Asn Asn Leu Glu Thr Asp Arg Leu
 65 70 75 80
 Phe Val Ile Leu Ala Arg Met Ser Tyr Ile Ile Ile Val Leu Ser Ala
 85 90 95
 Ile Val Ile Trp Leu Ile Ser Thr Phe Leu Phe His Leu Thr Ala Ile
 100 105 110
 Leu Phe Asn Gly Tyr Ala Pro Phe Lys His Leu Leu Tyr Ile Ser Ser
 115 120 125
 Tyr Phe Tyr Ile Ile Pro Ala Ile Ser Val Phe Ile Ser Ile Phe Leu
 130 135 140
 Leu Asn Gln Lys Thr Glu Tyr Ser Thr Ser Asn Ala Val Thr Thr Leu
 145 150 155 160
 Gln Asn Asn Tyr Ser Leu Gly Leu Pro Ile Met Leu Val Asn Tyr Ser
 165 170 175
 Phe Ile Pro Tyr Tyr Leu Leu Cys Met Ile Leu Ile His His Leu Tyr
 180 185 190
 Lys Val Arg Leu Arg Tyr Ala Ile Ala Ser Val Val Ile Pro Ile Leu
 195 200 205
 Ser Val Trp Ala Ile Thr Lys Leu Phe Thr Leu Leu
 210 215 220

<210> 8425
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8425
 His Ser Lys Lys Leu Ile Leu Ala Asn Ser Ser Phe Lys Arg Ser Leu
 1 5 10 15
 Leu Phe Tyr Ile His Tyr Arg Ile Phe Thr Gln Phe Ile Tyr Ile Gln
 20 25 30
 Phe Phe His Ile Val Lys Ile Leu Val Arg Arg Trp Leu Phe Leu Asp
 35 40 45
 Phe Phe Val Lys Gln Tyr Phe Leu Leu Phe Asp Leu Leu Gly Gly Met
 50 55 60
 Val Cys Gln Gly Asn His Gly Arg Tyr Lys His Asn Phe Cys Leu Asn
 65 70 75 80
 Leu His Cys Asn Val Leu Phe Leu Leu Ala Val Phe Thr Cys Leu Val

Ile Leu Ile Leu Leu Phe Ile Ser Leu
 85 90 95
 100 105

<210> 8426
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 8426
 Ile Ser Lys Lys Val Lys Thr Asn Lys Lys Ala Ile Leu Gly Met Leu
 1 5 10 15
 Val Ala Ile Val Ile Ser Leu Gly Val Met Gly Gly Ile Asn Glu Asn
 20 25 30
 Lys Cys Asp Tyr Asn Leu Gln Glu Ala Thr Val Ala Met Thr Tyr Ala
 35 40 45
 Ala Gly Thr Gly Glu Tyr Gly Pro Glu Ala Ser Gly Lys Leu Ala Val
 50 55 60
 Gly Ala Leu Ala Met Gly Lys Val Thr Glu Thr Leu Gly Thr Cys Ala
 65 70 75 80
 Val Gly Leu Gly Trp Cys Pro Ala Gly Trp Ile Ala Gly Val Gly Ala
 85 90 95
 Ala Ala Ala Gly Leu
 100

<210> 8427
 <211> 740
 <212> PRT
 <213> B.fragilis

<400> 8427
 Lys Arg Lys Asn His Leu Gln Ile Ser Lys Lys Lys Ile Gln Arg Thr
 1 5 10 15
 Thr Met Arg Ile Asn Phe Pro Ser Tyr Ile Gln His Asp Gln Met Asp
 20 25 30
 Cys Gly Pro Ala Cys Leu Lys Ile Ile Ala Gln Asn Tyr Gly Lys Arg
 35 40 45
 Phe Ser Leu Lys Tyr Leu Arg Asp Arg Cys Tyr Ala Thr Arg Glu Gly
 50 55 60
 Val Ser Leu Phe Asp Ile Gly Arg Ala Ala Glu Glu Ile Gly Phe Arg
 65 70 75 80
 Thr Leu Ala Ile Lys Val Thr Phe Glu Asp Leu Ile Glu Lys Met Pro
 85 90 95
 Leu Pro Leu Ile Val His Trp Lys Gln Ser His Phe Val Val Val His
 100 105 110
 Lys Ile Thr Asn Arg Lys Val Tyr Ile Ser Asp Pro Ala Gln Gly Leu
 115 120 125
 Thr His Tyr Asn His Lys Glu Phe Arg Glu Ala Trp Glu Met Cys Asn
 130 135 140
 Gly Leu Gly Thr Ile Met Ile Leu Glu Thr Thr Pro Glu Phe His Asn
 145 150 155 160
 Met Asn Glu Met Glu Thr Arg Ala Ser Phe Ser His Phe Met Lys Tyr
 165 170 175
 Leu Lys Pro His His Arg Tyr Leu Gly Gln Val Ile Val Gly Met Val
 180 185 190
 Ala Gly Ile Leu Ile Gly Leu Leu Ser Pro Phe Ile Ser Gln Ser Ile
 195 200 205
 Val Asp Phe Gly Ile Gly Ser Gly Asn Ile Gln Phe Val Asn Thr Met
 210 215 220

Leu Ile Ala Gly Met Ile Leu Ala Phe Ser Ser Met Ala Ser Asp Phe
 225 230 235 240
 Ile Gln Ser Arg Leu Met Leu Tyr Val Ser Glu Arg Ile Asn Met Gly
 245 250 255
 Met Val Ser Asp Phe Leu Arg Lys Thr Met Ser Leu Pro Ile Thr Phe
 260 265 270
 Phe Glu Arg Lys Met Val Ser Asp Leu Leu Thr Arg Ile Asp Asp His
 275 280 285
 Gly Arg Ile Gln Ser Phe Ile Met Ser Thr Phe Leu Gly Ile Phe Ile
 290 295 300
 Asn Ile Leu Leu Phe Val Ile Tyr Ser Leu Leu Met Leu Tyr Tyr Glu
 305 310 315 320
 Ser Asn Met Phe Leu Val Phe Met Ile Gly Asn Thr Val Tyr Thr Gly
 325 330 335
 Trp Ile Phe Leu Phe Leu Lys Gln Arg Lys Lys Leu Asp Asn Gln Leu
 340 345 350
 Phe Gly Cys Arg Ala Thr Asn Gln Asn Asp Leu Leu Glu Leu Leu Glu
 355 360 365
 Asn Val Asn Glu Ile Lys Ile Asn Asn Ile Ala Asn Lys Arg Arg Trp
 370 375 380
 Lys Trp Glu Leu Ser Arg Phe Lys Ile Tyr Gly Leu Arg Val Lys Asn
 385 390 395 400
 Met Asn Leu Asp Gln Ile Glu Ala Thr Gly Ala Ser Phe Ile Ile His
 405 410 415
 Leu Gln Gly Leu Phe Ile Thr Tyr Ile Ala Ala Leu Asn Val Ile Glu
 420 425 430
 Gly Thr Met Thr Leu Gly Met Met Met Ala Ala Gln Tyr Ile Leu Gly
 435 440 445
 Gln Leu Asn Ala Pro Ile Lys Ser Met Ile Gly Tyr Val His Ser Leu
 450 455 460
 Gln Phe Ala Arg Ile Ser Leu Lys Arg Val Asn Glu Val Ile Trp Glu
 465 470 475 480
 Glu Glu Pro Glu Ile Ser Glu Ser Lys Val Ser Ile Pro Ile Glu Lys
 485 490 495
 Gly Val Lys Val Lys Asp Leu Asp Phe Tyr Tyr Asn Pro Asn Leu Asn
 500 505 510
 Lys Val Leu Asp Asn Ile Asn Leu Glu Ile Pro Glu Gly Lys Ile Thr
 515 520 525
 Ala Ile Val Gly Glu Ser Gly Ser Gly Lys Thr Thr Leu Leu Lys Leu
 530 535 540
 Leu Leu Arg Phe Tyr Lys Pro Thr Asn Gly Glu Ile Glu Val Gly Gly
 545 550 555 560
 Val Pro Leu Asp Asn Ile Asp Leu Tyr Arg Trp Arg Asn Ser Cys Gly
 565 570 575
 Ala Val Leu Gln Asp Gly Lys Leu Phe Asn Asp Thr Ile Leu Tyr Asn
 580 585 590
 Ile Thr Leu Glu Asp Glu Glu Met Asn Val Asn Gln Lys Gln Leu Val
 595 600 605
 Lys Ala Ile Gln Leu Ala Asn Ala Glu Asn Phe Ile Asn Ala Arg Pro
 610 615 620
 Leu Lys Leu Tyr Thr Pro Leu Gly Thr Asn Gly Ser Gly Leu Ser Gln
 625 630 635 640
 Gly Gln Lys Gln Arg Ile Leu Ile Ala Arg Ala Ile Tyr Lys Asn Pro
 645 650 655
 Asp Phe Ile Phe Leu Asp Glu Ala Thr Asn Ser Leu Asp Thr Asn Asn
 660 665 670
 Glu Lys Gln Ile Ser Lys Asn Leu Glu Thr Ile Leu Glu Gly Lys Thr
 675 680 685
 Ala Ile Val Ile Ala His Arg Leu Ser Thr Val Lys Asn Ala His Asn

690 695 700
 Ile Val Val Met Glu Lys Gly Lys Ile Val Glu Gln Gly Thr His Gln
 705 710 715 720
 Glu Leu Ile Asn Leu Lys Gly Ile Tyr Tyr Asp Leu Ile Ser Ser Gln
 725 730 735
 Leu Glu Ile Gly
 740

<210> 8428

<211> 445

<212> PRT

<213> B.fragilis

<400> 8428

Leu Asn Glu Lys His Met Arg Gln Phe Ile Leu Ile Met Ile Cys Ile
 1 5 10 15
 Leu Leu Gln Val Ile His Val His Ala Gly Ser Lys Asp Ile Thr Trp
 20 25 30
 Lys Trp Asp Tyr Ser Glu Ala Asp Asp Ile Phe Ile Asp Leu Leu Gly
 35 40 45
 Lys Ala Ala Thr Gly Phe Met Glu Thr Asn Thr Pro Asn Cys Tyr Gly
 50 55 60
 Gly Lys Leu Val Val Lys Leu Pro Glu Gly Leu His Phe Lys Gln Thr
 65 70 75 80
 Glu Ala Pro Ala Phe Leu Leu Ile Gly Asn Ala Glu Glu Ile Ala Phe
 85 90 95
 Asn Val Asp Val Asn Asp Ser Met Ala Ile Leu Ser Leu Lys Thr Ser
 100 105 110
 Ser Val Gln Thr Val Pro Ser Glu Ala Ile Asn Ile Thr Leu Asn Pro
 115 120 125
 Lys Ala Ile Lys Gly Lys Leu Arg Lys Gly Met Asn Thr Thr Gly Arg
 130 135 140
 Leu Ser Phe His Pro Ser Glu Ile Pro Thr Val Phe Lys Ser Pro Ile
 145 150 155 160
 Thr Gly Arg Thr Tyr His Leu Val Phe Asn Asp Glu Phe Asp Asp Gly
 165 170 175
 Val Ile Asp Thr Leu Lys Trp Asp Thr Arg Ser Arg Arg Ser Pro Phe
 180 185 190
 Thr Arg Arg Gly Met Tyr Gln Glu Lys Pro Tyr Tyr Val Leu Cys His
 195 200 205
 Glu Asp Trp Thr Lys Glu Leu His Gly Glu Leu Arg Leu Glu Val Ser
 210 215 220
 Lys Tyr Ser Thr Gln Asn Asn Val Val Met Thr Gly Gly Ile Leu Ser
 225 230 235 240
 Leu Gly Arg Phe Met Ala Arg Tyr Gly Tyr Tyr Glu Thr Lys Ala Ser
 245 250 255
 Phe Arg Asp Cys Ile Gly Glu Gly Tyr Trp Pro Ala Phe Trp Ile His
 260 265 270
 Phe Asp Glu Ala Asp Lys Tyr Gly Lys Gly Thr Glu Ile Asp Val Phe
 275 280 285
 Glu Tyr Ile Pro Lys Asp Lys Gln Ile Phe Gln Thr Leu His Trp Tyr
 290 295 300
 Lys Lys Gln Ala Met Glu Glu Gln Gln Ser Glu Val Gln His Ala Ala
 305 310 315 320
 Leu Asp Tyr Asp Lys Ser Gly Gln Phe Lys Glu His Arg Ser Ser Thr
 325 330 335
 Glu Tyr Phe Val Leu Asp Glu Ala Gln Ser Lys Glu His Thr Phe Ala
 340 345 350
 Val Glu Trp Thr Pro Glu Glu Leu Ile Phe Tyr Thr Asp Gly Lys Val


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      355              360              365
Thr Arg Arg Val Asn Arg Lys Asp Asp Pro Lys Gln Val Pro Ser Ala
 370              375              380
Tyr Gln Met Val Tyr Phe Ser Cys Ser Ala Gly Glu Trp Gly Gly Asn
385              390              395              400
Val Met Glu Asn Gln Val Pro Ala Tyr Val Tyr Phe Asp Tyr Cys Arg
      405              410              415
Cys Tyr Gln Glu Ser Asp Gln Asp Ala Ile Tyr Thr Val Lys Gly Asn
      420              425              430
Gly Met Lys Val Ser Ala Ser Arg Arg Val Gly Lys Leu
      435              440              445

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<210> 8429
 <211> 149
 <212> PRT
 <213> B.fragilis

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<400> 8429
Ile Cys Arg Asn Asn Met Ser Gly Arg Pro Ile His Ile His Val Leu
1              5              10              15
Ser Pro Asp Arg Pro Ile Asn Ile Lys Ile Phe Phe Met Ala Glu His
      20              25              30
Asn Leu Leu Gly Lys Ala Gly Glu Asp Ala Ala Val Asp Tyr Leu Glu
      35              40              45
Arg His Asp Tyr Val Ile Arg His Arg Asn Trp Arg Lys Gly His Phe
      50              55              60
Glu Leu Asp Ile Val Ala Ala Lys Asn Gly Glu Leu Ile Ile Val Glu
65              70              75              80
Val Lys Thr Arg Ser Asp Thr Asp Phe Ala Leu Pro Gln Asp Ala Val
      85              90              95
Thr Pro Gln Lys Ile Arg Arg Thr Val Ile Ala Ala Asp Thr Tyr Ile
      100              105              110
Lys Leu Phe Gln Ile Asp Glu Pro Val Arg Phe Asp Ile Ile Thr Val
      115              120              125
Ile Gly Lys Thr Gly Asn Phe Arg Ile Glu His Ile Lys Glu Ala Phe
      130              135              140
Tyr Pro Pro Leu Phe
145

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<210> 8430
 <211> 120
 <212> PRT
 <213> B.fragilis

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<400> 8430
Ser Phe Met Asn Ile Glu Ser Ala Arg Glu Tyr Cys Leu Arg Lys Lys
1              5              10              15
Ala Val Thr Glu Cys Phe Pro Phe Asp Glu Tyr Ser Leu Val Met Lys
      20              25              30
Val Met Asp Lys Met Phe Ala Leu Ile Asp Leu Glu Gly Ala Asn Thr
      35              40              45
Ile Ser Leu Lys Cys Asp Pro Asp Tyr Ala Ile Glu Leu Arg Glu His
      50              55              60
Tyr Ser Ala Ile Glu Gly Ala Tyr His Phe His Lys Lys Tyr Trp Asn
65              70              75              80
Gln Val Tyr Phe Asp Arg Asp Ala Asp Asp Lys Leu Ile Lys Gln Leu
      85              90              95
Ile Asp His Ser Tyr Asp Glu Val Met Lys Lys Phe Thr Lys Lys Leu
      100              105              110

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Arg Thr Glu Tyr Asp Ala Leu Pro
115 120

<210> 8431

<211> 232

<212> PRT

<213> B.fragilis

<400> 8431

```

Ile Lys Met Lys Lys Met Lys Thr Leu Thr Leu Phe Leu Ser Leu Leu
1      5      10      15
Phe Ser Phe Pro Phe Val Leu Ser Ala Gln Met Val Gly Glu Thr Leu
      20      25      30
Gln Lys Val Ser Ala Ala Leu Asp Asn Arg Gln Trp Asp Gln Ala Val
      35      40      45
Thr Leu Phe Arg Gln Ala Val Asn Thr Asn Val Glu Lys Ala Glu Met
      50      55      60
Phe Tyr Trp Thr Gly Val Asp Lys Ser Leu Glu Val Ser Ser Arg Met
      65      70      75      80
Gly Arg Glu Leu Ala Ala Tyr Tyr Lys Lys Ser Arg Ser Tyr Asp Lys
      85      90      95
Ala Tyr Leu Phe Tyr Lys Glu Leu Leu Gln Lys Ser Pro Asn Asp Val
      100      105      110
Asn Cys Leu Val Ser Cys Ala Glu Met Glu Val Cys Arg Gly Arg Glu
      115      120      125
Ser Glu Ala Leu Glu Thr Tyr Arg Lys Val Leu Ser Leu Asp Ala Asp
      130      135      140
Asn Leu Ala Ala Asn Ile Phe Ile Gly Asn Tyr Leu Tyr Leu Lys Ala
      145      150      155      160
Glu Arg Glu Lys Lys Gln Leu Glu Ala Asp Tyr Lys Lys Ile Ser Ala
      165      170      175
Pro Thr Arg Met Gln Tyr Ala Arg Tyr Arg Asp Gly Leu Ser Arg Val
      180      185      190
Met Ser Thr Gly Tyr Gly Lys Ala Arg Glu Tyr Leu Gln Lys Val Ile
      195      200      205
Ser Gln Phe Pro Ser Thr Glu Ala Gln Lys Thr Leu Glu Arg Ile Lys
      210      215      220
Leu Ile Glu Lys Glu Val Asn Arg
      225      230

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<210> 8432

<211> 690

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (45), (434), (449), (679), (683), (684), (685), (686), (687)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8432

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Tyr Arg Arg Lys Ser Thr Arg Thr Phe His Pro Tyr Leu Gly Leu Met
1      5      10      15
His Thr Ala Glu Glu Phe Asn Asn Leu Ile Val Lys Glu Glu Lys Arg
      20      25      30
Pro His His Pro Phe Ser Val Ile Ser Asp Glu Pro Xaa Trp Gly Pro
      35      40      45
Ala Asp Ile Lys Ser Tyr Met Lys Met Asn Gly Val Pro Met Val Gly
      50      55      60

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Ile Val Val Ile Pro Gln Arg Gly Ala Asn His Ile Lys Ile Ala Asp
 65 70 75 80
 Ala Val Tyr Glu Arg Met Glu Lys Met Gln Lys Asp Leu Pro Glu Asp
 85 90 95
 Val Lys Tyr Ser Tyr Gly Phe Asp Asn Thr Lys Phe Ile Arg Ala Ser
 100 105 110
 Ile Ser Glu Val Lys Glu Thr Val Tyr Val Ala Phe Ile Leu Val Ile
 115 120 125
 Ile Ile Ile Phe Leu Phe Leu Arg Asp Trp Arg Val Thr Leu Val Pro
 130 135 140
 Cys Ile Val Ile Pro Val Ser Leu Ile Gly Ala Phe Phe Val Met Tyr
 145 150 155 160
 Leu Ala Asp Phe Ser Ile Asn Val Leu Ser Met Leu Ala Val Val Leu
 165 170 175
 Ala Val Gly Leu Val Val Asp Asp Ala Ile Val Met Thr Glu Asn Ile
 180 185 190
 Tyr Val Arg Ile Glu Lys Gly Met Pro Pro Lys Glu Ala Gly Ile Glu
 195 200 205
 Gly Ala Lys Glu Ile Phe Phe Ala Val Ile Ser Thr Thr Ile Thr Leu
 210 215 220
 Val Ala Val Phe Phe Pro Ile Val Phe Met Glu Gly Met Thr Gly Arg
 225 230 235 240
 Leu Phe Arg Glu Phe Ser Ile Val Ile Ser Gly Ser Val Ile Ile Ser
 245 250 255
 Ser Phe Ala Ala Leu Thr Phe Thr Pro Met Leu Ala Thr Lys Leu Leu
 260 265 270
 Val Lys Arg Glu Lys Gln Asn Trp Phe Tyr Leu Lys Thr Glu Pro Phe
 275 280 285
 Phe Glu Gly Met Ser Arg Leu Tyr Ser Arg Ser Leu Ala Val Phe Leu
 290 295 300
 His Lys Arg Trp Ile Ala Leu Pro Phe Val Ala Ile Thr Ile Gly Ile
 305 310 315 320
 Ile Ala Phe Leu Trp Asn Tyr Ile Pro Ala Glu Met Ala Pro Leu Glu
 325 330 335
 Asp Arg Ser Gln Ile Ser Ile Asn Thr Arg Gly Ala Glu Gly Val Thr
 340 345 350
 Tyr Glu Tyr Ile Arg Asp Tyr Thr Glu Asp Ile Asn Asp Leu Val Asp
 355 360 365
 Ser Ile Val Pro Asp Ala Glu Ser Val Thr Ala Arg Val Ser Ser Gly
 370 375 380
 Ser Gly Asn Val Arg Ile Thr Leu Lys Asp Met Lys Asp Arg Asp Tyr
 385 390 395 400
 Thr Gln Met Asp Val Ala Glu Lys Leu Ser Ala Ala Val Gln Thr Lys
 405 410 415
 Thr Met Ala Arg Ser Phe Val Gln Gln Ser Ser Ser Phe Gly Gly Arg
 420 425 430
 Arg Xaa Gly Met Pro Val Gln Tyr Val Leu Gln Ala Thr Asn Ile Glu
 435 440 445
 Xaa Leu Gln Glu Val Leu Pro Lys Phe Met Ala Lys Val Tyr Glu Asn
 450 455 460
 Pro Val Phe Gln Met Ala Asp Val Asp Leu Lys Phe Ser Lys Pro Glu
 465 470 475 480
 Ala Arg Ile Asn Ile Asn Arg Asp Lys Ala Ser Ile Met Gly Val Ser
 485 490 495
 Thr Arg Asn Ile Ala Gln Thr Leu Gln Tyr Gly Leu Ser Gly Gln Arg
 500 505 510
 Met Gly Tyr Phe Tyr Met Asn Gly Lys Gln Tyr Glu Ile Leu Gly Glu
 515 520 525
 Ile Asn Arg Gln Gln Arg Asn Thr Pro Ala Asn Leu Lys Ser Ile Tyr

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      530                      535                      540
Ile Arg Ser Asp Lys Gly Asp Met Val Gln Leu Asp Asn Leu Ile Glu
545                      550                      555                      560
Leu Thr Gly Gly Ile Ala Pro Pro Lys Leu Tyr Arg Tyr Asn Arg Phe
      565                      570                      575
Val Ser Ala Thr Val Ser Ala Gly Leu Ala Glu Gly Lys Thr Ile Gly
      580                      585                      590
Gln Gly Leu Asp Glu Met Asp Lys Ile Ala Lys Glu Thr Leu Asp Asp
      595                      600                      605
Thr Phe Arg Thr Ala Leu Thr Gly Asp Ser Lys Glu Tyr Arg Glu Ser
      610                      615                      620
Ser Ser Ser Leu Met Phe Ala Phe Ile Leu Ala Ile Val Leu Ile Tyr
625                      630                      635                      640
Leu Ile Leu Ala Ala Gln Phe Glu Ser Phe Lys Asp Pro Leu Ile Ile
      645                      650                      655
Met Leu Thr Val Pro Leu Ala Ile Ala Gly Ala Leu Val Phe Thr Thr
      660                      665                      670
Gly Leu Glu Gly Ser Asp Xaa Cys Ser Cys Xaa Xaa Xaa Xaa Xaa Arg
      675                      680                      685
Ser Ile
      690

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<210> 8433
<211> 186
<212> PRT
<213> B.fragilis

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<400> 8433
Ala Met Arg Lys Asn Phe Ser Thr Ile Leu Ile Val Gly Ala Ala Leu
1                      5                      10                      15
Leu Val Ala Ser Cys Val Gln Gln Lys Gly Ser Phe Ser Pro Val Asp
      20                      25                      30
Tyr Val Asn Pro Leu Met Gly Thr Glu Ser Thr Tyr Ala Phe Ser His
      35                      40                      45
Gly Asn Thr Tyr Pro Ala Val Ala Val Pro Trp Gly Met Asn Phe Trp
      50                      55                      60
Ser Pro Gln Thr Gly Glu Asn Gly Ser Gly Trp Met Tyr Thr Tyr Thr
65                      70                      75                      80
Asp Ser Leu Ile Arg Gly Phe Arg Gln Thr His Gln Pro Ser Pro Trp
      85                      90                      95
Ile Asn Asp Tyr Gly Thr Phe Ser Val Met Pro Leu Ser Gly Val Leu
      100                      105                      110
Lys Met Asp His Lys Glu Arg Gly Val Pro Phe Ser His Thr Gln Glu
      115                      120                      125
Glu Ala Ala Pro Tyr Ser Tyr Ser Val Thr Phe Ala Asp Gly Leu Arg
      130                      135                      140
Thr Glu Leu Ser Ala Thr Ser Arg Gly Ala Val Phe Glu Val Thr Phe
145                      150                      155                      160
Pro Gln Asp Ser Ala Gln Tyr Ile Val Val Asp Ala Tyr Asn Gly Gly
      165                      170                      175
Ser Ala Leu Thr Ile Asp Arg Glu Asn Arg
      180                      185

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<210> 8434
<211> 525
<212> PRT
<213> B.fragilis

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<400> 8434

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Lys Asn Thr Asp Ser Met Asn Val Asn Lys Pro Thr Thr Glu Lys Lys
 1 5 10 15
 Leu Ile Asp Leu Asn Asn Asp Ile Ile His Asn Phe Asp Val Ser Ile
 20 25 30
 Val Met Ser Phe Tyr Lys Arg Tyr Thr Glu Phe Lys Lys Val Leu Pro
 35 40 45
 His Asn Ala Pro Tyr Leu Gln Arg Asn Gly Ile Glu Val Ile Ile Val
 50 55 60
 Leu Asp Asp Pro Asp Glu Lys Ser Glu Leu Leu Met Leu Leu Gln Asn
 65 70 75 80
 Tyr Pro Phe Ile Asn Trp Lys Leu Ile Ile Asn Glu Arg Lys His Ala
 85 90 95
 Pro Arg Asn His Ala Ser Val Leu Asn Val Gly Leu Lys His Ala Thr
 100 105 110
 Lys Lys Tyr Ile Leu Gln Ile Asp Pro Glu Val Glu Phe Leu Thr Asp
 115 120 125
 Ile Ile Trp Gln Met Arg Asp Ala Ile Glu Lys Tyr Pro Met His Tyr
 130 135 140
 Ile Leu Ala Met Met Ala Tyr Val Pro Tyr Glu Gln Glu Leu Thr Glu
 145 150 155 160
 Asn Asn Ile Lys Glu Leu Asp Phe Ile Pro Trp Gly Asn Leu Met Val
 165 170 175
 Glu Arg Asn His Leu Tyr Lys Leu His Gly Tyr Asp Glu Thr Phe Ile
 180 185 190
 Thr Trp Gly Gly Glu Asp Asn Asn Met Arg Ala Arg Leu Asp Met Ser
 195 200 205
 Gly Ile Lys Lys Phe Ile Leu Pro Glu Ala Lys Thr Ile His Arg Glu
 210 215 220
 Lys Asn Tyr Asp Pro Asn Glu Arg Ser Lys Arg Ile Asn Lys His Ser
 225 230 235 240
 Ile Ser Asp Trp Arg Lys Met Asn Tyr Pro Ser Glu Ala Ile Ala Asn
 245 250 255
 Lys Asp Ile Trp Gly Ser Glu Phe Asn Lys Val Ile Tyr Asp Trp Gln
 260 265 270
 Asp Asn Gln Tyr Ala Lys Asp Leu Cys Tyr Thr Tyr Leu Gln Gln Phe
 275 280 285
 Ile Gly Phe Glu Ile Arg His Pro Ala Ala Phe Arg Lys Arg His Lys
 290 295 300
 Lys Ile Val Leu Cys Gln Ala Tyr Asn Glu Glu Lys Leu Ile Glu Gly
 305 310 315 320
 Phe Leu Thr Asn Met Ala Ser Tyr Phe Asp Gly Ile Ile Leu Leu Asp
 325 330 335
 Asp Glu Ser Thr Asp Arg Thr Trp Asp Leu Ala Ile His Asp Lys Ile
 340 345 350
 Leu Leu Lys Val Lys Lys Lys Arg Ser Gly Phe Asn Asp Leu Glu Asn
 355 360 365
 Arg Asn Ile Leu Leu Asp Leu Ser Ala Phe Phe Gln Ser Glu Trp Phe
 370 375 380
 Cys Phe Met Asp Ile Asp Glu Arg Phe Asp Glu Arg Phe Thr Asn Phe
 385 390 395 400
 Ser Glu Phe Glu Asn Asn Lys Glu Ile His Val Val Ser Phe Arg Gly
 405 410 415
 Val Tyr Leu Trp Asn Asp Glu Gln Ser Tyr Lys Gly Asp Ile Pro Asn
 420 425 430
 Ser Asn Lys Gly Ile Leu Thr Val Tyr Arg Met Phe Arg Pro Ile Gly
 435 440 445
 His Thr His Ile Asn Thr His Lys Lys Leu His Phe Ile Ala Thr Pro
 450 455 460
 Tyr Phe Thr Asn Thr Trp Gln Ser Asn Ile Leu Phe Lys Asp Tyr Gly

4590

465 470 475 480
 Ser Met Lys Glu Asn Asp Arg Ile Arg Lys Tyr Glu Arg Tyr Ile Gln
 485 490 495
 Glu Asp Gln Gln Lys Asp Met Ser Ser Gly Tyr Asp Tyr Leu Leu Asn
 500 505 510
 Ser Glu Asn Leu Tyr Gln Leu Asp Lys Ile Glu Glu Tyr
 515 520 525

<210> 8435
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8435
 Glu Asn Tyr Asp Ile Phe Ala Thr Lys Thr Lys Lys Cys Leu Thr Gly
 1 5 10 15
 Asn Asp Arg Ile Asp Tyr Asp Cys His Thr Leu Glu Glu Ile Gly Leu
 20 25 30
 Thr Leu Leu Lys Asn Ser His Ser Leu Phe Phe Ser Val Phe Leu Ile
 35 40 45
 Ser Gln Lys Ala Tyr Ile Arg Ser Ser Val Ser Phe Gln Val Arg Cys
 50 55 60
 Arg Asp Arg Gln Gln Gly Ile Phe Val Ser
 65 70

<210> 8436
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 8436
 Asp Arg Lys Glu Pro Phe Gln Lys Glu Thr Ile Asn Gln His Thr Ser
 1 5 10 15
 Met Glu Ile Lys Ile Gln Ser Leu Glu Gln Ile His Glu Ala Ala Arg
 20 25 30
 Glu Phe Ile Ser Ala Met Gly Asp Asn Thr Val Phe Ala Leu Tyr Gly
 35 40 45
 Lys Met Gly Ala Gly Lys Thr Phe Val Lys Ala Leu Cys Glu Glu
 50 55 60
 Leu Gly Val Ser Asp Val Ile Thr Ser Pro Thr Phe Ala Ile Val Asn
 65 70 75 80
 Glu Tyr Arg Ser Asp Glu Asn Gly Glu Leu Ile Tyr His Phe Asp Phe
 85 90 95
 Tyr Arg Ile Lys Lys Leu Ser Glu Val Tyr Asp Met Gly Tyr Glu Asp
 100 105 110
 Tyr Phe Tyr Ser Gly Ala Leu Cys Phe Ile Glu Trp Pro Glu Leu Val
 115 120 125
 Glu Glu Leu Leu Pro Gly Asp Ala Val Lys Val Thr Ile Glu Glu Leu
 130 135 140
 Glu Asp Gly Thr Arg Lys Ile Val Ile Asn Asp
 145 150 155

<210> 8437
 <211> 531
 <212> PRT
 <213> B.fragilis

<400> 8437
 Ile Thr Met Asp Asn Thr Arg Ser Val Tyr Gly Ile Asp Leu Gly Thr

1		5		10		15
Thr	Tyr	Ser	Cys	Ile	Ala	Gln
		20		25		30
Leu	Arg	Asn	Phe	Glu	Gly	Asp
		35		40		45
Glu	Asp	Met	Asp	His	Val	Val
		50		55		60
Ala	Thr	Glu	Pro	Thr	Lys	Thr
		65		70		75
Val	Asp	Asp	Ser	Phe	Asp	Lys
		85		90		95
Asp	Pro	Thr	Glu	Ile	Ser	Ala
		100		105		110
Ala	Asn	Asp	Leu	Gly	Asp	Asn
		115		120		125
Thr	Cys	Pro	Ala	Tyr	Phe	Gly
		130		135		140
Ala	Gly	Glu	Ile	Ala	Gly	Leu
		145		150		155
Thr	Ala	Ala	Ala	Ile	Ser	Tyr
		165		170		175
Val	Leu	Val	Tyr	Asp	Leu	Gly
		180		185		190
Asn	Val	Asn	Gly	Gly	Ala	Ile
		195		200		205
His	Leu	Gly	Gly	Val	Asp	Trp
		210		215		220
Ala	Ala	Phe	Asn	Glu	Gln	Asn
		225		230		235
Leu	Asp	Leu	Lys	Tyr	Glu	Leu
		245		250		255
Val	Leu	Thr	Ala	Lys	Gln	Thr
		260		265		270
Asn	Ser	Ala	Arg	Ile	Glu	Ile
		275		280		285
Glu	Arg	Lys	Leu	Asp	Glu	Thr
		290		295		300
Ile	Ala	Lys	Glu	Lys	Gly	Tyr
		305		310		315
Gly	Gly	Ser	Ser	Arg	Met	Pro
		325		330		335
Phe	Asn	Cys	Asp	Ala	Lys	Leu
		340		345		350
Gly	Ala	Ala	Ile	Tyr	Ala	Met
		355		360		365
Asp	Tyr	Glu	Glu	Gly	Glu	Ser
		370		375		380
Asp	Arg	Thr	Thr	Val	Val	Asn
		385		390		395
Val	Ile	Ile	Glu	Gly	Gln	Ser
		405		410		415
Ser	Ser	Leu	Pro	Thr	Lys	Arg
		420		425		430
Asn	Gln	Arg	Gly	Val	Ser	Val
		435		440		445
Met	Glu	Thr	Glu	Ser	Ile	Val
		450		455		460
Asp	His	Thr	Leu	Lys	Leu	Ser
		465		470		475
						480

Ser Val Thr Tyr Gln Ile Asp Gln Glu Gly Ile Leu His Gly Leu Ala
 485 490 495
 Tyr Val Glu Asn Asp Lys Leu Glu Phe Asp Leu Lys Ile Thr Gly Val
 500 505 510
 Lys Cys Glu Glu Glu Leu Arg Lys Ser Lys Ala Ile Ile Asp Lys Ala
 515 520 525
 Ser Val Glu
 530

<210> 8438

<211> 417

<212> PRT

<213> B.fragilis

<400> 8438

Lys His Pro Asp Ile Lys Gly Ile Gly Ile His Gly Thr His Asp Pro
 1 5 10 15
 Leu Ser Ile Gly Thr Arg Ser Asp Pro Arg Met His Ser Asn Gln Lys
 20 25 30
 Phe Arg Ile Arg Ala Ile Ser Ile Phe Asn Pro Ser Ala Asn Asn Cys
 35 40 45
 Tyr His His Ala Leu Cys Lys Arg His Lys Asn Pro Val Asn Asn Lys
 50 55 60
 Pro Met Lys Thr Phe Lys Arg Phe Leu Phe Ile Cys Ile Gly Leu Phe
 65 70 75 80
 Ile Ile Val Leu Ser Thr Gln Ala Leu Glu Lys Tyr Glu Val Thr Ala
 85 90 95
 Asn Thr Phe Leu Asn Ile Arg Ser His Gly Ser Thr Asn Ala Pro Val
 100 105 110
 Ile Gly Thr Ile Asn His Gly Gly Ile Val Asn Val Glu Ser Ile Asp
 115 120 125
 Gly Glu Trp Ala Lys Val Ser Phe Asn Gly Gly Tyr Gly Tyr Val Ser
 130 135 140
 Thr Thr Tyr Ile Arg Pro Val Thr Pro Thr Pro Pro Ala Lys Ala Pro
 145 150 155 160
 Thr Asn Thr Leu Ser Asp Trp Phe Arg Gln Thr Asn Tyr Asp Cys Arg
 165 170 175
 Pro Leu Val Tyr Ile Ile Leu Gly Leu Ser Ile Val Leu Phe Ile Leu
 180 185 190
 Arg Met Arg Arg Gly Glu Ser Thr Pro Leu Glu Asp Ser Glu His Thr
 195 200 205
 Ile Asn Leu Ser Leu Phe Ile Thr Val Cys Leu Leu Glu Leu Phe Tyr
 210 215 220
 Val Phe Ser Met Gly Ala Asn Ser Ile Trp Phe Cys Thr Pro Asp Lys
 225 230 235 240
 Ile Gly Trp Leu Trp Thr Ile Ile Asn Phe Phe Ile Phe Gly Ala Val
 245 250 255
 Val Phe Asn Gln Trp Met Cys Phe Phe Asn Thr Leu Asn Asp Val Gln
 260 265 270
 Tyr Asn Ser Tyr Ala Thr Phe Asn Trp Thr Trp Gly Ile Tyr Thr Trp
 275 280 285
 Gly Ile Cys Ile Ile Gly Ala Ile Ile Cys Gly Phe Phe Phe Val Gly
 290 295 300
 Phe Leu Pro Val Val Gly Ile Gly Phe Leu Val Gly Gln Ser Val Gln
 305 310 315 320
 Thr Gly Ile Ile Phe Asn Lys Val Leu Pro Lys Gly Gly Trp Lys His
 325 330 335
 Ala Cys Ile Cys Thr Leu Thr Tyr Leu Ile Gly Ser Thr Ala Thr Val
 340 345 350


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<210> 8439
<211> 1072
<212> PRT
<213> B.fragilis
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Leu	Arg	Asp	Cys	Trp	Arg	Lys	Gln	Lys	Lys	Pro	Ser	Asn	Gly	Ile	Arg
1				5					10					15	
Thr	Cys	Leu	Glu	Thr	Ile	Ile	Ile	Trp	Lys	Cys	Ser	Ala	Ile	Lys	Arg
			20					25					30		
Gln	Gly	Leu	Lys	Pro	Asn	His	Glu	Ala	Tyr	Pro	Leu	Gln	Val	Asn	Val
			35				40					45			
Asn	Lys	His	Leu	Ile	Glu	Tyr	Ser	Lys	Lys	Tyr	Asn	Val	Lys	Leu	Ile
						55					60				
Cys	Thr	Asn	Asp	Val	His	Phe	Val	Asn	Glu	Glu	His	Ala	Glu	Ala	His
65					70					75					80
Asp	Arg	Leu	Ile	Cys	Leu	Ser	Thr	Gly	Lys	Asp	Leu	Asp	Asp	Pro	Asn
				85					90					95	
Arg	Met	Tyr	Tyr	Thr	Lys	Gln	Glu	Trp	Met	Lys	Thr	Lys	Ala	Glu	Met
			100					105					110		
Asn	Glu	Leu	Phe	Ala	Asp	Val	Pro	Glu	Ala	Leu	Ser	Asn	Thr	Leu	Glu
			115					120				125			
Ile	Leu	Asp	Lys	Val	Glu	Tyr	Tyr	Ser	Ile	Asp	His	Ala	Pro	Ile	Met
			130			135					140				
Pro	Thr	Phe	Ala	Ile	Pro	Glu	Asp	Phe	Gly	Thr	Glu	Glu	Gly	Tyr	Arg
145					150					155					160
Gln	Lys	Tyr	Thr	Glu	Lys	Asp	Leu	Phe	Asp	Glu	Phe	Thr	Gln	Asp	Glu
				165					170					175	
Asn	Gly	Asn	Val	Val	Leu	Ser	Glu	Glu	Ala	Ala	Lys	Asp	Lys	Ile	Lys
			180					185					190		
Arg	Leu	Gly	Gly	Tyr	Asp	Lys	Leu	Tyr	Arg	Ile	Lys	Leu	Glu	Ala	Asp
			195				200					205			
Tyr	Leu	Lys	Lys	Leu	Thr	Phe	Asp	Gly	Ala	Lys	Lys	Phe	Tyr	Gly	Asp
						215					220				
Pro	Leu	Ser	Pro	Glu	Val	Lys	Glu	Arg	Leu	Val	Phe	Glu	Leu	His	Ile
225					230					235					240
Met	Lys	Thr	Met	Gly	Phe	Pro	Gly	Tyr	Phe	Leu	Ile	Val	Gln	Asp	Phe
				245					250					255	
Ile	Ala	Ala	Gly	Arg	Asn	Met	Gly	Val	Ser	Ile	Gly	Pro	Gly	Arg	Gly
			260					265					270		
Ser	Ala	Ala	Gly	Ser	Ala	Val	Ala	Tyr	Cys	Leu	Gln	Ile	Thr	Lys	Ile
			275				280					285			
Asp	Pro	Ile	Lys	Tyr	Asp	Leu	Leu	Phe	Glu	Arg	Phe	Leu	Asn	Pro	Asp
						295					300				
Arg	Ile	Ser	Leu	Pro	Asp	Ile	Asp	Ile	Asp	Phe	Asp	Asp	Asp	Gly	Arg
305					310					315					320
Gly	Glu	Val	Leu	Arg	Trp	Val	Thr	Glu	Lys	Tyr	Gly	Gln	Glu	Lys	Val
				325						330				335	

Ala His Ile Ile Thr Tyr Gly Thr Met Ala Thr Lys Leu Ala Ile Lys
 340 345 350
 Asp Val Ala Arg Val Gln Lys Leu Pro Leu Ala Glu Ser Asp Arg Leu
 355 360 365
 Ala Lys Leu Val Pro Asp Lys Ile Pro Asp Lys Lys Leu Asn Leu Lys
 370 375 380
 Asn Ala Ile Glu Tyr Val Pro Glu Leu Gln Ala Ala Glu Ala Ser Pro
 385 390 395 400
 Asp Pro Leu Val Arg Asp Thr Met Lys Tyr Ala Lys Met Leu Glu Gly
 405 410 415
 Asn Val Arg Gly Thr Gly Val His Ala Cys Gly Thr Ile Ile Cys Arg
 420 425 430
 Asp Asp Ile Thr Asp Trp Val Pro Val Ser Thr Ala Asp Asp Lys Glu
 435 440 445
 Thr Gly Glu Lys Met Leu Val Thr Gln Tyr Glu Gly Ser Val Ile Glu
 450 455 460
 Asp Thr Gly Leu Ile Lys Met Asp Phe Leu Gly Leu Lys Thr Leu Ser
 465 470 475 480
 Ile Ile Lys Glu Ala Val Glu Asn Ile Arg Leu Ser Lys Gly Met Glu
 485 490 495
 Leu Asp Ile Asp Ser Ile Ser Ile Glu Asp Pro Ala Thr Tyr Lys Leu
 500 505 510
 Tyr Ser Asp Gly Arg Thr Ile Gly Thr Phe Gln Phe Glu Ser Ala Gly
 515 520 525
 Met Gln Lys Tyr Leu Arg Glu Leu Gln Pro Ser Thr Phe Glu Asp Leu
 530 535 540
 Ile Ala Met Asn Ala Leu Tyr Arg Pro Gly Pro Met Asp Tyr Ile Pro
 545 550 555 560
 Asp Phe Ile Asp Arg Lys His Gly Arg Lys Pro Ile Glu Tyr Asp Ile
 565 570 575
 Pro Val Met Glu Lys Tyr Leu Lys Asp Thr Tyr Gly Ile Thr Val Tyr
 580 585 590
 Gln Glu Gln Val Met Leu Leu Ser Arg Leu Leu Ala Asp Phe Thr Arg
 595 600 605
 Gly Glu Ser Asp Ala Leu Arg Lys Ala Met Gly Lys Lys Leu Arg Asp
 610 615 620
 Lys Leu Asp His Met Lys Pro Lys Phe Val Glu Gly Gly Arg Lys Asn
 625 630 635 640
 Gly His Asp Pro Lys Val Leu Glu Lys Ile Trp Ala Asp Trp Glu Lys
 645 650 655
 Phe Ala Ser Tyr Ala Phe Asn Lys Ser His Ala Thr Cys Tyr Ser Trp
 660 665 670
 Val Ala Tyr Gln Thr Ala Tyr Leu Lys Ala Asn Tyr Pro Ala Glu Tyr
 675 680 685
 Met Ala Ala Val Met Ser Arg Ser Leu Ser Asn Ile Thr Asp Ile Thr
 690 695 700
 Lys Leu Met Asp Glu Cys Lys Met Met Gly Val Gln Thr Leu Gly Pro
 705 710 715 720
 Asp Val Asn Glu Ser Asn Leu Lys Phe Thr Val Asn Arg Asn Gly Asn
 725 730 735
 Ile Arg Phe Gly Leu Gly Ala Val Lys Gly Val Gly Glu Ala Ala Val
 740 745 750
 Gln Ser Ile Met Glu Glu Arg Lys Glu Asn Gly Pro Phe Lys Gly Ile
 755 760 765
 Phe Asp Phe Val Gln Arg Val Asn Leu Asn Ala Cys Asn Lys Lys Asn
 770 775 780
 Met Glu Cys Leu Ala Leu Ala Gly Gly Phe Asp Ser Phe Pro Glu Leu
 785 790 795 800
 Lys Arg Glu Gln Tyr Phe Ala Val Asn Ser Lys Gly Glu Thr Phe Leu

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<210> 8440
<211> 273
<212> PRT
<213> B.fragilis
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Leu	Leu	Asn	Arg	Met	Asn	Leu	Leu	Gln	Tyr	Thr	Phe	Phe	Gln	His	Ala
1				5					10					15	
Leu	Leu	Gly	Ser	Leu	Leu	Ala	Ser	Ile	Ala	Cys	Gly	Ile	Ile	Gly	Thr
			20					25					30		
Tyr	Ile	Val	Thr	Arg	Arg	Leu	Val	Phe	Ile	Ser	Gly	Gly	Ile	Thr	His
			35				40					45			
Ala	Ser	Phe	Gly	Gly	Ile	Gly	Leu	Gly	Leu	Tyr	Ala	Gly	Ile	Ser	Pro
			50			55					60				
Ile	Leu	Ser	Ala	Ala	Val	Phe	Ser	Val	Leu	Ser	Ala	Phe	Gly	Val	Glu
65					70					75					80
Trp	Leu	Ser	Lys	Arg	Lys	Asp	Met	Arg	Glu	Asp	Ser	Ala	Ile	Ala	Met
				85					90					95	
Phe	Trp	Thr	Leu	Gly	Met	Ala	Leu	Gly	Ile	Met	Phe	Ser	Phe	Leu	Ser
			100					105					110		
Pro	Gly	Phe	Ala	Pro	Asp	Leu	Ser	Ala	Tyr	Leu	Phe	Gly	Asn	Ile	Leu
			115				120					125			
Thr	Ile	Thr	Gln	Thr	Asp	Leu	Leu	Leu	Gly	Ile	Ile	Leu	Ala	Ile	Leu
			130			135					140				
Leu	Ile	Leu	Phe	Phe	Thr	Leu	Phe	Ile	His	Pro	Ile	Ile	Tyr	Val	Ala

145 150 155 160
 Phe Asp Arg Glu Phe Ala Arg Ser Gln Gly Ile Pro Val Val Val Leu
 165 170 175
 Glu Tyr Ile Leu Met Met Phe Ile Ala Leu Thr Ile Val Ser Cys Leu
 180 185 190
 Arg Met Val Gly Ile Val Leu Ala Ile Ser Leu Leu Thr Ile Pro Gln
 195 200 205
 Met Thr Ala Asn Leu Phe Thr Asn Lys Phe Lys Arg Ile Ile Trp Leu
 210 215 220
 Ser Ile Ala Ile Gly Tyr Leu Ser Cys Leu Gly Gly Leu Leu Ile Ser
 225 230 235 240
 Tyr Arg Leu Asn Val Pro Ser Gly Ala Ser Ile Ile Phe Phe Ser Ile
 245 250 255
 Leu Ile Tyr Ile Ala Cys Lys Ile Gly Lys Ser Leu Phe Arg Lys Lys
 260 265 270
 Gln

<210> 8441
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 8441
 Glu Ser Thr Arg Ile Pro Ser Ser Lys Arg Val Leu Ala Phe Pro Ala
 1 5 10 15
 Arg Met Cys Ala Ser Ala Ser Ser Arg Tyr Ile Thr Ala Ile Ser Ile
 20 25 30
 Phe Ser Cys Asp Ser Ser Ile Ile Val Phe Thr Ser Thr Ile Leu Leu
 35 40 45
 Ser Ile Tyr Lys Ile Gly Thr Leu Ile His Phe Glu Asn Lys Ser Arg
 50 55 60
 Leu Phe Phe Asp Tyr Leu Gln Leu Ser Ile Glu Arg Asn Ala Leu Pro
 65 70 75 80
 Asp Val Ser Leu Ser Lys
 85

<210> 8442
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 8442
 Gly Val Arg Arg Met Leu Asp Asp Ser Tyr Phe Met Lys Gln Ala Leu
 1 5 10 15
 Ile Glu Ala Val Lys Ala Gly Glu Arg Gly Glu Val Pro Val Gly Ala
 20 25 30
 Val Val Val Cys Lys Glu Arg Ile Ile Ala Arg Ala His Asn Leu Thr
 35 40 45
 Glu Thr Leu Asn Asp Val Thr Ala His Ala Glu Met Gln Ala Ile Thr
 50 55 60
 Ala Ala Ala Asn Val Leu Gly Gly Lys Tyr Leu Asn Glu Cys Thr Leu
 65 70 75 80
 Tyr Val Thr Val Glu Pro Cys Val Met Cys Ala Gly Ala Ile Ala Trp
 85 90 95
 Ala Gln Thr Gly Lys Leu Val Phe Gly Ala Glu Asp Asp Lys Arg Gly
 100 105 110
 Tyr Gln Arg Tyr Ala Pro Gln Ala Leu His Pro Lys Thr Val Val Val
 115 120 125

Lys Thr Gly Thr Asp Glu Glu Lys Val Arg Asn Leu Phe Arg Lys Leu
 385 390 395 400
 Arg Pro Val Ile Arg Gly Gln Gln Glu Val Gly Glu Thr Leu Met Lys
 405 410 415
 Asp Leu Ile Asp Gly Met Asn Glu Ile Glu Lys Pro Gln Pro
 420 425 430

<210> 8444
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 8444
 Asn Tyr Arg Ser Lys Ser Lys Phe Ala Lys Asn Met Arg Lys Arg Asp
 1 5 10 15
 Lys Lys Cys Asn Lys Ala Thr Pro Asp Glu Pro Lys Arg Glu Arg Arg
 20 25 30
 Met Ser Ile Leu Leu Ser Glu Asp Glu Gln Gln Ile Val Asp Arg Tyr
 35 40 45
 Leu Asp Lys Tyr Lys Ile Thr Asn Lys Ser Arg Trp Leu Arg Glu Thr
 50 55 60
 Ile Leu Met Phe Ile His Lys Asn Met Glu Glu Asp Tyr Pro Thr Leu
 65 70 75 80
 Phe Gly Glu His Asp Met Arg Arg
 85

<210> 8445
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 8445
 Leu Gly Thr Arg Leu His Ala Val Glu Glu Leu Ala Ala Val Gln Glu
 1 5 10 15
 Ser Leu Gln Val Met Phe Thr Val Lys Val Ala Pro Ser Leu Leu Met
 20 25 30
 Phe Ser Lys Val Asp Trp Asp Asn Ser Ser Val Ala Ser Glu Val Glu
 35 40 45
 Ser Ser Gln Leu Leu Lys Pro Ile Ser Thr Lys Ser Ile Thr Asn Lys
 50 55 60
 Tyr Ser Val Phe Ile Lys Glu Cys Phe Phe Ile Lys Asn Thr Gly Ser
 65 70 75 80
 Lys Ile Met Val

<210> 8446
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 8446
 Arg Arg Gln Gly Asn Ser Pro Ala Asn Arg Tyr Ile Gly Lys Ala Leu
 1 5 10 15
 Leu Asn Glu Ser Glu Phe Thr Arg Asn Tyr Leu Thr His Arg Glu Leu
 20 25 30
 Thr Ser Gly Gly Glu Leu Val Leu Trp Met Asp Ser Val Pro Asp Ser
 35 40 45
 Arg Arg Gly Thr Gln Lys Glu Asp Leu Pro Tyr Ser Tyr Ser Asn Gly
 50 55 60

His
65

<210> 8447
<211> 92
<212> PRT
<213> B.fragilis

<400> 8447
Gly Thr Gly Gly Arg Asn Lys Lys Asn Ser Asp Gln Arg Leu Ile Ile
1 5 10 15
Arg Arg Met Ala Pro Gln Tyr Phe Val Gln Gly Ile Phe Ala Thr Ala
20 25 30
Gly Leu Ile Ala Leu Leu Ala Ser Ile Leu Asn Trp Asn Trp Phe Phe
35 40 45
Thr Ala Gln Asn Ala Gln Leu Ile Val Arg Asn Val Gly Arg Gly Arg
50 55 60
Ala Arg Leu Phe Tyr Gly Leu Leu Gly Val Ile Met Ile Gly Met Ala
65 70 75 80
Val Phe Phe Phe Leu Asn Thr Gln Pro Val Ser Glu
85 90

<210> 8448
<211> 311
<212> PRT
<213> B.fragilis

<400> 8448
Asn Met Lys Gly Leu Val Ile Lys Asn Thr Gly Ser Trp Tyr Gln Val
1 5 10 15
Lys Thr Asp Asp Gly Gln Leu Val Glu Cys Lys Ile Lys Gly Asn Phe
20 25 30
Arg Leu Lys Gly Ile Arg Ser Thr Asn Pro Val Ala Val Gly Asp Arg
35 40 45
Val Gln Ile Ile Leu Asn Gln Glu Gly Thr Ala Phe Ile Ser Glu Ile
50 55 60
Glu Asp Arg Lys Asn Tyr Ile Ile Arg Arg Ser Ser Asn Leu Ser Lys
65 70 75 80
Gln Ser His Ile Leu Ala Ala Asn Leu Asp Gln Cys Met Leu Val Val
85 90 95
Thr Val Asn Tyr Pro Glu Thr Ser Thr Thr Phe Ile Asp Arg Phe Leu
100 105 110
Ala Ser Ala Glu Ala Tyr Arg Val Pro Val Lys Ile Leu Phe Asn Lys
115 120 125
Val Asp Ala Tyr Asp Glu Asp Glu Leu His Tyr Leu Asp Ser Leu Ile
130 135 140
Thr Leu Tyr Thr Gln Ile Gly Tyr Pro Cys Phe Lys Ile Ser Ala Leu
145 150 155 160
Thr Gly Glu Gly Val Asp Ala Ile Arg Glu Glu Leu Lys Gly Arg Val
165 170 175
Thr Leu Phe Ser Gly His Ser Gly Val Gly Lys Ser Thr Leu Ile Asn
180 185 190
Ala Leu Val Pro Gly Leu Glu Val Lys Thr Ala Glu Ile Ser Ala Tyr
195 200 205
His Asn Lys Gly Met His Thr Thr Phe Ser Glu Met Phe Pro Val
210 215 220
Pro Gly Asp Gly Tyr Ile Ile Asp Thr Pro Gly Ile Lys Gly Phe Gly
225 230 235 240
Thr Phe Asp Met Glu Glu Glu Glu Ile Gly His Tyr Phe Pro Glu Ile

4600

				245					250					255			
Phe	Lys	Thr	Ser	Ala	Asn	Cys	Lys	Tyr	Gly	Asn	Cys	Thr	His	Arg	Gln		
			260						265					270			
Glu	Pro	Gly	Cys	Ala	Val	Arg	Lys	Ala	Val	Glu	Glu	His	Tyr	Ile	Ser		
		275						280					285				
Glu	Ser	Arg	Tyr	Thr	Ser	Tyr	Leu	Ser	Met	Leu	Glu	Asp	Lys	Glu	Glu		
	290					295						300					
Gly	Lys	Tyr	Arg	Ala	Ala	Tyr											
305					310												

<210> 8449

<211> 1065

<212> PRT

<213> B.fragilis

<400> 8449

Phe	Ile	Ile	Ile	Met	Arg	Glu	Arg	Lys	Leu	Val	Glu	Arg	Ala	Val	Arg		
1				5					10					15			
Ile	Ser	Gly	Met	Phe	Val	Leu	Leu	Ser	Gly	Met	Gly	Leu	Gln	Pro	Cys		
		20						25					30				
Leu	Ala	Ser	His	Ser	Tyr	Asn	Ala	Ala	Pro	Ala	Gly	Val	Val	Gln	Val		
		35					40					45					
Glu	Gln	Gln	Lys	Gln	Lys	Ile	Thr	Gly	Cys	Val	Leu	Asp	Val	Thr	Gly		
	50					55					60						
Ser	Pro	Leu	Pro	Gly	Ala	Ser	Val	Leu	Val	Lys	Gly	Ala	Pro	Gly	Arg		
65					70					75					80		
Gly	Ala	Ile	Thr	Asp	Met	Asp	Gly	Asn	Phe	Ser	Val	Glu	Ala	Glu	Gln		
				85					90					95			
Gly	Glu	Gln	Leu	Glu	Ile	Ser	Phe	Ile	Gly	Met	Glu	Thr	Gln	Val	Val		
			100					105					110				
Thr	Val	Ser	Ala	Lys	Thr	Arg	Leu	Gln	Ile	Thr	Leu	Lys	Glu	Asp	Ser		
		115					120					125					
Lys	Thr	Leu	Asp	Glu	Val	Val	Val	Val	Gly	Tyr	Gly	Thr	Gln	Lys	Lys		
	130					135					140						
Ala	Asn	Leu	Thr	Gly	Ala	Val	Ala	Ser	Val	Ser	Ala	Glu	Thr	Leu	Glu		
145					150					155					160		
Ser	Arg	Pro	Ile	Thr	Asn	Leu	Ser	Gln	Gly	Leu	Gln	Pro	Pro	Ile	Gly		
			165						170					175			
Asn	Leu	Asn	Ile	Ser	Ala	Asp	Asn	Gly	Ala	Pro	Gly	Lys	Gly	Tyr	Gly		
		180						185					190				
Phe	Asn	Val	Arg	Gly	Thr	Thr	Ser	Ile	Asn	Ser	Ser	Gly	Pro	Leu	Val		
	195					200						205					
Leu	Val	Asp	Gly	Val	Gln	Met	Asp	Pro	Asn	Met	Ile	Asn	Pro	Ala	Asp		
	210					215					220						
Val	Glu	Ser	Val	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ala	Ser	Ile	Tyr		
225					230					235					240		
Gly	Thr	Gln	Ala	Ala	Tyr	Gly	Val	Val	Leu	Ile	Thr	Thr	Lys	Lys	Gly		
			245						250					255			
Lys	Asp	Glu	Lys	Ala	Lys	Ile	Ser	Phe	Ser	Ser	Asn	Trp	Ser	Ile	Asn		
		260						265					270				
Ser	Pro	Thr	Arg	Lys	Pro	Glu	Tyr	Met	Asp	Ser	Trp	Thr	Phe	Ala	Asn		
		275					280						285				
Phe	His	Asn	Leu	Thr	Asn	Arg	Asn	Ser	Gly	Gly	Gly	Asp	Tyr	Tyr	Asp		
	290					295					300						
Lys	Asn	Tyr	Met	Asp	His	Ile	Tyr	Ala	Tyr	Tyr	Thr	Asp	Pro	Lys	His		
305					310					315					320		
Asn	Leu	Pro	Val	Phe	Ile	Asp	Pro	Ser	Asn	Pro	Asn	Lys	Tyr	Leu	Tyr		
			325						330					335			
Cys	Gly	Asn	Thr	Asp	Trp	Ile	Asp	Glu	Thr	Ile	Lys	Asp	Asn	Thr	Leu		

Asp Tyr Gln Ala Glu Ile Thr Lys Phe Asn Asn Pro Gln Asn Leu Leu
 820 825 830
 Ser Thr His Tyr Val Gly Lys Lys Trp Gly Glu Ile Trp Gly Leu Val
 835 840 845
 Thr Glu Gly Leu Phe Gln Ser Ala Glu Glu Val Ser Ala His Ala Asp
 850 855 860
 Gln Ser Glu Ile Tyr Gly Gly Gly Trp Tyr Pro Gly Asp Val Lys Tyr
 865 870 875 880
 Lys Asp Leu Asn Gly Asp Gly Lys Ile Asn Lys Gly Lys Asn Thr Leu
 885 890 895
 Asp Asp Pro Gly Asp Gln Lys Ile Ile Gly Asn Ser Glu Pro Arg Tyr
 900 905 910
 Ser Tyr Gly Ile Lys Gly Gly Leu Gln Trp Arg Asp Phe Asp Phe Asp
 915 920 925
 Val Phe Phe Gln Gly Ile Gly Lys Lys Asp Val Val Leu Gly Gly Asn
 930 935 940
 Gln Phe Trp Gly Phe Gly Asn Glu Trp His Val Pro Phe Lys His Ala
 945 950 955 960
 Leu Asp Ser Trp Thr Glu Asp Asn Arg Asn Ala Tyr Phe Pro Arg Ser
 965 970 975
 Thr Tyr Asp Asn Val Thr Gly Asn Arg Glu Thr Gln Thr Arg Tyr Leu
 980 985 990
 Gln Asn Ala Tyr Leu Arg Leu Lys Ser Ile Thr Leu Gly Tyr Ser
 995 1000 1005
 Leu Pro Lys Ala Leu Leu Ala Lys Trp Lys Ile Asp His Val Arg Phe
 1010 1015 1020
 Tyr Val Ser Gly Gln Asn Leu Leu Thr Phe Asp His Leu Phe Asp Ile
 1025 1030 1035 1040
 Tyr Asp Pro Glu Thr Val Ser Leu Ser Thr Tyr Pro Leu Thr Lys Ser
 1045 1050 1055
 Val Ser Phe Gly Leu Asn Ile Thr Leu
 1060 1065

<210> 8450
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 8450
 Phe Val Ile Met Trp Ile Leu Ile Val Gly Leu Val Leu Leu Ala Ile
 1 5 10 15
 Val Ala Met Ile Ala Gly Tyr Ile Arg Asn Lys Arg Leu Gln Lys Lys
 20 25 30
 Ile Asp Asn Gly Glu Leu Asp Ser Phe Pro Glu Val Lys Glu Val Asp
 35 40 45
 Val Glu Cys Cys Gly Gln His Glu Val Cys Glu Arg Asp Ser Leu Leu
 50 55 60
 Ala Ala Val Ser Lys Gln Ile Glu Tyr Tyr Asp Asp Glu Glu Leu Asp
 65 70 75 80
 Thr Phe Ile Gly Arg Ala Pro Glu Asp Tyr Thr Pro Glu Glu Ala Asp
 85 90 95
 Lys Phe Arg Asp Val Phe Tyr Thr Met Gln Asp Thr Asp Val Ala Gly
 100 105 110
 Trp Val Arg Ser Leu Gln Leu Arg Gly Ile Ser Leu Pro Asp Glu Ile
 115 120 125
 Lys Asp Glu Val Phe Leu Val Gly Glu Arg Arg Ile His Pro
 130 135 140

<210> 8451

<211> 73
 <212> PRT
 <213> B.fragilis

<400> 8451

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Trp Ala Asp Tyr Arg Trp Tyr Val Phe Ser Ala Met Gly Phe Tyr Pro
1          5          10          15
Val Cys Pro Gly Val Pro Glu Tyr Ala Met Gly Ser Pro Leu Phe Pro
          20          25          30
Lys Leu Thr Leu His Leu Pro Gly Arg Lys Glu Leu His Cys Glu Gly
          35          40          45
Gly Lys Ala Ile Ala Arg Arg Thr Gly Ile Ser Gly Lys Pro Cys Ser
          50          55          60
Met Lys Val Asn Leu Pro Val Thr Thr
65          70

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<210> 8452
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 8452

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Leu Ile Ala Ile Ser Glu Ile Ser Ile Thr His Ser Arg Thr Met Ala
1          5          10          15
Gly Asn Asn Gln Asn Lys Lys Ala Ala Met Lys Lys Tyr Leu Leu Thr
          20          25          30
Ile Tyr Lys Leu Leu Leu Lys Tyr Leu Leu Met Leu Ile Cys Ile Val
          35          40          45
Lys Trp Asp Ser Leu Leu Ile Ser Ile Ile Cys Leu Cys Leu Pro Phe
          50          55          60
Phe Cys
65

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<210> 8453
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 8453

```

Arg Thr Asp Met Val Val Thr Lys Ile Lys Ile Ser Ala Met Ile Leu
1          5          10          15
Thr Cys Met Leu Tyr Asn Ala Leu Asn Thr Cys Ala Arg Ser Val Asp
          20          25          30
Ile Ser His Lys Gly Cys Lys Tyr Ser Ile Asp Leu Pro Ser Gly Trp
          35          40          45
Asp Thr Ile Pro His Asp Thr Leu Lys Lys Ile Phe Pro Arg Leu Asp
          50          55          60
Leu Asp Met Gly Leu Tyr Pro Val Ser Gln Lys Glu Tyr Phe Thr Gly
65          70          75          80
Asn Tyr Ala Leu Val Gly Phe Met Pro Val Leu Gln Ser Leu His Ser
          85          90          95
Tyr Ser Phe Asp Arg Ile Val Ser Asp Met Lys Glu Met Asn Asp Arg
          100          105          110
Thr Lys Asn Thr Trp Asn Asn Asp Ser Ile Ser Thr Arg Leu Asp Ser
          115          120          125
Ile Val Pro Val Asn Ser Ser Pro Asn Tyr Arg Ile Asn Asn Tyr Leu
          130          135          140
Thr Ile Arg Arg Asp Ser Ile Leu Leu Lys Gly Cys Gln Ser Leu Tyr
145          150          155          160

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Val Ser Lys Phe Gly Tyr Ile Thr Leu Met Leu Tyr Gln Lys Gly Asn
      165      170      175
Asp Ala Leu Pro Ile Asp Ser Leu Leu Gly Lys Phe Asn Asp Ser Gly
      180      185      190
Cys Leu Lys Val Asp Gln Glu Tyr Arg Tyr Thr Pro Pro Gln Lys Glu
      195      200      205
Gly Leu Ser Phe Thr His Phe Leu Tyr Ala Leu Gly Ile Gly Gly Ile
      210      215      220
Val Tyr Leu Leu Ile Ala Phe Phe Pro Lys Arg Lys Thr Asn Arg Gln
      225      230      235      240

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<210> 8454

<211> 451

<212> PRT

<213> B.fragilis

<400> 8454

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Thr Ile Ile Phe Asp Pro Val Phe Phe Ile Lys Lys His Ser Phe Met
1      5      10      15
Lys Thr Glu Tyr Leu Phe Val Ile Leu Val Leu Ile Gly Phe Ser
      20      25      30
Ser Cys Glu Asp Ser Thr Ser Asp Ala Thr Leu Glu Leu Ser Gln Ser
      35      40      45
Thr Phe Glu Asn Ile Ser Ser Asp Gly Ala Thr Leu Thr Val Asn Ile
      50      55      60
Thr Cys Ser Asp Ser Trp Thr Ala Ala Ser Ser Ser Thr Ala Cys Asn
      65      70      75      80
Leu Val Pro Asn Gln Gly Thr Ser Asn Gln Ser Leu Ser Ile Val Val
      85      90      95
Glu Ala Asn Leu Asp Glu Ala Glu Arg Asn Met Thr Val Val Val Thr
      100      105      110
Ser Gly Gly Ile Lys Lys Thr Ile Ser Ile Ser Gln Gln Gly Arg Ser
      115      120      125
Thr Thr Ala Gly Glu Tyr His Tyr Asn Leu Pro Val Ile Phe His Val
      130      135      140
Leu Tyr Lys Asp Lys Asn Asn Pro Leu Gln Tyr Val Lys Gln Asp Arg
      145      150      155      160
Leu Ala Lys Ile Leu Asp Thr Val Asn Lys Leu Tyr Lys Asp Lys Thr
      165      170      175
Lys Ser Val Asp Met Asn Leu Thr Phe Thr Leu Ala Thr Thr Asp Glu
      180      185      190
Asp Gly Lys Pro Leu Ser Thr Pro Gly Val Lys Tyr Val Leu Trp Glu
      195      200      205
Glu Ser Tyr Pro Ile Asp Cys Asp Val Phe Met Asn Asp Glu Thr Gly
      210      215      220
Lys Tyr Val Lys Tyr Ile Trp Glu Pro Asn Asn Tyr Ile Asn Val Met
      225      230      235      240
Val Tyr Asn Phe Lys Asp Asp Glu Ser Thr Asn Ser Thr Thr Leu Gly
      245      250      255
Ile Ala His Ile Pro Phe Ser Thr Val Gly Ser Asn Tyr Leu Glu Gly
      260      265      270
Leu Ser Lys Thr Gln Lys Ser Tyr Leu Glu Lys Gln Asn Leu Lys Phe
      275      280      285
Pro Tyr Ser Val Ser Ile Asn Ser Leu Phe Ile Asn Asp Gln Ser Thr
      290      295      300
Ser Thr Gln Tyr Ser Thr Ala Asp Ile Thr Val Thr Leu Ala His Glu
      305      310      315      320
Leu Gly His Tyr Leu Gly Leu His His Ala Phe Ser Glu Asn Asp Glu
      325      330      335

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Gly Ile Tyr Asp Gly Cys Phe Asp Ser Asp Tyr Cys Asp Asp Thr Pro
 340 345 350
 Thr Tyr Asn Lys Val Glu Tyr Asp Ala Asp Tyr Ala Tyr Thr Ala Lys
 355 360 365
 Asn Asp Pro Ala Asn Phe Thr Phe Asp Tyr Leu Val Lys Arg Glu Asn
 370 375 380
 Cys Lys Thr Asn Gln Thr Phe Thr Ser Thr Asn Ile Met Asp Tyr Ser
 385 390 395 400
 Val Ser Tyr Ser Asp Arg Phe Thr Asn Asp Gln Arg Ser Arg Ile Arg
 405 410 415
 His Val Leu Thr Tyr Ser Pro Leu Ile Pro Gly Pro Lys Gln Gly Gln
 420 425 430
 Thr Gln Thr Arg Ser Val Val Glu Gly Pro Ile Asp Leu Pro Ile Arg
 435 440 445
 Thr Ala Arg
 450

<210> 8455

<211> 339

<212> PRT

<213> B.fragilis

<400> 8455

Asn Arg Asn Ile Pro Ile Met Lys Arg Lys His Leu Ile Thr Val Leu
 1 5 10 15
 Met Trp Cys Val Ala Thr Thr Leu Cys Ala Gln Thr Pro Val Glu Lys
 20 25 30
 Gly Leu Lys Ser Ile Asn Arg Gln Ala Thr Glu Ala Tyr Ile Gly Phe
 35 40 45
 Leu Ala Asp Asp Glu Leu Gln Gly Arg Glu Ala Gly Phe His Gly Ser
 50 55 60
 Arg Val Ala Ala Arg Tyr Ile Ala Ser Leu Leu Lys Glu Met Gly Ile
 65 70 75 80
 Arg Pro Leu Gly Glu Ser Tyr Tyr Gln Pro Phe Asp Ala Tyr Arg Lys
 85 90 95
 Glu Arg Gln Gln Lys Gly Arg Leu Glu Val His Pro Asp Ser Ile Ala
 100 105 110
 Lys Leu Lys Gln Val Val His Gln Lys Leu Ser Met Asn Asn Val Leu
 115 120 125
 Gly Met Ile Pro Gly Lys Lys Thr Asn Glu Tyr Val Ile Val Gly Ala
 130 135 140
 His Phe Asp His Leu Gly Ile Asp Pro Ala Leu Asp Gly Asp Gln Ile
 145 150 155 160
 Tyr Asn Gly Ala Asp Asp Asn Ala Ser Gly Val Ser Ala Val Leu Gln
 165 170 175
 Ile Ala Lys Ala Phe Val Val Ser Gly Gln Gln Pro Glu Arg Asn Val
 180 185 190
 Ile Phe Ala Phe Trp Asp Gly Glu Glu Lys Gly Leu Leu Gly Ser Lys
 195 200 205
 Tyr Phe Val Gln Glu Cys Pro Phe Ile Asn Gln Val Lys Gly Tyr Leu
 210 215 220
 Asn Phe Asp Met Ile Gly Arg Asn Asn Gln Pro Gln Asn Pro Lys His
 225 230 235 240
 Val Val Tyr Phe Tyr Thr Glu Ala Asn Pro Ala Phe Gly Arg Trp Leu
 245 250 255
 Lys Glu Asp Ile Lys Lys Tyr Gly Leu Gln Leu Glu Pro Asn Tyr Arg
 260 265 270
 Pro Trp Asp Lys Pro Val Gly Val Ser Asp Asn Gly Ser Phe Ala Lys
 275 280 285

Ala Gly Ile Pro Ile Ile Trp Tyr His Thr Asp Gly His Pro Asp Tyr
 290 295 300
 His Gln Pro Ser Asp His Ala Asp Arg Leu Asn Trp Asp Lys Val Val
 305 310 315 320
 Glu Ile Ser Lys Ala Ser Phe Leu Asn Val Trp Asn Leu Ala Asn Glu
 325 330 335
 Lys Asp Tyr

<210> 8456
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 8456
 Glu Thr Ile Met Ala Asn Ala Ile Thr Arg His Ile Pro Asn Thr Val
 1 5 10 15
 Thr Cys Leu Asn Leu Phe Ser Gly Cys Ile Ala Gly Val Met Ala Phe
 20 25 30
 Glu Ala Lys Tyr Glu Leu Ala Phe Ile Ile Leu Ser Ala Val
 35 40 45
 Phe Asp Phe Phe Asp Gly Met Leu Ala Arg Leu Leu His Ala Tyr Ser
 50 55 60
 Pro Ile Gly Lys Glu Leu Asp Ser Leu Ala Asp Asp Val Ser Phe Gly
 65 70 75 80
 Val Ala Pro Ser Leu Leu Val Phe Ser Phe Leu Lys Glu Pro Gly Leu
 85 90 95
 Ile Tyr Pro Asp Phe Leu Ala Gly Leu Arg Asp Tyr Ile Pro Tyr Leu
 100 105 110
 Ala Phe Leu Ile Ser Ile Phe Ser Ala Leu Arg Leu Ala Asn Phe Asn
 115 120 125
 Val Asp Glu Arg Gln Thr Ser Ser Phe Ile Gly Leu Pro Val Pro Ala
 130 135 140
 Asn Ala Leu Tyr Trp Gly Ala Leu Ile Val Gly Gly Lys Asp Phe Leu
 145 150 155 160
 Leu Ala His Cys Asn Val Ile Tyr Leu Ile Met Val Met Leu Phe
 165 170 175
 Ser Trp Leu Leu Val Ala Glu Ile Pro Met Phe Ser Leu Lys Phe Lys
 180 185 190
 Asn Leu Ser Trp Lys Asp Asn Lys Val Ser Phe Ile Phe Leu Ile Val
 195 200 205
 Cys Ile Pro Leu Leu Leu Phe Leu Gly Ile Ser Gly Phe Ser Ala Val
 210 215 220
 Ile Val Trp Tyr Ile Ile Leu Ser Leu Leu Thr Arg Lys Asn Lys
 225 230 235

<210> 8457
 <211> 231
 <212> PRT
 <213> B.fragilis

<400> 8457
 Ile Ala Gln Met Gly Arg Leu Lys Lys Leu Lys Lys Ile Arg Ile His
 1 5 10 15
 Arg Glu Gly Thr His Ile Leu Trp Gly Ser Phe Phe Leu Leu Leu Ile
 20 25 30
 Ile Asn Leu Ala Leu Tyr Trp Gly Ile Asp Cys Lys Ile Pro Phe Tyr
 35 40 45
 Leu Val Ala Leu Val Ser Ile Val Val Tyr Leu Leu Met Val Asn Phe

50		55		60	
Phe Arg Cys Pro Ile Arg Leu Phe Gly Gln Asp Thr Glu Lys Ile Val					
65	70	75	80		
Val Ala Pro Ala Asp Gly Lys Ile Val Val Ile Glu Glu Val Asp Glu					
	85	90	95		
His Glu Tyr Phe His Asp Arg Arg Ile Met Val Ser Ile Phe Met Ser					
	100	105	110		
Ile Leu Asn Val His Ala Asn Trp Tyr Pro Val Asp Gly Val Val Lys					
	115	120	125		
Lys Val Thr His Asp Asn Gly Lys Phe Met Lys Ala Trp Leu Pro Lys					
	130	135	140		
Ala Ser Thr Glu Asn Glu Arg Ser Met Ile Val Ile Glu Thr Pro Glu					
	145	150	155	160	
Gly Val Glu Val Met Ala Arg Gln Ile Ala Gly Ala Met Ala Arg Arg					
	165	170	175		
Ile Val Thr Tyr Ala Glu Pro Gly Glu Glu Cys Tyr Ile Asp Glu His					
	180	185	190		
Leu Gly Phe Ile Lys Phe Gly Ser Arg Val Asp Val Tyr Leu Pro Leu					
	195	200	205		
Gly Thr Glu Ile Cys Val Ser Met Gly Gln Leu Thr Thr Gly Asn Gln					
	210	215	220		
Thr Val Ile Ala Lys Leu Lys					
225	230				

<210> 8458

<211> 503

<212> PRT

<213> B.fragilis

<400> 8458

Thr Gly Arg Ile Gly Ser Val Thr Gly Val Ala Arg Asn His Asn Gly					
1	5	10	15		
Gly Val Pro Asp Asn Ser Ala Asn Tyr Phe Arg Ile Glu Phe Ser His					
	20	25	30		
Pro Ile Ala Glu Glu Gly Val Tyr Asp Gly Asp Thr Leu Met Arg His					
	35	40	45		
Arg Pro Thr Leu Glu Ser Asp Tyr Thr Cys Ala Tyr Leu Arg Phe Asn					
	50	55	60		
Val Pro Ala Gly Glu Lys Leu Thr Val Arg Thr Ala Ser Ser Phe Ile					
	65	70	75	80	
Ser Pro Ala Gln Ala Leu Val Asn Phe Ser Arg Glu Val Gly Gly Lys					
	85	90	95		
Ser Leu Ala Gln Val Arg Glu Glu Ala Arg Lys Gln Trp Asn Ser Tyr					
	100	105	110		
Leu Gly Arg Ile Glu Ala Glu Gly Gly Ser Glu Glu Gln Leu Arg Thr					
	115	120	125		
Phe Tyr Ser Cys Leu Tyr Arg Thr Leu Leu Phe Pro Arg Glu Phe Tyr					
	130	135	140		
Glu Phe Asp Ala Gln Gly Lys Pro Val Tyr Tyr Ser Pro Tyr Asn Gly					
	145	150	155	160	
Lys Ile Gln Asp Gly Tyr Met Tyr Thr Asp Asn Gly Phe Trp Asp Thr					
	165	170	175		
Phe Arg Ala Val His Pro Leu Phe Thr Leu Leu Tyr Pro Glu Val Ser					
	180	185	190		
Glu Arg Val Thr Gln Ser Ile Leu Asn Ala Tyr Asp Glu Ser Gly Phe					
	195	200	205		
Met Pro Glu Trp Ala Ser Pro Gly His Arg Glu Cys Met Ile Gly Asn					
	210	215	220		
Asn Ser Ile Ser Leu Leu Thr Asp Ala Trp Met Lys Gly Ile Arg Thr					

225 230 235 240
 Ile Cys Pro Glu Lys Ala Leu Glu Ala Met Ile His Gln Thr Glu Gly
 245 250 255
 Arg His Pro Gly Ile Ser Ser Val Glu Arg Asp Gly Phe Gly Tyr Tyr
 260 265 270
 Asp Arg Leu Ser Tyr Val Pro Tyr Pro Glu Val His Glu Ala Thr Ala
 275 280 285
 Lys Thr Leu Glu Tyr Ala Tyr Ala Asp Trp Cys Val Ala Arg Phe Ala
 290 295 300
 Asp Ser Ile Gly Arg Lys Glu Ile Ala Asp Thr Tyr Tyr Arg Lys Ala
 305 310 315 320
 Leu Asn Tyr Arg Asn Leu Tyr Tyr Pro Asp Tyr Gly Phe Met Trp Ala
 325 330 335
 Lys Asp Ala Asn Gly Lys Trp Arg Asp Ala Phe Asp Ala Thr Glu Trp
 340 345 350
 Gly Gly Pro Phe Thr Glu Gly Ser Ser Trp His Trp Thr Trp Ser Val
 355 360 365
 Leu His Asp Pro Glu Gly Leu Ser Arg Leu Met Gly Gly His Thr Ala
 370 375 380
 Met Glu Ala Arg Leu Asp Ser Met Phe Thr Ala Pro Asn Thr Tyr Asn
 385 390 395 400
 Tyr Gly Thr Tyr Gly Phe Val Ile His Glu Ile Ala Glu Met Val Ala
 405 410 415
 Leu Asp Met Gly Gln Tyr Ala His Gly Asn Gln Pro Val Gln His Ala
 420 425 430
 Ile Tyr Leu Tyr Asp Tyr Ile Gly Arg Pro Trp Lys Thr Gln Lys His
 435 440 445
 Val Arg Glu Val Met Asp Lys Leu Tyr His Ser Gly Ser Lys Gly Tyr
 450 455 460
 Cys Gly Asp Glu Asp Asn Gly Gln Thr Thr Ala Gly Met Ser Phe Pro
 465 470 475 480
 Pro Trp Asp Ser Ile Arg Phe Val Pro Val Phe Arg Ser Met Pro Trp
 485 490 495
 Asp Leu Arg Ser Ser Arg Asn
 500

<210> 8459
 <211> 303
 <212> PRT
 <213> B.fragilis

<400> 8459
 Lys Thr Arg Ile Ala Phe Arg Lys Val Gly Gln Glu Arg Thr Val Asp
 1 5 10 15
 Leu Val Leu Thr Ala Ile Leu Ala Asn Gly His Val Leu Ile Glu Gly
 20 25 30
 Val Pro Gly Val Ala Lys Thr Leu Leu Ala Arg Leu Thr Ala Arg Leu
 35 40 45
 Ile Asp Ala Asp Phe Ser Arg Val Gln Phe Thr Pro Asp Leu Met Pro
 50 55 60
 Ser Asp Val Leu Gly Thr Thr Val Phe Asn Met Lys Thr Asn Glu Phe
 65 70 75 80
 Asp Phe His Arg Gly Pro Val Phe Ala Asn Ile Ile Leu Val Asp Glu
 85 90 95
 Ile Asn Arg Ala Pro Ala Lys Thr Gln Ser Ala Leu Phe Glu Val Met
 100 105 110
 Glu Glu Arg Gln Ala Ser Ile Asp Gly Thr Thr Tyr Arg Met Gly Glu
 115 120 125
 Leu Tyr Thr Ile Leu Ala Thr Gln Asn Pro Val Glu Gln Glu Gly Thr


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      130              135              140
Tyr Lys Leu Pro Glu Ala Gln Leu Asp Arg Phe Leu Met Lys Ile Thr
145              150              155              160
Met Asp Tyr Pro Ser Leu Asp Glu Glu Ile Asn Ile Leu Glu Arg His
      165              170              175
His Thr Asn Ala Ala Leu Val Lys Leu Glu Glu Ile Gln Pro Val Ile
      180              185              190
Thr Arg Glu Glu Leu Leu Ser Leu Arg Arg Leu Thr Glu Lys Val Phe
      195              200              205
Val Asp Arg Thr Leu Leu Gln Tyr Ile Ala Leu Ile Ala Gln Gln Thr
      210              215              220
Arg Thr Ser Lys Ala Val Tyr Leu Gly Ala Ser Pro Arg Ala Ser Val
225              230              235              240
Ala Met Leu Gln Ala Ser Lys Ala Tyr Ala Leu Leu Gln Gly Arg Asp
      245              250              255
Phe Val Thr Pro Glu Asp Ile Lys Phe Val Ala Pro Tyr Val Leu Gln
      260              265              270
His Arg Leu Ile Leu Thr Ala Glu Ala Lys Met Glu Gly Tyr Ser Pro
      275              280              285
Val Lys Val Thr Gln Arg Leu Ile Asp Lys Val Glu Val Pro Lys
      290              295              300

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<210> 8460

<211> 339

<212> PRT

<213> B.fragilis

<400> 8460

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Phe Ser Tyr Phe Cys Phe Arg Phe Arg Thr Lys Leu Ile Arg Ser Arg
1      5      10      15
Thr Gly Trp Met Lys Glu Val Thr Phe Ile Arg Arg Asn Ile Glu Lys
      20      25      30
Trp Lys Glu Thr Glu Lys Val Val Glu Gln Ala Asp Lys Leu Thr Pro
      35      40      45
Asp Arg Leu Ala Asp Ala Tyr Thr Glu Leu Thr Ala Asp Leu Ala Phe
      50      55      60
Ala Gln Thr His Tyr Pro Ser Ser Arg Ile Thr Ile Tyr Leu Asn Asn
65      70      75      80
Leu Ala Ser Ala Leu His Asn Val Ile Tyr Arg Asn Lys Lys Glu Lys
      85      90      95
Trp Thr Arg Ile Phe Thr Phe Trp Thr Gln Glu Val Pro Gln Thr Met
      100      105      110
Tyr His Ala Arg Lys Glu Leu Leu Val Ser Val Leu Ile Phe Trp Ala
      115      120      125
Ser Val Leu Val Gly Ile Val Ser Ala Ala Asn Asp Asp Asn Phe Val
      130      135      140
Arg Leu Ile Leu Gly Asn Gly Tyr Val Asp Met Thr Leu Asp Asn Ile
145      150      155      160
Ala Arg Gly Glu Pro Met Ala Val Tyr Asn Gly Ser Glu Glu Val Pro
      165      170      175
Met Phe Leu Gly Ile Thr Leu Asn Asn Ile Met Val Ser Phe Asn Val
      180      185      190
Phe Ala Met Gly Leu Leu Thr Ser Phe Gly Thr Gly Trp Leu Leu Phe
      195      200      205
Asn Asn Gly Val Met Leu Gly Ala Phe Gln Thr Phe Phe Phe Lys His
      210      215      220
Gly Leu Leu Gly Glu Ser Met Leu Ala Ile Trp Leu His Gly Thr Leu
225      230      235      240
Glu Ile Trp Ala Ile Ile Val Ala Gly Ala Ala Gly Leu Ala Leu Gly

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Leu Leu Arg Gly Lys Phe Ile Pro Ala Ala Glu Ser Asp Leu Phe Asp
 785 790 795 800
 Tyr Tyr Lys Gln Lys Val Glu Thr Leu Ile His Ser Leu Leu Pro Gly
 805 810 815
 Gln Leu Glu Leu Ala Tyr Gly Asp Ala Arg Phe Ser Ile Val Ile Arg
 820 825 830
 Leu Cys Asn Ile Leu Phe Ile Ala Asp Pro Leu Ser Asp Leu Ala Leu
 835 840 845
 Ala Tyr Thr Val Cys Thr Leu Arg Lys Gln Asn Asn Gln Glu Glu Ala
 850 855 860
 Ile Arg Arg Tyr Ala Ala Phe Thr Lys Asp Tyr Arg Arg Val Met Asn
 865 870 875 880
 Glu Glu Tyr Gly Ile Ala Phe Ala Asp Ile Lys Val
 885 890

<210> 8462

<211> 474

<212> PRT

<213> B.fragilis

<400> 8462

Asn Tyr Glu Phe Phe Val Ile Leu Lys Thr Ser Leu Ile Phe Val Lys
 1 5 10 15
 Lys Glu Ile Thr Arg Leu Asn Ser Met Arg Lys Glu Leu Leu Phe Thr
 20 25 30
 Val Phe Val Ser Val Ala Phe Ile Phe Leu Gln Ala Phe Trp Ile Val
 35 40 45
 Arg Met Tyr Gln Arg Tyr Glu Glu Gln Tyr Thr Glu Gln Val Asn Lys
 50 55 60
 Ala Phe Leu Asp Ala Ile Gly Lys Glu Val Glu Leu Arg Ile Arg Tyr
 65 70 75 80
 Val Glu Glu Phe Lys Thr Pro Ile Leu Ile Lys Pro Thr Gly Cys Val
 85 90 95
 Ser Glu Lys Glu Arg Thr Gly Tyr Lys Gly Asp Thr Ile Asp Leu Val
 100 105 110
 Leu Leu Lys Gln Asn Asp Ile Val Arg Asn Val Ser Glu Phe Leu Ala
 115 120 125
 Gln Leu Glu Gln Asp Glu Leu Ser Ser Arg Val Ser Pro Val Leu
 130 135 140
 Pro Val Ile Asp Ser Leu Leu Arg Glu Glu Leu Ser Gly Leu Lys Ile
 145 150 155 160
 Asp His Tyr Leu Ser Leu Tyr Asp Lys Glu Gly Lys Met Val Asp Ser
 165 170 175
 Leu Gly Asn Thr Ser Leu Arg Gly Glu Arg Arg Val Ile Lys Val Arg
 180 185 190
 Glu Ala Ile Gly Thr Lys Gly Leu Leu Phe Met Gln Ile Glu Ser Lys
 195 200 205
 Leu Pro Tyr Asp Ala Ile Leu Ser Lys Met Phe Tyr Ser Leu Leu Val
 210 215 220
 Phe Ala Leu Ile Ile Met Phe Val Val Gly Cys Leu Ile His Gln Leu
 225 230 235 240
 Arg Val Ile Arg Gln Lys Asp Glu Leu Leu Glu Arg Arg Glu Val Ser
 245 250 255
 Val Asn Gly Ile Val His Asp Leu Lys Ser Pro Leu Asn Ala Leu Val
 260 265 270
 Thr Leu Thr Gly Trp Leu Met Glu Thr Glu Ser Asp Leu Arg Lys Lys
 275 280 285
 Glu Leu Met Ala Glu Val Ile Lys Arg Ala Gly His Gln Thr Ala Gln
 290 295 300

Ile Glu Ser Ile Leu Val Cys Ala Arg Gly Ala Ala Gln Pro Ile Val
 305 310 315 320
 Leu Asn Lys Thr Glu Ile Asn Pro Glu Glu Ile Val Gln Ala Ala Ile
 325 330 335
 Asp Asp Ile Cys Val Glu Leu Lys Ala Lys Pro His Ser Ile Glu Val
 340 345 350
 Ile Asn Glu Ala Ser Gly Leu Thr Cys Leu Gly Asp Arg Gly Tyr Leu
 355 360 365
 Glu Asn Val Met Lys Asn Leu Ile Glu Asn Ala Leu Lys Tyr Ala Asp
 370 375 380
 Asp Gly Val Lys Ile Gln Ile Glu Ile Thr Arg Ile Ser Gln Gly Ile
 385 390 395 400
 Gln Ile Lys Val Lys Asp Asn Gly Trp Gly Ile Ala Pro Lys Tyr Gln
 405 410 415
 Lys Lys Leu Phe Asn Gln Tyr Tyr Gln Val Pro Arg Glu Ala Leu Arg
 420 425 430
 Met Arg Lys Gly Tyr Gly Ile Gly Leu Ala Tyr Val Arg His Ile Ile
 435 440 445
 Arg Ala His Gly Gly Lys Ile Gln Phe Lys Ser Arg Glu Asn Glu Gly
 450 455 460
 Ser Val Phe Thr Phe Tyr Ile Pro Glu Lys
 465 470

<210> 8463

<211> 213

<212> PRT

<213> B.fragilis

<400> 8463

Arg Cys Ser Ser Asn Gly Arg Val Ser Leu Arg Ser Ala Trp Trp Arg
 1 5 10 15
 Trp Pro Cys Ile Leu Pro Arg Trp Leu Glu Met Val Glu Glu Ala Ile
 20 25 30
 Gly Trp Lys Gly Leu Thr Cys Ala Ala Asn Leu Phe Tyr Ala Tyr Thr
 35 40 45
 Arg Glu Cys Tyr Asp Asp Val Asp Glu Ala Arg Ile Thr Pro Tyr Thr
 50 55 60
 Leu Leu Ser Pro Leu Glu Ile Ser Val Gly Val Val Asp Thr Ala Trp
 65 70 75 80
 Phe Trp Lys Ala Tyr Asn Ala Leu Gly Arg Glu Arg Tyr Glu Lys Val
 85 90 95
 Phe Ala Ala Ser Lys Ala Val Thr Glu Ser Ser Gly Val Tyr Ser Arg
 100 105 110
 Phe Arg Lys Tyr Thr Asp Ala Leu Val Gly Lys Tyr Thr Ile Ala Gln
 115 120 125
 Leu Glu Ser Leu Val Met Asp Asn Arg Asn Lys Asp Trp Val Arg Ala
 130 135 140
 Tyr Pro Leu Ala Pro Phe Ala Gly Lys Ala Arg Lys Lys Glu Val Asp
 145 150 155 160
 Ala Arg Leu Arg Phe Leu Lys Ala Phe Trp Leu Ser Ser Asp Thr Leu
 165 170 175
 Ser Gly Arg His Thr Ala Glu Lys Glu Ala Val Gln Val Ala Leu Asp
 180 185 190
 Asn Leu Thr Gly Asn Ser Gly Leu Gly Asn Leu Asp Thr Arg Trp Phe
 195 200 205
 Lys Lys Lys Val Trp
 210

<210> 8464

<211> 98
 <212> PRT
 <213> B.fragilis

<400> 8464

Asn	His	Ile	Pro	Arg	Lys	Pro	Ala	Trp	Arg	Thr	Thr	Pro	Ser	Thr	Ser
1				5					10					15	
Arg	Val	Arg	Gly	Met	Pro	Glu	His	Trp	Val	Gly	Tyr	Cys	Tyr	Ala	Trp
			20					25					30		
Gly	Tyr	Ala	Asp	Asn	His	Pro	Asn	Asn	Thr	Glu	Tyr	Ser	Gln	Phe	Lys
		35					40					45			
Ile	Asp	Trp	Ala	Val	Asp	Lys	Asp	Gly	Lys	Pro	Val	His	Leu	Asp	Gly
	50					55					60				
Ile	Asp	Phe	Val	Lys	Ile	Tyr	Thr	Ala	Val	Asn	Gln	Asn	Cys	Gly	Trp
65					70					75					80
Leu	Gly	Glu	Ala	Ser	Thr	Glu	Ile	Gln	Ala	Val	Glu	Asp	Leu	His	Tyr
				85					90					95	

Lys Lys

<210> 8465
 <211> 524
 <212> PRT
 <213> B.fragilis

<400> 8465

Leu	Asn	Asn	Pro	Asn	Lys	Thr	Leu	Ile	Tyr	Arg	Leu	Val	Ser	Cys	Leu
1				5					10					15	
Cys	Cys	Thr	Phe	Ala	Val	Gln	Tyr	Leu	Asp	Val	Phe	Gln	Thr	His	Val
			20					25					30		
Arg	Met	Lys	Arg	Arg	Asn	Tyr	Phe	Ile	Phe	Ser	Cys	Leu	Met	Leu	Met
		35					40					45			
Ala	Pro	Ala	Ala	Val	Gln	Ala	Gln	Phe	Asp	Lys	Gly	Leu	Asn	Tyr	Lys
	50					55					60				
Ile	Glu	Thr	Ser	Ala	Thr	Val	Ser	Gly	Gly	His	Asn	Thr	Pro	Phe	Trp
65					70					75					80
Leu	Val	Ala	Asn	Lys	His	Gly	Leu	Ser	Ser	Ile	Arg	Lys	Asn	Asn	Ala
				85					90					95	
Tyr	Leu	Asp	Ala	Gly	Ile	Phe	Arg	Asp	Leu	Glu	Lys	Asp	Lys	Lys	Phe
		100						105					110		
Ser	Tyr	Ala	Phe	Gly	Leu	Glu	Met	Val	Gly	Ala	Ser	Arg	Phe	Thr	Ser
		115					120					125			
Lys	Phe	Phe	Ile	Gln	Gln	Ala	Tyr	Val	Asp	Leu	Arg	Tyr	Arg	Gly	Met
	130					135					140				
Glu	Ile	Ser	Val	Gly	Ser	Lys	Glu	Arg	Gly	Asn	Glu	Met	Lys	Asn	Asp
145					150					155					160
Gln	Leu	Ser	Ser	Gly	Ser	Met	Thr	Phe	Ser	Thr	Asn	Ala	Arg	Pro	Ile
				165					170					175	
Pro	Gln	Val	Arg	Val	Ser	Ile	Pro	Glu	Tyr	Ile	Pro	Phe	Pro	Trp	Thr
			180					185					190		
Lys	Asn	Trp	Leu	His	Ile	Lys	Gly	His	Val	Ala	Tyr	Gly	Met	Phe	Thr
		195					200					205			
Asp	Glu	Lys	Phe	Gln	Glu	Arg	Phe	Thr	Ala	Gly	Arg	Ser	Lys	Tyr	Thr
	210					215					220				
Lys	Glu	Thr	Leu	Phe	His	Ser	Lys	Ala	Ala	Phe	Leu	Lys	Val	Glu	Asn
225					230					235					240
Leu	Gln	Lys	Ser	Pro	Val	Ser	Val	Glu	Leu	Gly	Ile	Glu	Met	Ala	Ala
				245					250					255	

Gln Phe Gly Gly Asp Cys Tyr Tyr Pro Asp Gly Thr Val Leu Arg Thr

260 265 270
 Pro Asp Ser Trp Lys Asp Phe Phe Arg Ile Phe Phe Pro Ser Asn Gly
 275 280 285
 Asp Ser Gly Ala Ser Glu Ser Asp Gln Ile Asn Ile Leu Gly Asn His
 290 295 300
 Val Gly Ser Tyr Ser Ala Val Gly Tyr His Phe Pro Thr Trp Lys
 305 310 315 320
 Ile Lys Ala Tyr Trp Glu His Phe Phe Glu Asp Arg Ser Gly Met Thr
 325 330 335
 Leu Thr Tyr Gly Met Trp Arg Asp Cys Leu Ala Gly Leu Glu Val Thr
 340 345 350
 Leu Pro Glu Asn Pro Phe Val Lys Thr Ile Val Gly Glu Phe Leu Tyr
 355 360 365
 Thr Lys His Gln Ser Gly Ala Phe His Tyr Phe Ala Thr Pro Ala Ile
 370 375 380
 Asp His Ser Phe Thr Gly Ala Asp Asn Tyr Tyr Asn Asn Ser Gln Tyr
 385 390 395 400
 Ala Gly Trp Glu His Trp Gly Gln Gly Ile Gly Asn Pro Leu Val Thr
 405 410 415
 Ser Pro Ile Tyr Asn Lys Asp Gly Asn Leu Ala Phe Glu Ser Asn Arg
 420 425 430
 Val Lys Gly Phe His Ile Gly Leu Asn Gly Ser Pro Thr Pro Glu Ile
 435 440 445
 Asp Tyr Arg Ile Leu Val Ser Val Ala Lys His Trp Gly Thr Tyr Gly
 450 455 460
 Ser Pro Tyr Arg Asn Ile Arg Arg Asn Gln Asn Gly Leu Leu Glu Val
 465 470 475 480
 Thr Tyr Lys Pro Glu Gln Ile Arg Gly Trp Ser Phe Thr Leu Ala Gly
 485 490 495
 Ala Val Asp Gly Gly Asn Met Leu Gly Glu Ser Trp Gly Gly Met Leu
 500 505 510
 Thr Ile Arg Lys Thr Gly Leu Ile Gly Lys Lys Lys
 515 520

<210> 8466

<211> 118

<212> PRT

<213> B.fragilis

<400> 8466

Tyr Ser Phe Tyr Leu Cys Ser Ala Leu Val Cys Ile Leu Arg Val Pro
 1 5 10 15
 Gly Met Gln Leu Lys Gly Asn Gln Val Gln Ile Leu Asn Ser Pro Ala
 20 25 30
 Ala Val Ser Phe Thr Ser Asp Cys Cys Lys Gln Pro Pro Leu Ala Thr
 35 40 45
 Gly Lys Arg Phe Leu Gly Arg Arg Leu Ser Thr Glu Thr Ser Gln Lys
 50 55 60
 Thr Cys Leu Cys Ile Phe Phe Ile Ala Phe Glu Glu Lys Ala Leu Ser
 65 70 75 80
 Leu Met Ser Arg Asn Tyr Ser Ile Arg His Phe Ile His His Ser Asp
 85 90 95
 Ser Glu Lys Val Ser Tyr Asp Asn Lys Leu Cys Gln Val Tyr Leu Val
 100 105 110
 Cys Pro Ala Glu Val Ser
 115

<210> 8467

<211> 597

<212> PRT

<213> B.fragilis

<400> 8467

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Asn Ile Thr Tyr Met Asn Leu Pro Val Thr Gln Lys His Phe Leu Ser
1      5      10      15
Phe Ser Arg Lys Leu Phe Leu Ser Val Ile Ser Leu Phe Leu Val Phe
20      25      30
Ala Ala Cys Phe Met Ala Tyr Gln Tyr Gln Arg Glu Lys Glu Tyr Lys
35      40      45
Val Glu Leu Leu Asn Ile Gln Leu Gln Asp Cys Asn Asn Leu Leu Tyr
50      55      60
Glu Lys Leu Tyr Asp His Pro Gln Asp Met Thr Glu Val Ile Ser Asp
65      70      75      80
Tyr Leu Gln His Asn Val Leu Lys Asp Leu Arg Ile Thr Val Val Asn
85      90      95
Leu Asp Gly Lys Val Leu Phe Asp Ser Gln Glu Gln Asn Val Glu Gln
100     105     110
Leu Gly Asn His Leu Asp Arg Glu Glu Val Gln Lys Ala Leu Tyr Asn
115     120     125
Gly Val Gly Phe Asp Val Arg Arg Thr Ser Glu Thr Thr Gly Val Pro
130     135     140
Tyr Phe Tyr Ser Ala Thr Leu Tyr Lys Asp Tyr Ile Ile Arg Ser Ala
145     150     155     160
Leu Pro Tyr Ser Val Ser Leu Ile Asn Asn Leu Lys Ala Asp Pro His
165     170     175
Tyr Ile Trp Phe Thr Val Ile Val Thr Leu Leu Leu Met Ile Ile Phe
180     185     190
Tyr Lys Phe Thr Asn Lys Leu Gly Thr Ser Ile Ser Gln Leu Arg Glu
195     200     205
Phe Ala Met Arg Ala Asp Arg Asn Glu Pro Ile Glu Met Ala Met Gln
210     215     220
Ser Ala Phe Pro His Asn Glu Leu Gly Glu Ile Ser Gln His Ile Ile
225     230     235     240
Gln Ile Tyr Lys Arg Leu His Glu Thr Lys Glu Ala Leu Tyr Ile Glu
245     250     255
Arg Glu Lys Leu Ile Thr His Leu Gln Ile Ser His Glu Gly Leu Gly
260     265     270
Val Phe Asn Lys Asp Lys Lys Glu Ile Leu Val Asn Asn Leu Phe Thr
275     280     285
Gln Tyr Ser Asn Leu Ile Ser Asp Ser Asn Leu Glu Thr Ala Glu Glu
290     295     300
Val Phe Asn Ile Ser Glu Leu Lys Glu Ile Thr Asp Phe Ile Asn Lys
305     310     315     320
Ala Pro Lys Arg Pro Val Gly Lys Glu Glu Lys Arg Met Ser Ile Thr
325     330     335
Ile Asn Lys Asn Gly Lys Thr Phe Ile Val Glu Cys Ile Ile Phe Gln
340     345     350
Asp Met Ser Phe Glu Ile Ser Ile Asn Asp Val Thr Gln Glu Glu Glu
355     360     365
Gln Ile Arg Leu Lys Arg Gln Leu Thr Gln Asn Ile Ala His Glu Leu
370     375     380
Lys Thr Pro Val Ser Ser Ile Gln Gly Tyr Leu Glu Thr Ile Val Asn
385     390     395     400
Asn Glu Asn Leu Pro Lys Glu Lys Met Asn Val Phe Leu Glu Arg Cys
405     410     415
Tyr Ala Gln Ser Asn Arg Leu Ser Arg Leu Leu Arg Asp Ile Ser Val
420     425     430
Leu Thr Arg Met Asp Glu Ala Ala Asn Met Ile Asp Met Glu Lys Met

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435 440 445
 Asp Ile Ser Val Leu Val Thr Asn Ile Val Asn Glu Val Ser Leu Glu
 450 455 460
 Leu Glu Glu Lys His Ile Thr Val Val Asn Ser Leu Lys Lys Glu Ile
 465 470 475 480
 Gln Ile Arg Gly Asn Tyr Ser Leu Leu Tyr Ser Ile Phe Arg Asn Leu
 485 490 495
 Met Asp Asn Ala Ile Ala Tyr Ala Gly Asn Asn Ile Gln Ile His Ile
 500 505 510
 Asn Cys Phe Arg Glu Asp Glu Lys Phe Tyr Tyr Phe Ser Phe Ala Asp
 515 520 525
 Thr Gly Val Gly Val Ser Pro Glu His Leu Asn Arg Leu Phe Glu Arg
 530 535 540
 Phe Tyr Arg Val Asp Lys Gly Arg Ser Arg Lys Leu Gly Gly Thr Gly
 545 550 555 560
 Leu Gly Leu Ala Ile Val Lys Asn Ala Val Ile Leu His Gly Gly Asn
 565 570 575
 Ile Ser Ala Lys Asn Ser Gln Gly Gly Gly Leu Glu Phe Val Phe Thr
 580 585 590
 Leu Ala Lys Glu Arg
 595

<210> 8468
 <211> 323
 <212> PRT
 <213> B.fragilis

<400> 8468
 Lys Tyr Tyr Leu Cys Pro Ile Ser Lys Gln Lys Ile Met Met Asn Asn
 1 5 10 15
 Val Lys Tyr Leu Ser Phe Ala Leu Ile Leu Ala Phe Ser Ala Cys Lys
 20 25 30
 Ser Gly Ser Ala Ser Ser Gln Glu Pro Ser Glu Lys Gln Asp Thr Val
 35 40 45
 Lys Ile Phe Asn Leu Pro Gln Ile Pro Val Val Leu Asn Thr Val Glu
 50 55 60
 Gln Arg Thr Asp Tyr Met Val Lys His Tyr Trp Asp Arg Phe Asp Phe
 65 70 75 80
 Ser Asp Thr Thr Tyr Ile Asn Gln Ala Glu Val Pro Glu Gln Ala Trp
 85 90 95
 Val Asp Tyr Cys Asp Leu Leu Glu His Val Pro Leu Pro Val Ala Gln
 100 105 110
 Thr Ala Met Lys Glu Thr Phe Asn Arg Ala Glu Lys Asn Arg Lys Met
 115 120 125
 Leu His Phe Phe Glu Glu Leu Ala Asp Lys Tyr Leu Tyr Asp Pro Asn
 130 135 140
 Ser Pro Met Arg Asn Glu Glu Phe Tyr Ile Pro Val Leu Glu Ala Leu
 145 150 155 160
 Ile Ala Ser Pro Ala Leu Asp Glu Thr Ala Lys Ile Arg Pro Gln Ala
 165 170 175
 Arg Leu Glu Leu Ala Gln Lys Asn Arg Leu Gly Thr Lys Ala Leu Asn
 180 185 190
 Phe Thr Tyr Thr Leu Asp Ser Gly Ala Lys Gly Thr Leu Tyr Gln Phe
 195 200 205
 Pro Ala Glu Tyr Thr Leu Leu Phe Ile Asn Asn Pro Gly Cys His Ala
 210 215 220
 Cys Ala Glu Met Ile Glu Gly Leu Lys Ala Ser Pro Val Ile Asn Gly
 225 230 235 240
 Phe Thr Ala Ala Lys Lys Leu Lys Val Leu Ser Ile Tyr Pro Asp Glu

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<210> 8469
<211> 632
<212> PRT
<213> B.fragilis
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Tyr	Thr	Asn	His	Leu	Leu	Ser	His	Ser	Ile	Ile	Met	Thr	Pro	Tyr	Leu
1				5					10					15	
Gln	Val	Asp	Asn	Leu	Thr	Lys	Ser	Phe	Gly	Asp	Leu	Val	Leu	Phe	Glu
			20					25					30		
Asn	Ile	Ser	Phe	Gly	Ile	Ala	Glu	Gly	Gln	Arg	Ile	Gly	Leu	Ile	Ala
		35				40					45				
Lys	Asn	Gly	Thr	Gly	Lys	Thr	Thr	Leu	Leu	Asn	Ile	Leu	Ser	Gly	Lys
	50					55				60					
Glu	Gly	Tyr	Asp	Ser	Gly	Asn	Ile	Val	Phe	Arg	Arg	Asp	Leu	Arg	Val
65					70					75					80
Asp	Tyr	Leu	Glu	Gln	Asp	Pro	Gln	Tyr	Pro	Glu	Glu	Leu	Thr	Val	Leu
				85					90					95	
Glu	Ala	Cys	Phe	His	His	Gly	Asn	Ser	Thr	Val	Glu	Leu	Ile	Lys	Glu
			100					105					110		
Tyr	Glu	Arg	Cys	Met	Glu	Thr	Glu	Gly	His	Pro	Gly	Leu	Asp	Asp	Leu
		115					120					125			
Leu	Val	Arg	Met	Asp	His	Glu	Lys	Ala	Trp	Glu	Tyr	Glu	Gln	Lys	Ala
	130					135					140				
Lys	Gln	Ile	Leu	Ser	Gln	Leu	Lys	Ile	Arg	Asn	Phe	Asp	Gln	Gln	Val
145					150					155					160
Lys	His	Leu	Ser	Gly	Gly	Gln	Leu	Lys	Arg	Val	Ala	Leu	Ala	Asn	Ala
				165					170					175	
Leu	Ile	Thr	Glu	Pro	Asp	Leu	Leu	Ile	Leu	Asp	Glu	Pro	Thr	Asn	His
			180					185					190		
Leu	Asp	Leu	Asp	Met	Thr	Glu	Trp	Leu	Glu	Glu	Tyr	Leu	Arg	Arg	Thr
		195					200					205			
Asn	Leu	Ser	Leu	Leu	Met	Val	Thr	His	Asp	Arg	Tyr	Phe	Leu	Asp	Arg
	210					215					220				
Val	Cys	Ser	Glu	Ile	Ile	Glu	Ile	Asp	Asn	Arg	Gln	Val	Tyr	Gln	Tyr
225					230					235					240
Lys	Gly	Asn	Tyr	Ser	Tyr	Tyr	Leu	Glu	Lys	Arg	Gln	Glu	Arg	Ile	Glu
				245					250					255	
Ala	Lys	Ser	Val	Glu	Ile	Glu	Arg	Ala	Asn	Asn	Leu	Tyr	Arg	Thr	Glu
			260					265					270		
Leu	Asp	Trp	Met	Arg	Arg	Met	Pro	Gln	Ala	Arg	Gly	His	Lys	Ala	Arg
		275					280					285			
Tyr	Arg	Glu	Asp	Ala	Phe	Tyr	Glu	Leu	Glu	Lys	Val	Ala	Lys	Gln	Arg
	290					295					300				
Phe	Asn	Asn	Asp	Asn	Val	Lys	Leu	Glu	Val	Lys	Ala	Ser	Tyr	Ile	Gly
305					310					315					320
Ser	Lys	Ile	Phe	Glu	Ala	Asp	His	Leu	Tyr	Lys	Ser	Phe	Gly	Asp	Leu

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          325          330          335
Lys Ile Leu Glu Asp Phe Ser Tyr Ile Phe Ala Arg Tyr Glu Lys Met
          340          345          350
Gly Ile Val Gly Asn Asn Gly Thr Gly Lys Ser Thr Phe Ile Lys Ile
          355          360          365
Leu Met Gly Gln Val Gln Pro Asp Ser Gly Thr Leu Asp Ile Gly Glu
          370          375          380
Thr Val Arg Phe Gly Tyr Tyr Ser Gln Asp Gly Leu Gln Phe Asp Glu
385          390          395          400
Gln Met Lys Val Ile Asp Val Val Gln Asp Ile Ala Glu Val Ile Glu
          405          410          415
Leu Gly Asn Gly Lys Lys Leu Thr Ala Ser Gln Phe Leu Gln His Phe
          420          425          430
Leu Phe Thr Pro Glu Thr Gln His Ser Tyr Val Tyr Lys Leu Ser Gly
          435          440          445
Gly Glu Arg Arg Arg Leu Tyr Leu Cys Thr Val Leu Met Arg Asn Pro
          450          455          460
Asn Phe Leu Val Leu Asp Glu Pro Thr Asn Asp Leu Asp Ile Ile Thr
465          470          475          480
Leu Asn Val Leu Glu Glu Tyr Leu Gln Asn Phe Lys Gly Cys Val Ile
          485          490          495
Val Val Ser His Asp Arg Tyr Phe Met Asp Lys Val Val Asp His Leu
          500          505          510
Leu Val Phe Asn Gly Gln Gly Asp Ile Arg Asp Phe Pro Gly Asn Tyr
          515          520          525
Ser Asp Tyr Arg Asp Trp Lys Glu Ala Lys Ser Gln Lys Glu Lys Glu
          530          535          540
Ala Glu Lys Pro Gln Glu Glu Lys Thr Ala Arg Val Arg Leu Asn Glu
545          550          555          560
Lys Arg Lys Met Ser Phe Lys Glu Lys Arg Glu Phe Glu Gln Leu Glu
          565          570          575
Lys Glu Ile Ala Glu Leu Glu Thr Glu Lys Leu Gln Ile Glu Glu Leu
          580          585          590
Leu Cys Ser Gly Thr Leu Ser Val Asp Glu Leu Thr Glu Lys Ser Lys
          595          600          605
Arg Leu Pro Glu Val Asn Asp Leu Ile Asp Glu Lys Thr Met Arg Trp
          610          615          620
Leu Glu Leu Ser Glu Ile Glu Ser
625          630

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<210> 8470

<211> 284

<212> PRT

<213> B.fragilis

<400> 8470

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Gly Tyr Gln His Ser Glu Ser Asn Met Ile Gln Gly Lys Lys Phe Ile
1          5          10          15
Ser Pro Gly Thr Trp Phe Ser Met Ile Tyr Pro Ser Asp Trp Ser Glu
          20          25          30
Phe Glu Asp Gly Glu Gly Ser Phe Leu Phe Tyr Asn Pro Glu His Trp
          35          40          45
Thr Gly Asn Phe Arg Ile Ser Ala Tyr Lys Glu Asp Ala Ala Ala Pro
          50          55          60
Gly Gly Met Asn Tyr Gly Lys Asp Ser Val Arg Gln Glu Leu Lys Glu
65          70          75          80
Asn Pro Ser Ala Ser Leu Val Lys Val Gly His Leu Glu Cys Ala Tyr
          85          90          95
Ser Lys Glu Met Phe Glu Glu Glu Gly Thr Tyr Tyr Thr Ser His Leu

```

	100		105		110
Trp Val Thr Gly Ile Asp Asn Val Ala Phe Glu Cys Ser Phe Thr Val					
115			120		125
Pro Lys Gly Glu His Val Asp Glu Ala Glu Lys Ile Ile Ser Ser Leu					
130			135		140
Glu Ile Arg Lys Asp Gly Gln Lys Tyr Pro Ala Glu Ile Ile Pro Ile					
145			150		155
Arg Leu Ser Glu Ile Tyr Gln Val Asn Glu Ala Tyr Glu Trp Val Thr					
	165		170		175
Asp Thr Val Lys Thr Gln Leu Lys Lys Asp Phe Gln Gly Leu Glu Glu					
	180		185		190
Asp Leu Gln Lys Ile Gln Asp Val Ile Asp Ser Gly Val Leu Ser Pro					
	195		200		205
Lys Lys Lys Glu Pro Trp Leu Ala Phe Gly Ile Ala Ile Cys Thr Ile					
	210		215		220
Leu Ala Asn Glu Val Glu Gly Met Glu Trp Met Thr Leu Val Asp Gly					
225			230		235
Asn Arg Glu Val Pro Val Leu Arg Tyr Glu Gly Ser Glu Gln Leu Ile					
	245		250		255
Asp Pro Met Lys Leu Leu Trp Ser Arg Val Lys Ala Gly Glu Ala Cys					
	260		265		270
Glu Val Ala Glu Ala Tyr Lys Gln Ala Leu Ile His					
	275		280		

<210> 8471

<211> 129

<212> PRT

<213> B.fragilis

<400> 8471

Glu Glu Met Lys Lys Gly Ile Leu Leu Leu Phe Val Val Leu Met Gly					
1		5		10	15
Phe Thr Ser Cys Gly Lys Lys Phe Gly His Arg Tyr Leu Asp Gly Met					
	20		25		30
Trp Gln Met Gln Arg Ile Glu Tyr Lys Asp Gly Asn Ile Asp Thr Pro					
	35		40		45
Leu Asp Thr Tyr Phe Ser Phe Gln Met Asp Ile Ile His Leu Arg Lys					
	50		55		60
Leu Gly Asn Ser Glu Phe Tyr Gly Lys Tyr Val Tyr Glu Asn Asp Ser					
65		70		75	80
Met His Ile Gln Val Leu Asp Ala Thr Ala Glu Gln Met Lys Val Phe					
	85		90		95
Gly Met Asp Gly Arg Val Gln Asp Phe Ala Val Glu Lys Leu Asn Ser					
	100		105		110
Asn Lys Leu Val Leu Gln Ser Asp Tyr Ala Arg Leu Glu Phe Arg Lys					
	115		120		125

Tyr

<210> 8472

<211> 582

<212> PRT

<213> B.fragilis

<400> 8472

Asp Thr Lys Asp Thr Pro Asp Ile Glu Ser Val Ile Ile Lys Arg Ile					
1		5		10	15
Ser Asn Met Lys Thr Thr Ser Phe Asn Asn Gly Arg Ser Asn Ser Ser					
	20		25		30

Ser Leu Phe Arg Arg Gly Ile Gly Gly Val Ser Phe Phe Phe Leu Leu
 35 40 45
 Phe Leu Leu Leu Phe Ala Ser Cys Asp Asp Leu Glu Asp Thr Asp Thr
 50 55 60
 Pro Ser Gly Gly Asp Gly Gly Met Pro Val Glu Thr Gly Thr Ala Glu
 65 70 75 80
 Leu Tyr Ile Leu Ser Glu Gly Leu Phe Asn Leu Asn Asn Ser Ser Leu
 85 90 95
 Ala Leu Tyr Ser Phe Lys Asn Asn Gln Leu Asn Thr Asp Tyr Phe Arg
 100 105 110
 Ser Ile Asn Arg Arg Gly Leu Gly Asp Thr Ala Asn Asp Met Gly Ile
 115 120 125
 Tyr Gly Ser Lys Leu Tyr Ile Val Val Asn Val Ser Ser Gln Ile Glu
 130 135 140
 Val Val Asp Leu Gln Ser Gly Lys Ser Val Lys Gln Ile Pro Met Leu
 145 150 155 160
 Ser Glu Asn Gly Ser Ser Arg Gln Pro Arg Asn Ile Ala Phe Asp Gly
 165 170 175
 Gly Lys Ala Tyr Val Cys Ser Phe Asp Gly Thr Val Ala Arg Ile Asp
 180 185 190
 Thr Ala Ser Leu Ser Ile Asp Ala Leu Thr Arg Ala Gly Arg Asn Pro
 195 200 205
 Asp Gly Ile Cys Val Gln Asn Gly Lys Leu Tyr Val Ser Asn Ser Gly
 210 215 220
 Gly Leu Asp Trp Glu Gly Ile Gly Val Asp Arg Thr Val Ser Val Ile
 225 230 235 240
 Asp Ile Pro Ser Phe Thr Glu Ile Lys Lys Ile Glu Val Gly Pro Asn
 245 250 255
 Pro Gly Asp Ile Gln Ala Gly Pro Asp Gly Ser Val Tyr Val Ala Thr
 260 265 270
 His Gly Glu Asn Ile Glu Ala Gly Asp Tyr His Phe Val Gln Ile Asp
 275 280 285
 Gly His Thr Asp Gln Val Val Arg Thr Phe Asp Glu Lys Val Leu Ser
 290 295 300
 Phe Thr Ile His Asp Asn Met Ala Tyr Leu Tyr Asn Tyr Asp Tyr Arg
 305 310 315 320
 Thr Gln Asp Ser Gln Ile Lys Val Phe Asn Leu Lys Ala Gly Lys Thr
 325 330 335
 Glu Arg Glu Asn Phe Ile Thr Asp Gly Thr Thr Ile Arg Thr Pro Tyr
 340 345 350
 Ser Ile Ser Val Asn Pro Tyr Ser Gly Asn Val Tyr Ile Thr Asp Ala
 355 360 365
 Tyr Asp Tyr Lys Val Lys Gly Asp Val Leu Cys Phe Ser Pro Gln Gly
 370 375 380
 Gln Leu Ile Phe Lys Leu Pro Asn Val Gly Ile Asn Ser Asn Thr Val
 385 390 395 400
 Leu Phe Arg Asn Lys Ala Ser Gln Gly Asn Pro Asp Glu Asn Pro Ala
 405 410 415
 Asp Ala Glu Ala Gly Ala Phe Ala Asn Lys Val Leu Glu Tyr Asn Pro
 420 425 430
 Ala Pro Ser Gln Tyr Met Asn Thr Ser Tyr Thr Ala Tyr Glu Glu Gly
 435 440 445
 Phe Thr Gly Ile Gln Val Leu Ala Arg Ala Thr Glu Leu Leu Gln Asp
 450 455 460
 Arg Thr Thr Cys Leu Phe Thr Leu Gly Gly Phe Gly Gly Asn Ile Thr
 465 470 475 480
 Val Gly Phe Asp His Thr Ile Pro Asn Val Pro Gly Glu Tyr Asp Phe
 485 490 495
 Lys Ile Tyr Gly Asn Ala Tyr Tyr Asp Met Tyr Gly Thr Leu Leu Asp

```

          500              505              510
Lys Pro Gly Gly Asn Ser Glu Pro Gly Ile Val Leu Val Ser Lys Asp
          515              520              525
Thr Asn Gly Asn Gly Leu Pro Asp Asp Glu Trp Tyr Glu Leu Ala Gly
          530              535              540
Ser Glu Tyr Asn Ser Pro Ala Thr Ile Arg Asn Tyr Glu Ile Ile Tyr
          545              550              555              560
Tyr Pro Ser Pro Ser Ala Asp Gly Asp Val Lys Trp Lys Asp Asn Gln
          565              570              575
Gly Lys Glu Gly Tyr Ile
          580

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<210> 8473

<211> 413

<212> PRT

<213> B.fragilis

<400> 8473

```

Ile Glu Thr Cys Glu Pro Asp Arg Cys Arg Pro Ser Ser Pro Val Val
1          5          10          15
Lys Thr Thr Ala Val Phe Leu Ala Asn Val Glu Lys Thr Gln Phe Pro
          20          25          30
Ile Pro Val Ser Gly Gly Gly Thr Asn Tyr Ala Asp Val Leu Thr Asn
          35          40          45
Tyr Gln Thr Thr Arg Ala Asn Ala Arg Ile Val Leu Pro Gly Ala Glu
          50          55          60
Phe Thr Asp Thr Ser Glu Phe Tyr Leu Ala Asn Val Ser Phe Ser Asp
          65          70          75          80
Thr Ser Ala Gln Pro Tyr Val Leu Leu Gln Arg Ile Ile Ser Met Leu
          85          90          95
Asn Leu Arg Arg Val Phe Val Asp Ala Gln Thr Ala Leu Asn Ser Leu
          100         105         110
Thr Asn Asn Ile Val Thr Gln Val Gly Tyr Lys Asn Ile Ile Arg Thr
          115         120         125
Thr Val Gln Gly Ile Leu Pro Gly Leu Leu Lys Thr Ala Met Asn Leu
          130         135         140
Gly Pro Val Gly Asn Leu Val Tyr Asp Val Val Gly Gly Leu Asp Ala
          145         150         155         160
Ala Val Asn Leu Val Val Ala Ala Leu Val Glu Pro Val Val Asp Ala
          165         170         175
Leu Tyr Ala Gln Leu Leu Gln Gly Leu Val Asn Gln Ile Gly Leu Thr
          180         185         190
Leu Ser Gly Asn Ala Thr Gln Asn Gly Ala Leu Gly Ala Leu Gly Asp
          195         200         205
Leu Leu Asn Pro Trp Arg Gly Ser Asp Ala Ala Tyr Ala Leu Val Thr
          210         215         220
Ile Asn Asn Phe Pro Lys Thr Met Asp Leu Asp Leu Asn Val Lys Asp
          225         230         235         240
Phe Tyr Thr Gly Asn His Arg Phe Arg Tyr Gly Phe Thr Pro Thr Pro
          245         250         255
Gly Thr Thr Asn Ser Glu Lys Asp Ile Leu Ile Arg Gly Phe His Gly
          260         265         270
Leu Tyr Asp Val Arg Glu Ile His Val Ala Lys Pro Gly Leu Ile Ser
          275         280         285
Gly Leu Leu Val Asp Asp Val Ile Asp Gly Pro Leu Leu Leu Asn Gly
          290         295         300
Val Phe Val Asn Ile Thr Asp Pro Ile Gln Ala Thr Val Asn Thr Asn
          305         310         315         320
Tyr Arg Tyr Arg Ser Asn Tyr Ser Phe Val Ser Leu Gly Leu Lys Ser

```

325 330 335
 Tyr Ala Gln Gln Ser Asp Gly Asn His Ser Leu Thr Leu Ser Val Gln
 340 345 350
 Leu Lys Asn Ile Ala Asn Leu Asp Gly Ile Leu Gly Gly Ile Pro Val
 355 360 365
 Leu Gly Pro Val Leu Asn Gly Thr Val Arg Leu Leu Ile Gly Asn Ile
 370 375 380
 Thr Val Thr Val Pro Val Asn Leu Pro Leu Leu Gly Thr Asp Asn Leu
 385 390 395 400
 Thr Leu Ser Gly Ser Trp Ser Thr Pro Pro Val Gln Tyr
 405 410

<210> 8474
 <211> 702
 <212> PRT
 <213> B.fragilis

<400> 8474
 Thr Leu Pro Ser Leu Phe Ser Val Ser Gly Arg Ser Glu Leu Val Arg
 1 5 10 15
 Thr Phe Tyr Gln Lys Thr Lys Met Asn Ile Leu Arg Leu Pro Lys
 20 25 30
 Leu Leu Tyr Ser Cys Val Ala Phe Cys Cys Cys Gln Ala Leu Thr Val
 35 40 45
 Ser Leu Ser Ala Gln Gln Gln Lys Ala Asp Thr Ala Arg Thr Tyr Ser
 50 55 60
 Ile Pro Glu Val Thr Val Ala Glu Ala Tyr His Thr Ser Glu Val Arg
 65 70 75 80
 Ala Met Ala Pro Thr Gln Val Phe Ser Lys Glu Glu Leu Lys Ser Leu
 85 90 95
 Asn Val Leu Gln Val Ser Asp Ala Val Lys His Phe Ala Gly Val Thr
 100 105 110
 Val Lys Asp Tyr Gly Gly Ile Gly Gly Leu Lys Thr Val Ser Leu Arg
 115 120 125
 Ser Leu Gly Ala Glu His Thr Ala Val Gly Tyr Asp Gly Ile Thr Ile
 130 135 140
 Ser Asp Cys Gln Thr Gly Gln Ile Asp Ile Gly Arg Phe Ser Leu Asp
 145 150 155 160
 Asn Val Asp Arg Leu Ser Leu Ser Asn Gly Gln Ser Asp Asn Ile Phe
 165 170 175
 Gln Pro Ala Arg Phe Phe Ala Ser Ala Gly Ile Leu Asn Ile Gln Thr
 180 185 190
 Leu Thr Pro Gln Phe Lys Asp Asn Arg Arg Thr Asn Leu Ser Ala Ser
 195 200 205
 Phe Lys Thr Gly Ser Trp Gly Leu Val Asn Pro Ser Leu Leu Leu Glu
 210 215 220
 Gln Lys Leu Ser Arg Lys Trp Val Leu Ser Ala Asn Gly Glu Trp Met
 225 230 235 240
 Ser Ala Asp Gly His Tyr Pro Phe Thr Leu His Tyr Gly Glu Asp Asn
 245 250 255
 Asp Leu Thr Ser Arg Glu Lys Arg Lys Asn Thr Glu Val Lys Asn Leu
 260 265 270
 Arg Ala Glu Ala Gly Leu Phe Gly Asn Phe Ser Asp Thr Glu Gln Trp
 275 280 285
 Arg Leu Lys Ala Tyr Tyr Tyr Gln Ser Ser Arg Gly Leu Pro Asn Ala
 290 295 300
 Thr Thr Tyr Tyr Tyr Asp Tyr Ser Ser Gln His Leu Trp Asp Lys Asn
 305 310 315 320
 Val Phe Val Gln Ser Gln Tyr Lys Lys Glu Phe Ser Arg Gln Trp Val

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                325                330                335
Phe Gln Thr Ser Ala Lys Trp Asn Trp Ser Tyr Gln Arg Tyr Leu Asp
                340                345                350
Pro Asp Tyr Lys Gly Ser Glu Gly Lys Thr Glu Asn Ser Tyr Tyr Gln
                355                360                365
Gln Glu Tyr Tyr Leu Ser Ala Ser Ala Leu Tyr Arg Val Leu Ser Asn
                370                375                380
Leu Ser Phe Ser Leu Ser Thr Asp Ala Ser Ile Asn Arg Leu Asn Ala
385                390                395                400
Asn Leu Lys Asp Phe Ala Tyr Pro Thr Arg Tyr Ser Trp Leu Thr Ala
                405                410                415
Phe Ala Gly Lys Tyr Val Asn Asp Trp Leu Thr Ala Ser Ala Ser Val
                420                425                430
Leu Ala Thr Val Ile Asn Glu Glu Val Arg Gln Gly Ser Ala Ala Ala
                435                440                445
Asn Arg Arg Lys Leu Ser Pro Tyr Val Ser Ala Ser Phe Lys Pro Phe
450                455                460
Ala Ser Glu Glu Phe Arg Ile Arg Leu Phe Tyr Lys Asp Ile Phe Arg
465                470                475                480
Leu Pro Ser Phe Asn Asp Leu Tyr Tyr Gly Gln Val Gly Asn Thr Asn
                485                490                495
Leu Lys Pro Glu Ser Thr Thr Gln Tyr Asn Leu Gly Leu Thr Tyr Ser
                500                505                510
Arg Ser Ile Asn Glu Leu Ile Pro Tyr Val Ser Val Thr Ala Asp Ala
                515                520                525
Tyr Tyr Asn Lys Val Lys Asp Lys Ile Ile Ala Ile Pro Thr Lys Asn
                530                535                540
Leu Phe Ile Trp Ser Met Val Asn Leu Gly Lys Val Asp Ile Lys Gly
545                550                555                560
Ile Asp Ile Ala Gly Asn Ile Ser Leu Gln Pro Trp Glu Lys Leu Arg
                565                570                575
Val Asn Leu Ser Gly Asn Tyr Thr Tyr Gln Arg Ala Leu Asp Met Thr
                580                585                590
Glu Pro Gly Gly Lys Thr Tyr Lys Gln Gln Ile Ala Tyr Thr Pro Arg
                595                600                605
Val Ser Gly Ser Gly Gln Ala Gly Ile Glu Thr Pro Trp Val Asn Leu
                610                615                620
Ser Tyr Ser Phe Leu Phe Ser Gly Lys Arg Tyr Met Leu Gly Gln Asn
625                630                635                640
Leu Arg Glu Asn Arg Leu Asp Ser Tyr Ser Asp His Ser Val Ser Val
                645                650                655
Ser Arg Asp Leu Arg Ile Arg Asn Val Asn Thr Ser Leu Thr Val Glu
                660                665                670
Val Leu Asn Leu Leu Asp Lys Asn Tyr Glu Ile Val Lys Asn Phe Pro
                675                680                685
Met Pro Gly Arg Ser Val Arg Val Thr Met Lys Val Arg Tyr
690                695                700

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<210> 8475

<211> 483

<212> PRT

<213> B.fragilis

<400> 8475

```

Ser Leu Tyr Gly Asp Thr Gly Gly Gly Arg Phe Thr Leu Gln Glu Ile
1                5                10                15
Ile Ile Ser Leu Ile Tyr Ile Phe Asn Phe Cys Asn Met Lys Lys Ile
                20                25                30
Asn Ala Leu Ile Thr Lys Met Cys Phe Ile Ala Leu Cys Ala Leu Pro

```


<211> 239
 <212> PRT
 <213> B.fragilis

<400> 8476

```

Leu Cys Ser Ile Thr Leu Thr Lys Asn Thr Met Asn Asp Tyr Arg Ile
1           5           10           15
Leu Val Val Asp Asp Glu Glu Asp Leu Cys Glu Ile Leu Lys Phe Asn
           20           25           30
Leu Glu Asn Glu Gly Tyr Glu Val Asp Thr Ala Asn Ser Ala Glu Glu
           35           40           45
Ala Leu Lys Met Asn Ile Ser Ser Tyr His Leu Leu Leu Leu Asp Val
           50           55           60
Met Met Gly Glu Ile Ser Gly Phe Lys Met Ala Asn Leu Leu Lys Lys
65           70           75           80
Asp Lys Lys Thr Ala Gln Val Pro Ile Ile Phe Ile Thr Ala Lys Asp
           85           90           95
Thr Glu Asn Asp Thr Val Thr Gly Phe Asn Leu Gly Ala Asp Asp Tyr
           100          105          110
Ile Ser Lys Pro Phe Ser Leu Arg Glu Val Ile Ala Arg Val Lys Ala
           115          120          125
Val Leu Arg Arg Thr Ala Thr Ser Asp Thr Glu Lys Ala Pro Glu Gln
           130          135          140
Leu Cys Tyr Gln Ser Leu Val Ile Asp Ile Thr Lys Lys Lys Val Ser
145          150          155          160
Ile Asp Gly Glu Glu Val Pro Leu Thr Lys Lys Glu Phe Glu Ile Leu
           165          170          175
Phe Leu Leu Leu Gln Asn Lys Gly Arg Val Phe Ser Arg Glu Asp Ile
           180          185          190
Leu Ser Arg Ile Trp Ser Asp Glu Val Tyr Val Leu Asp Arg Thr Ile
           195          200          205
Asp Val Asn Ile Thr Arg Leu Arg Lys Lys Ile Gly Thr Tyr Gly Lys
           210          215          220
Arg Ile Val Thr Arg Leu Gly Tyr Gly Tyr Cys Phe Glu Thr Glu
225          230          235

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<210> 8477
 <211> 400
 <212> PRT
 <213> B.fragilis

<400> 8477

```

Asn Ile Lys Met Ile Lys Ile Asp Phe Lys Gln Arg Lys Arg Glu Val
1           5           10           15
Leu Trp Thr Val Val Ala Leu Phe Phe Ile Ala Ile Gly Val Ser Val
           20           25           30
Phe Lys Phe Ser Ser Ala Thr Ser Gly Phe Glu Ile Thr Asp Glu Leu
           35           40           45
Gly Gly Asn Ile Phe Pro Ser Ala Ile Leu Ser Val Ala Thr Thr Asp
           50           55           60
Ala Gln Val Ile Gln Pro Ala Asp Ser Ile Tyr Leu Gly Asn Pro Lys
65           70           75           80
Ser Cys Ile Ala Ile Lys Val Lys Ser Arg Ser Ala Tyr Ser Arg Val
           85           90           95
Arg Ile Asp Val Ala Glu Thr Pro Phe Phe Ser Arg Ser Val Ser Glu
           100          105          110
Phe Val Leu Asn Lys Pro Arg Thr Glu Tyr Thr Ile Tyr Pro Asp Ile
           115          120          125
Ile Trp Asn Tyr Glu Ala Leu Lys Asn Asn Asn Gln Ala Glu Pro Ile

```

130 135 140
 Ser Val Ala Val Thr Val Glu Met Asn Gly Glu Asp Leu Gly Gln Arg
 145 150 155 160
 Val Arg Thr Phe Ser Val Arg Ser Val Asn Glu Cys Leu Leu Gly Tyr
 165 170 175
 Val Thr Asn Gly Thr Lys Phe His Asp Thr Gly Ile Phe Phe Ala Ala
 180 185 190
 Tyr Val Asn Glu Glu Asn Pro Met Ile Asp Gln Leu Leu Arg Glu Ala
 195 200 205
 Leu Asn Thr Arg Ile Val Asn Arg Phe Leu Gly Tyr Gln Asn Pro Ala
 210 215 220
 Pro Gly Ala Val Asp Lys Gln Val Tyr Ala Leu Trp Asn Val Leu Gln
 225 230 235 240
 Lys Arg Lys Phe Arg Tyr Ser Ser Val Ser Asn Thr Ser Leu Ser Ser
 245 250 255
 Asn Val Val Tyr Ser Gln Arg Val Arg Thr Phe Asp Asp Ala Leu Glu
 260 265 270
 Ser Ser Gln Ile Asn Cys Val Asp Gly Ser Val Leu Phe Ala Ser Leu
 275 280 285
 Leu Arg Ala Ile Asn Ile Glu Pro Ile Leu Val Arg Thr Pro Gly His
 290 295 300
 Met Phe Val Gly Tyr Tyr Thr Asp Asn Ser His Lys Asp Met Asn Phe
 305 310 315 320
 Leu Glu Thr Thr Met Ile Gly Asp Val Asp Leu Asp Asp Phe Phe Pro
 325 330 335
 Asp Glu Gln Leu Asp Ser Thr Met Val Gly Lys Ser Gln Asn Gln Met
 340 345 350
 Ser Leu Leu Thr Phe Glu Lys Ser Lys Gln Tyr Ala Asn Lys Lys Tyr
 355 360 365
 Lys Glu Asn Glu Lys Gly Ile His Ser Gly Lys Leu Asn Tyr Met Phe
 370 375 380
 Leu Glu Ile Ser Lys Asp Val Arg Arg Lys Ile Gln Pro Ile Gly Lys
 385 390 395 400

<210> 8478

<211> 270

<212> PRT

<213> B.fragilis

<400> 8478

Arg Asn Arg Ile Met Asn Leu Thr Asn Tyr His Ser His Thr Leu Tyr
 1 5 10 15
 Cys Asp Gly Arg Ala Gly Met Glu Asp Phe Ile Arg Phe Ala Ile Ser
 20 25 30
 Arg Gly Phe Thr Ser Tyr Gly Ile Ser Ser His Ala Pro Leu Pro Phe
 35 40 45
 Pro Thr His Trp Thr Met Glu Trp Asp Arg Met Asp Asp Tyr Leu Asp
 50 55 60
 Glu Phe Thr Arg Met Lys Glu Lys Tyr Ala Ser Glu Ile Glu Leu Ala
 65 70 75 80
 Val Gly Leu Glu Ile Asp Tyr Leu Asn Glu Asp Ser Asn Pro Ser Val
 85 90 95
 Arg Arg Phe Gln Glu Leu Pro Leu Asp Tyr Arg Ile Gly Ser Val His
 100 105 110
 Leu Leu Tyr Asn Asp Arg Asp Glu Val Val Asp Ile Asp Val Cys Ala
 115 120 125
 Glu Val Phe Arg Asp Ile Val Asp Gln His Phe Gly Gly Asp Leu Asp
 130 135 140
 Arg Val Ile His Leu Tyr Tyr Asp Arg Leu Leu Arg Met Val Glu Leu

```

145          150          155          160
Gly Gly Phe Asp Ile Leu Gly His Ala Asp Lys Met His His Asn Ala
          165          170          175
Ala Cys Tyr Arg Pro Gly Leu Leu Asp Glu Ser Trp Tyr Asp Ala Leu
          180          185          190
Ile His Asp Tyr Phe Ser Ala Val Ala Ala Lys Gly Tyr Ile Val Glu
          195          200          205
Ile Asn Thr Lys Ala Leu His His Leu Asn Thr Phe Phe Pro Asn Glu
          210          215          220
Arg Tyr Phe Pro Leu Leu Lys Glu Leu Gly Val Arg Val Gln Val Asn
225          230          235          240
Ser Asp Ser His Tyr Pro Glu Arg Ile Asn Ser Gly Arg Pro Glu Ala
          245          250          255
Val Phe Ser Thr Ala Arg Lys Asp Gln Arg Arg Cys Arg Glu
          260          265          270

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<210> 8479

<211> 472

<212> PRT

<213> B.fragilis

<400> 8479

```

Tyr Phe Tyr Ser Ile Phe Val Leu Ser His Glu Asn Val Arg His Thr
1          5          10          15
Thr Ser Lys Leu Asn Met Glu Asn Lys Lys Gly Gln Pro Thr Thr Glu
          20          25          30
Ala Ile Phe Arg Gly Ile Gln Ser Gly Lys Val Leu Glu Leu Phe Asp
          35          40          45
Lys Leu Gln Tyr Gln Ile Ala Ile His Gly Asp Leu Thr Tyr Ser Asp
          50          55          60
Pro Trp Gly Glu Val His Arg Phe Arg Asp Gln Phe Glu Ser Ala Lys
65          70          75          80
Arg Asp Ser Asp Ser Pro Thr Ala Ile Gly Arg Tyr Pro Phe Ala Asp
          85          90          95
Val Trp Ile Gln Phe Tyr Glu Met Glu Val Lys Asp Tyr Ser Leu Leu
          100          105          110
Leu Glu Met Cys Leu Met Ala Ser His Ser Arg Thr Ser Val Trp Arg
          115          120          125
Lys Gly Phe Gly Thr Leu Leu Asp Lys Leu Tyr Gly Lys Ile Pro Leu
          130          135          140
Val Glu Tyr Glu Gln Ala Leu Glu His Leu Glu His Pro Tyr Ala Leu
145          150          155          160
Ser Glu Ile Leu Trp Ala Leu Glu Trp Asp Tyr Arg Asp Gln Glu Val
          165          170          175
Tyr Leu Lys Phe Ser His Tyr Ile Leu Leu His Leu Leu Pro Leu Leu
          180          185          190
Thr Pro Arg Asn Ile Thr Phe Leu Tyr Ser Val Arg Glu Trp Phe Gly
          195          200          205
Ser Thr Ser Asp His Arg Val Val Leu Val His Cys Tyr Trp Ile Asp
          210          215          220
Cys Trp Leu Lys His Pro Lys Arg Leu Leu Thr Asp Asp Glu Phe Thr
225          230          235          240
Ala Asp Phe Lys Ile Arg Tyr Glu Leu Tyr Arg Leu Cys Asn Phe Leu
          245          250          255
Ser Tyr Lys Glu Pro Tyr Pro Leu Glu Phe Pro Ile Arg Ala Val
          260          265          270
Asp Phe Gly Arg Ala Cys Gln Met Gly Leu Leu Ser Glu Asp Thr Leu
          275          280          285
Met Val Glu Leu Met Asp Arg Pro Leu Ser Pro Val Leu Ile Glu Glu

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```

      290              295              300
Ala Val Asp Phe Phe Tyr Lys Lys Asp Gln Lys Glu Lys Arg Leu Tyr
305              310              315              320
Thr Asp Cys Arg Asp Tyr Asp Phe Ser Arg Phe Lys Lys Val Leu Glu
      325              330              335
Lys Val Thr Glu Arg Ile Leu Asp Ile Glu Leu Glu Arg Gly Glu Ala
      340              345              350
Cys Thr Asp Val Thr Ser Leu Ala Arg Lys Leu Asp Gly Val Thr Gly
      355              360              365
Ala Glu Leu Met Ile Arg Leu Leu Ser Leu Met Gly Lys Glu Lys Phe
      370              375              380
Ile Arg Leu Asp Lys Trp Tyr Tyr Asp Thr Gly Glu Ser Arg Thr Gly
385              390              395              400
Met Phe Cys His Leu Met Leu His Cys Ala Pro Ser Pro Thr Asp Thr
      405              410              415
Pro Asp Trp Leu Lys Met Leu Val Glu Arg Ala Gly Ile Thr Pro Lys
      420              425              430
Arg Leu Val Glu Met Ala Val Tyr Ser Pro Pro Leu Ala Gly Asp Gly
      435              440              445
Arg Arg Gly Tyr Arg Met Glu Arg Pro Asp Leu Cys Gly Lys Phe Val
      450              455              460
Leu Cys Leu His Lys Gly Val Leu
465              470

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<210> 8480

<211> 409

<212> PRT

<213> B.fragilis

<400> 8480

```

Pro Gln Asn Ser Tyr Phe Met Ser Ser Thr Gln Lys Asn Phe Ala Leu
1              5              10              15
Pro Leu Ala Phe Ile Gly Ile Met Phe Phe Ala Ile Gly Phe Ala Leu
      20              25              30
Gly Ile Asn Ser Val Leu Ile Pro Val Leu Gln Gly Ser Leu Gly Ile
      35              40              45
Thr Ser Ala Glu Ser Tyr Leu Ile Ile Ala Ala Thr Phe Val Pro Phe
      50              55              60
Leu Ile Phe Gly Tyr Pro Ala Ser Met Thr Ile Lys Ala Ile Gly Tyr
65              70              75              80
Lys His Thr Met Ala Leu Ser Phe Ala Met Phe Ala Val Ala Phe Gly
      85              90              95
Leu Tyr Ile Pro Ser Ala Ser Gln Glu Ser Phe Pro Leu Phe Leu Val
      100              105              110
Ala Ser Phe Val Ser Gly Thr Ala Asn Ala Phe Leu Gln Ala Ser Val
      115              120              125
Asn Pro Tyr Ile Thr Ile Leu Gly Pro Leu Asp Ser Ala Ala Lys Arg
      130              135              140
Ile Ser Ile Met Gly Ile Cys Asn Lys Leu Ala Trp Pro Ile Pro Pro
145              150              155              160
Leu Phe Leu Ala Phe Leu Ile Gly Lys Glu Val Ser Asp Ile Thr Val
      165              170              175
Ser Asp Leu Phe Thr Pro Phe Tyr Val Ile Ile Ala Ala Phe Ile Ile
      180              185              190
Leu Gly Ile Ile Ser Leu Met Ala Pro Leu Pro Glu Val Lys Ala Ala
      195              200              205
Gly Glu Asp Asp Ser Glu Gly Gly Ala Glu Ala Cys Pro Tyr Ala Ala
210              215              220
Ser Lys Thr Ser Val Trp Gln Phe Pro His Leu Leu Leu Gly Cys Leu

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```

225                230                235                240
Ala Leu Phe Leu Tyr Val Gly Val Glu Thr Val Ser Leu Gly Thr Leu
                245                250                255
Val Asp Tyr Ala Asn Ser Leu His Leu Glu Asn Ala Ala Tyr Ala
                260                265                270
Trp Ile Ala Pro Ile Gly Ile Val Ile Gly Tyr Ile Cys Gly Ile Ile
                275                280                285
Phe Ile Pro Lys Tyr Ile Asn Gln Ala Thr Ala Leu Lys Ile Cys Ser
                290                295                300
Ile Leu Ala Ile Ala Gly Ser Ile Leu Val Val Leu Thr Pro Ala Asp
305                310                315                320
Ile Ser Ile Tyr Phe Ile Ala Phe Ile Ala Leu Gly Cys Ser Leu Met
                325                330                335
Trp Pro Ala Leu Trp Pro Leu Ala Met Ala Asp Leu Gly Lys Phe Thr
                340                345                350
Lys Ala Gly Ser Ser Leu Leu Ile Met Ala Met Ala Gly Gly Ala Val
                355                360                365
Ile Pro Thr Leu Phe Gly Tyr Ile Lys Asp Ile Ala Gly Ala Gln Asn
                370                375                380
Ala Tyr Trp Ile Cys Leu Pro Cys Phe Leu Phe Ile Leu Tyr Tyr Gly
385                390                395                400
Met Ala Gly Tyr Lys Ile Arg Thr Lys
                405

```

<210> 8481

<211> 301

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222>

(31), (32), (33), (34), (35), (36), (37), (38), (39), (40), (41), (42), (43), (44), (45), (46), (47), (48), (49), (50), (51), (52), (53), (54), (55), (57), (58), (59), (60), (63), (66), (68), (80), (92), (107), (116), (121), (131), (147), (166), (171), (184), (212), (252), (293)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8481

```

Ala Tyr Thr Phe Ile Phe Lys Val Ser Tyr Arg Phe Leu Cys Thr Leu
1                5                10                15
Cys Thr Gly Ser Ile Asp Phe Arg Ser Ala Asp Met Gly Val Xaa Xaa
                20                25                30
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                35                40                45
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Leu Pro Xaa Pro
                50                55                60
Phe Xaa Leu Xaa Leu Pro Pro Leu Leu Phe Leu Ser Ser Phe Ser Xaa
65                70                75                80
Leu Phe Phe Phe Phe Pro Phe Pro Pro Phe Phe Xaa Leu Phe Phe Phe
                85                90                95
Leu Pro Phe Pro Leu Ser Ser Pro Phe Phe Xaa Pro Phe Pro Phe Leu
                100                105                110
Phe Leu Phe Xaa Pro Phe Phe Pro Xaa Pro Leu Leu Phe Ser Phe Phe
                115                120                125
Pro Phe Xaa Ser Leu Pro Ser Phe Leu Ser Ser Pro Phe Ser Pro Tyr
                130                135                140
Pro Ser Xaa Phe Phe Leu Phe Leu Phe Pro Pro Leu Phe Pro Ser Pro
145                150                155                160
Ser Pro Ser Leu Pro Xaa Phe Leu Leu Pro Xaa Ser Pro Phe Phe Pro

```

				165					170					175					
Phe	Phe	Pro	Phe	Leu	Pro	Phe	Xaa	Ser	Ser	Phe	Phe	Phe	Phe	Pro	Phe				
			180					185					190						
Phe	Pro	Leu	Phe	Leu	Phe	Phe	Leu	Ser	Pro	Phe	Pro	Phe	Phe	Phe	Ser				
		195					200					205							
Phe	Ser	Leu	Xaa	Phe	Pro	Phe	Phe	Pro	Leu	Leu	Phe	Phe	Ser	Leu	Pro				
	210					215					220								
Phe	Leu	Phe	Leu	Leu	Leu	Phe	Ser	Ser	Phe	Leu	Ser	Ser	Phe	Phe	Phe				
225					230					235					240				
Pro	Pro	Phe	Pro	Phe	Pro	Leu	Pro	Pro	Leu	Leu	Xaa	Leu	Phe	Leu	Pro				
			245						250					255					
Leu	Phe	Ser	Phe	Ser	Phe	Ser	Leu	Phe	Phe	Leu	Ser	Ser	Leu	Ser	Phe				
		260				265							270						
Phe	Leu	Ser	Phe	Pro	Phe	Ser	Leu	Leu	Leu	Ser	Ser	Ser	Phe	Ser	Phe				
	275					280						285							
Leu	Ser	Phe	Ser	Xaa	Leu	Phe	Phe	Phe	Pro	Ser	Leu	Pro							
	290					295					300								

<210> 8482

<211> 254

<212> PRT

<213> B.fragilis

<400> 8482

Thr	Leu	Leu	Pro	Asp	Ser	Leu	Asp	Ile	Gly	Arg	Gln	Ser	Thr	Gln	Ile				
1				5					10					15					
Thr	Phe	Ile	Glu	Ile	Lys	Asn	Ser	Leu	Ser	Leu	Pro	Lys	Ile	Pro	Gln				
		20						25				30							
Met	Lys	Tyr	Thr	Val	Tyr	Leu	Phe	Asp	Phe	Asp	Tyr	Thr	Leu	Ala	Asp				
	35					40					45								
Ser	Ser	Arg	Gly	Ile	Val	Thr	Cys	Phe	Arg	Ser	Val	Leu	Glu	Arg	His				
	50					55					60								
Gly	Tyr	Thr	Gly	Ile	Thr	Asp	Asp	Met	Ile	Lys	Arg	Thr	Ile	Gly	Lys				
65					70				75					80					
Thr	Leu	Glu	Glu	Ser	Phe	Ser	Ile	Leu	Thr	Gly	Ile	Thr	Asp	Ala	Asp				
			85					90					95						
Gln	Leu	Glu	Ser	Phe	Arg	Gln	Glu	Tyr	Ser	Lys	Glu	Ala	Asp	Ile	Tyr				
		100						105					110						
Met	Asn	Ala	Asn	Thr	Ile	Leu	Phe	Pro	Asp	Thr	Leu	Pro	Thr	Leu	Thr				
	115					120						125							
His	Leu	Lys	Lys	Gln	Gly	Ile	Arg	Ile	Gly	Ile	Ile	Ser	Thr	Lys	Tyr				
	130					135					140								
Arg	Phe	Arg	Ile	Leu	Ser	Phe	Leu	Arg	Asn	His	Met	Pro	Asp	Asp	Trp				
145					150				155					160					
Phe	Asp	Ile	Ile	Ile	Gly	Gly	Glu	Asp	Val	Thr	His	His	Lys	Pro	Asp				
			165					170					175						
Pro	Glu	Gly	Leu	Leu	Leu	Ala	Ile	Asp	Arg	Leu	Lys	Ala	Cys	Pro	Glu				
		180						185					190						
Glu	Val	Leu	Tyr	Ile	Gly	Asp	Ser	Thr	Val	Asp	Ala	Gly	Thr	Ala	Ala				
	195					200						205							
Ala	Ala	Gly	Val	Ser	Phe	Thr	Gly	Val	Thr	Ser	Gly	Met	Thr	Thr	Ala				
	210					215					220								
Gln	Glu	Phe	Gln	Ala	Tyr	Pro	Tyr	Asp	Arg	Ile	Ile	Ser	Thr	Leu	Gly				
225					230				235					240					
Gln	Leu	Ile	Ser	Val	Pro	Glu	Asp	Lys	Ser	Gly	Cys	Pro	Leu						
			245					250											

<210> 8483

<211> 144

<212> PRT
 <213> B.fragilis

<400> 8483

```

Lys Tyr Met Pro Ile Asn Tyr Val Val Arg Lys Lys Lys Asp Gln Ser
1           5           10           15
Gly Asn Glu Val Lys Glu Leu Tyr Tyr Ala Val Pro Ser Ala Ile Gln
          20           25           30
Asn Lys Gly Val Ser Glu Lys Gln Leu Ala Glu Asp Leu His Asp Asn
          35           40           45
Ser Ser Leu Ser Ala Gly Asp Val Leu Ser Val Leu Glu Gln Leu Pro
          50           55           60
Lys Ala Ile Ala Arg His Met Lys Glu Gly Arg Thr Val Thr Ile Arg
65           70           75           80
Gly Leu Gly Thr Phe Tyr Pro Ala Leu Ser Ser Glu Gly Cys Glu Thr
          85           90           95
Pro Glu Glu Cys Thr Pro Asn Lys Val Arg Leu Thr Arg Ile Cys Phe
          100          105          110
Arg Ala Asp Thr Ala Phe Thr Tyr Asp Val Lys His Cys Glu Phe Glu
          115          120          125
Ser Met Gln Leu Arg Phe Thr Lys Arg Pro Lys Pro Gly Lys Glu Glu
          130          135          140

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<210> 8484
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 8484

```

Trp Arg Trp Pro Val Asn Thr Gly Trp Phe Ile Arg Asp Met Pro Met
1           5           10           15
Ile Leu Pro Phe Arg Val Ile Ile Cys Arg Lys Met Lys Phe Trp Tyr
          20           25           30
Glu Ser Thr Gly Leu Phe Gly Lys Lys Gly Phe Thr Met Asn Val Lys
          35           40           45
Lys Thr Arg Phe Leu Ser Glu His Lys Arg Lys Ile Ile Thr Gly Val
          50           55           60
Ser Val Ser Ser Gly Lys Lys Met Thr Leu Pro Lys Val Lys Lys Arg
65           70           75           80
Glu Ile Arg Lys Asn Val His Tyr Val Leu Thr Lys Gly Leu Val Gly
          85           90           95
His Gln Glu His Ile Gly Ser Thr Asp Pro Val Tyr Leu Lys Arg Leu
          100          105          110
Leu Gly Ser Leu Cys Tyr Trp Arg Ser Ile Glu Pro Asp Asn Arg Tyr
          115          120          125
Val Ser Asp Ser Ile Thr Ala Leu Lys Arg Leu Met
          130          135          140

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<210> 8485
 <211> 187
 <212> PRT
 <213> B.fragilis

<400> 8485

```

Phe Glu Tyr Thr Ala Ile Asp Pro Pro Val Lys Thr Ile Gly Ser Ile
1           5           10           15
Pro Ile Ile Ile Asn Leu Lys Glu Lys Gly Lys Asp Val Asn Ala Thr
          20           25           30
Lys Ala Thr Val Ile Ser Phe Ala Leu Met Ile Gly Phe Phe Tyr Ala

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      35              40              45
Gly Asp Phe Met Leu Lys Leu Phe His Val Asp Ile Glu Ser Phe Ala
 50              55              60
Val Ala Gly Ala Phe Val Ile Phe Leu Met Ser Leu Glu Met Ile Leu
 65              70              75              80
Asp Val Glu Ile Phe Lys Asn Gln Gly Pro Ile Lys Glu Ala Thr Leu
      85              90              95
Val Pro Leu Val Phe Pro Leu Leu Ala Gly Ala Gly Ala Phe Thr Thr
      100              105              110
Leu Leu Ser Leu Arg Ala Glu Tyr Ala Ser Ile Asn Ile Val Ile Ala
      115              120              125
Leu Ile Leu Asn Met Leu Trp Val Tyr Phe Val Val Ser Met Thr Gly
      130              135              140
Arg Val Glu Arg Phe Leu Gly Lys Gly Gly Ile Tyr Ile Ile Arg Lys
      145              150              155              160
Phe Phe Gly Ile Ile Leu Leu Ala Ile Ser Val Arg Leu Phe Thr Ala
      165              170              175
Asn Ile Thr Leu Leu Ile Ala Ala Leu Gln Lys
      180              185

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<210> 8486

<211> 430

<212> PRT

<213> B.fragilis

<400> 8486

```

Thr Gly Thr Thr Gly Asn Thr Ser Ile Lys Val Met Asn Ile Lys Asn
 1              5              10              15
Arg Leu Ile Ile Met Asn Phe Leu Gln Phe Phe Val Trp Gly Ser Trp
      20              25              30
Leu Ile Ser Leu Gly Gly Tyr Met Glu Arg Gly Leu His Phe Glu Gly
      35              40              45
Gly Gln Ile Gly Ala Ile Phe Ala Thr Met Gly Ile Ala Ser Ile Ile
      50              55              60
Met Pro Gly Ile Thr Gly Ile Ile Ala Asp Lys Trp Phe Asn Ala Glu
      65              70              75              80
Arg Leu Tyr Gly Ile Cys His Leu Leu Gly Ala Gly Cys Leu Phe Tyr
      85              90              95
Ala Ser Thr Ala Thr Asp Tyr Asn Gln Met Tyr Trp Ala Met Leu Leu
      100              105              110
Asn Leu Met Val Tyr Met Pro Thr Leu Ser Leu Ala Asn Thr Val Ser
      115              120              125
Tyr Asn Ala Leu Glu Gln Tyr Lys Cys Asp Leu Val Lys Asp Phe Pro
      130              135              140
Pro Ile Arg Val Trp Gly Thr Ile Gly Phe Ile Cys Ala Met Trp Ala
      145              150              155              160
Val Asp Leu Thr Gly Phe Lys Asn Ser Ser Ala Gln Leu Tyr Val Gly
      165              170              175
Ala Ser Ser Ala Leu Leu Leu Gly Leu Tyr Ser Phe Thr Leu Pro Pro
      180              185              190
Cys Pro Pro Ala Lys Asn Gln Ser Lys Thr Leu Leu Ser Ser Phe Gly
      195              200              205
Leu Asp Ala Leu Ser Leu Phe Lys Arg Lys Lys Met Ala Ile Phe Phe
      210              215              220
Phe Phe Ser Met Leu Leu Gly Ala Ala Leu Gln Ile Thr Asn Thr Tyr
      225              230              235              240
Gly Asp Ala Phe Leu Gly Ser Phe Ala Lys Ile Pro Glu Phe Ala Asp
      245              250              255
Ser Phe Gly Val Lys His Ser Val Ile Leu Leu Ser Ile Ser Gln Met

```

260 265 270
 Ser Glu Thr Leu Phe Ile Leu Ala Ile Pro Phe Phe Leu Lys His Phe
 275 280 285
 Gly Ile Lys Arg Val Met Leu Ile Ser Met Phe Ala Trp Val Phe Arg
 290 295 300
 Phe Gly Leu Phe Gly Phe Gly Asp Pro Gly Ser Gly Ile Trp Met Leu
 305 310 315 320
 Ile Leu Ser Met Ile Val Tyr Gly Met Ala Phe Asp Phe Phe Asn Ile
 325 330 335
 Ser Gly Ser Leu Phe Val Glu Leu Glu Thr Lys Pro Glu Thr Arg Ala
 340 345 350
 Ser Ala Gln Gly Leu Phe Phe Ile Met Thr Asn Gly Leu Gly Ala Val
 355 360 365
 Ile Gly Gly Tyr Ala Ser Gly Ala Val Val Asp Ala Phe Ser Val Tyr
 370 375 380
 Glu Asn Gly Met Leu Ala Ser Arg Asn Trp Pro Ala Ile Trp Phe Ile
 385 390 395 400
 Phe Ala Ala Tyr Ala Leu Ala Ile Gly Ile Leu Phe Ala Ile Val Phe
 405 410 415
 Arg Tyr Lys His Gln Pro Gly Glu Leu Lys Lys Val Asn Asn
 420 425 430

<210> 8487

<211> 239

<212> PRT

<213> B.fragilis

<400> 8487

His Ser Phe Ala Thr Asp Met Val Lys Met Asn Leu Ser Glu Ile Asn
 1 5 10 15
 Val Pro Glu Arg Ile Ala Glu Met Trp Ala Pro Leu Asn Ala Glu Gln
 20 25 30
 Arg Glu Phe Leu Ala Asn Asn Phe Thr Leu Gln Asn Tyr Lys Lys Asn
 35 40 45
 Glu Thr Ile Tyr Cys Glu Gly Glu Ser Pro Thr Tyr Leu Met Cys Leu
 50 55 60
 Leu Ser Gly Lys Val Lys Ile Tyr Lys Asp Gly Val Gly Gly Arg Ser
 65 70 75 80
 Gln Ile Ile Arg Met Ile Lys Pro Thr Glu Tyr Phe Gly Tyr Arg Ala
 85 90 95
 Tyr Phe Ala Lys Glu Asp Tyr Val Thr Ala Ala Ser Ala Phe Glu Pro
 100 105 110
 Ser Thr Ile Cys Leu Ile Pro Met Ser Ala Ile Met Thr Leu Val Ser
 115 120 125
 Gln Asn Asn Asp Leu Gly Met Phe Phe Ile Arg Gln Leu Ser Ile Asp
 130 135 140
 Leu Gly Ile Ala Asp Glu Arg Thr Val Asn Leu Thr Gln Lys His Ile
 145 150 155 160
 Arg Gly Arg Leu Ala Glu Ser Leu Leu Phe Leu Lys Glu Ser Tyr Gly
 165 170 175
 Leu Glu Glu Asp Gly Ser Thr Leu Ser Ile Tyr Leu Ser Arg Glu Asp
 180 185 190
 Leu Ala Asn Leu Ser Asn Met Thr Thr Ser Asn Ala Ile Arg Thr Leu
 195 200 205
 Ser Asn Phe Ala Thr Glu Arg Leu Ile Thr Ile Asp Gly Arg Lys Ile
 210 215 220
 Lys Ile Ile Asp Glu Glu Lys Leu Lys Lys Ile Ser Lys Ile Gly
 225 230 235

<210> 8488
 <211> 251
 <212> PRT
 <213> B.fragilis

<400> 8488

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Pro Val Leu Ala Ser Ser Lys Ala Lys Arg Trp Leu Cys Glu Leu Pro
1          5          10          15
Glu Lys Ile Val Asn Ile Thr Asp Lys Leu Gly Ile Pro Tyr Val Phe
          20          25          30
Lys Gly Ser Tyr Arg Lys Ala Asn Arg Ser Arg Leu Asp Ser Phe Met
          35          40          45
Gly Ile Gly Asp Glu Lys Ala Leu Lys Val Leu Glu Lys Val His Asn
          50          55          60
Thr Phe Gly Val Pro Thr Val Thr Asp Ile His Ala Ala Asp Glu Ala
65          70          75          80
Ala Met Ala Ala Asp Tyr Val Asp Ile Leu Gln Ile Pro Ala Phe Leu
          85          90          95
Cys Arg Gln Thr Asp Leu Leu Val Ala Ala Ala Gln Thr Gly Lys Thr
          100          105          110
Ile Asn Ile Lys Lys Gly Gln Phe Leu Ser Pro Leu Ala Met Gln Phe
          115          120          125
Ala Ala Asp Lys Val Ile Glu Ala Gly Asn Lys Asn Val Met Leu Thr
          130          135          140
Glu Arg Gly Thr Thr Phe Gly Tyr Gln Asp Leu Val Ile Asp Tyr Arg
145          150          155          160
Gly Ile Pro Glu Met Gln Ser Phe Gly Tyr Pro Val Ile Leu Asp Val
          165          170          175
Thr His Ser Leu Gln Gln Pro Asn Gln Thr Asn Gly Val Thr Gly Gly
          180          185          190
Met Pro Gln Leu Ile Glu Thr Val Ala Lys Ala Gly Ile Ala Val Gly
          195          200          205
Ala Asp Gly Leu Phe Ile Glu Thr His Glu Asn Pro Ala Val Ala Lys
          210          215          220
Ser Asp Gly Ala Asn Met Leu Lys Leu Asp Arg Leu Glu Gly Leu Leu
225          230          235          240
Thr Lys Leu Val Lys Ile Arg Glu Ala Ile Met
          245          250

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<210> 8489
 <211> 328
 <212> PRT
 <213> B.fragilis

<400> 8489

```

Glu Phe Asn Ala Cys Phe Ser Leu Pro Phe Ser Tyr Leu Cys Asn Val
1          5          10          15
Ile Asn Lys Asp Met Thr Met Pro Asp Tyr Asp Leu Ile Ala Ile Leu
          20          25          30
Gly Pro Thr Ala Ser Gly Lys Thr Pro Phe Ala Ala Ala Leu Ala Ala
          35          40          45
Glu Leu Asn Thr Glu Ile Ile Ser Ala Asp Ser Arg Gln Ile Tyr Arg
          50          55          60
Gly Met Asp Leu Gly Thr Gly Lys Asp Leu Glu Asp Tyr Thr Ile Asn
65          70          75          80
Gly Arg Gln Ile Pro Tyr His Leu Ile Asp Ile Ala Asp Pro Gly Tyr
          85          90          95
Lys Tyr Asn Val Phe Glu Tyr Gln Arg Asp Phe Leu Thr Ala Tyr Glu
          100          105          110

```

Thr Ile Lys Gln Lys Gly Cys Leu Pro Val Leu Cys Gly Gly Thr Gly
 115 120 125
 Leu Tyr Leu Glu Ser Val Leu Lys Gly Tyr Arg Leu Ile Pro Val Pro
 130 135 140
 Glu Asn Gln Glu Leu Arg Val Arg Leu Ala Glu Lys Ser Leu Glu Glu
 145 150 155 160
 Leu Thr Ala Ile Leu Ser Ser Tyr Lys Thr Leu His Asn Ser Thr Asp
 165 170 175
 Val Asp Thr Val Lys Arg Ala Ile Arg Ala Ile Glu Ile Glu Glu Tyr
 180 185 190
 Tyr Ala Lys Thr Pro Ile Glu Glu Arg Glu Phe Pro Gln Leu Asn Ser
 195 200 205
 Leu Ile Ile Gly Val Asp Ile Asp Arg Glu Leu Arg Arg Glu Lys Ile
 210 215 220
 Thr Arg Arg Leu Lys Gln Arg Leu Asp Asp Gly Met Val Glu Glu Val
 225 230 235 240
 Arg Arg Leu Leu Ala Glu Gly Ile Gln Pro Asp Asp Leu Ile Tyr Tyr
 245 250 255
 Gly Leu Glu Tyr Lys Tyr Leu Thr Leu Tyr Ala Ile Gly Lys Met Thr
 260 265 270
 Tyr Asp Glu Met Phe Thr Gly Leu Glu Thr Ala Ile His Gln Phe Ala
 275 280 285
 Lys Arg Gln Met Thr Trp Phe Arg Gly Met Glu Arg Arg Gly Phe Thr
 290 295 300
 Ile His Trp Val Asp Ala Ser Leu Pro Met Glu Glu Lys Ile Asn Phe
 305 310 315 320
 Val Lys Gln Lys Leu Lys Glu Phe
 325

<210> 8490

<211> 943

<212> PRT

<213> B.fragilis

<400> 8490

Asn Ser Ile Ala Met Lys His Leu Phe Arg Gly Leu Leu Leu Val Ala
 1 5 10 15
 Val Ile Leu Cys Cys Asn Phe Gln Gln Ala Phe Ala Gln Gln Met Pro
 20 25 30
 Pro Ile Pro Ile Asp Lys Asn Val Arg Ile Gly Lys Leu Asp Asn Gly
 35 40 45
 Leu Thr Tyr Tyr Ile Arg Lys Asn Asn Leu Pro Ala Asn Arg Ala Asp
 50 55 60
 Phe Tyr Ile Ala Gln Lys Val Gly Ser Ile Gln Glu Glu Glu Asn Gln
 65 70 75 80
 Arg Gly Leu Ala His Phe Leu Glu His Met Cys Phe Asn Gly Thr Thr
 85 90 95
 His Phe Pro Gly Asp Ala Leu Lys Gln Tyr Leu Glu Arg Ile Gly Val
 100 105 110
 Lys Phe Gly Glu Asn Leu Asn Ala Tyr Thr Ala Ile Asp Glu Thr Val
 115 120 125
 Tyr Asn Ile Ser Asn Val Pro Val Lys Thr Pro Gly Ala Val Asp Ser
 130 135 140
 Cys Leu Leu Ile Leu His Asp Trp Ser Asn Asp Leu Thr Leu Asp Pro
 145 150 155 160
 Lys Glu Ile Asp Lys Glu Arg Gly Val Ile Asn Glu Glu Trp Arg Thr
 165 170 175
 Arg Met Ser Ala Met Met Arg Met Gln Glu Lys Leu Leu Pro Met Met
 180 185 190

Tyr	Pro	Gly	Asp	Lys	Tyr	Ala	His	Ser	Phe	Pro	Ile	Gly	Thr	Met	Asp	195	200	205
Val	Val	Met	Asn	Phe	Lys	Pro	Gln	Thr	Leu	Arg	Asp	Tyr	Tyr	Glu	Lys	210	215	220
Trp	Tyr	Arg	Pro	Asp	Leu	Gln	Gly	Ile	Val	Ile	Val	Gly	Asp	Ile	Asp	225	230	235
Val	Asp	Ala	Val	Glu	Ala	Lys	Ile	Lys	Thr	Met	Phe	Ala	Asp	Ile	Pro	245	250	255
Ala	Gln	Pro	Asn	Ala	Ala	Glu	Arg	Ile	Tyr	Tyr	Pro	Val	Ala	Asp	Asn	260	265	270
Lys	Glu	Pro	Ile	Ile	Cys	Ile	Leu	Lys	Asp	Lys	Glu	Gln	Pro	His	Val	275	280	285
Gln	Val	Leu	Leu	Phe	Asn	Lys	His	Glu	Ala	Val	Pro	Asp	Asn	Gln	Lys	290	295	300
Gly	Asn	Val	Asp	Tyr	Leu	Ile	Gln	Gln	Tyr	Ala	Lys	Asn	Leu	Ile	Ser	305	310	315
Ile	Met	Leu	Asn	Ala	Arg	Leu	Asn	Glu	Leu	Val	Gln	Thr	Ala	Asn	Pro	325	330	335
Pro	Tyr	Ile	Tyr	Ala	Gly	Ala	Asp	Asp	Ser	Asn	Phe	Phe	Val	Ala	Lys	340	345	350
Thr	Lys	Asp	Ala	Phe	Leu	Gly	Ile	Val	Val	Cys	Lys	Glu	Asp	Ser	Ile	355	360	365
Glu	Asn	Gly	Ile	Ala	Ala	Met	Leu	Arg	Glu	Leu	Glu	Arg	Ala	Arg	Gln	370	375	380
Phe	Gly	Phe	Thr	Glu	Thr	Glu	Tyr	Asn	Arg	Ala	Arg	Ala	Glu	Tyr	Leu	385	390	395
Arg	Gln	Leu	Glu	Ser	Ser	Tyr	Asn	Glu	Arg	Asp	Lys	Gln	Lys	Asn	Glu	405	410	415
Lys	Tyr	Val	Asn	Glu	Tyr	Val	Arg	His	Phe	Leu	Asp	Asn	Glu	Pro	Ile	420	425	430
Pro	Gly	Ile	Glu	Asn	Glu	Tyr	Thr	Ile	Ile	Asn	Gln	Ile	Ala	Pro	Asn	435	440	445
Ile	Pro	Val	Ala	Ala	Ile	Asn	Gln	Leu	Met	Lys	Gly	Leu	Ile	Thr	Asp	450	455	460
Asp	Asn	Gln	Ala	Leu	Ala	Leu	Phe	Ala	Pro	Glu	Lys	Glu	Asp	Leu	Lys	465	470	475
Leu	Pro	Ser	Glu	Ala	Ala	Ile	Ala	Lys	Leu	Leu	Lys	Asp	Ala	Lys	Thr	485	490	495
Glu	Lys	Leu	Thr	Ala	Tyr	Val	Asp	Lys	Val	Ser	Asp	Glu	Pro	Leu	Met	500	505	510
Ala	Glu	Ala	Pro	Lys	Gly	Gly	Lys	Ile	Val	Ser	Glu	Ser	Lys	Asp	Asp	515	520	525
Ile	Phe	Gly	Ala	Thr	Thr	Leu	Thr	Leu	Ser	Asn	Gly	Val	Lys	Val	Ile	530	535	540
Ile	Lys	Lys	Thr	Asp	Phe	Lys	Ala	Asp	Glu	Ile	Arg	Met	Lys	Gly	Val	545	550	555
Ser	Leu	Gly	Gly	Ser	Ser	Val	Phe	Pro	Asp	Ser	Glu	Ile	Ile	Asn	Ile	565	570	575
Asn	Gly	Leu	Asp	Ala	Val	Gly	Val	Gly	Gly	Leu	Gly	Asn	Phe	Ser	Ala	580	585	590
Val	Asn	Leu	Glu	Lys	Val	Leu	Ala	Gly	Lys	Lys	Ala	Ser	Val	Ser	Tyr	595	600	605
Asp	Ile	Ala	Asn	Lys	Thr	Glu	Ser	Val	Ser	Gly	Ser	Cys	Ser	Pro	Lys	610	615	620
Asp	Phe	Glu	Thr	Met	Met	Gln	Leu	Thr	Tyr	Leu	Thr	Phe	Thr	Ala	Pro	625	630	635
Arg	Arg	Asp	Asp	Asp	Ala	Phe	Ala	Ser	Tyr	Lys	Asn	Arg	Asn	Lys	Ala	645	650	655
Ala	Leu	Lys	Asn	Gln	Glu	Leu	Asn	Pro	Asn	Val	Ala	Phe	Ser	Asp	Ser			

660				665				670							
Ile	Gln	Ala	Gly	Ile	Tyr	Met	Lys	His	Pro	Arg	Ile	Ile	Arg	Ile	Lys
675				680				685							
Ala	Asp	Met	Val	Asp	Gln	Met	Asp	Tyr	Asp	Lys	Ile	Leu	Ser	Met	Tyr
690				695				700							
Gln	Asp	Arg	Phe	Lys	Asp	Ala	Ser	Asp	Phe	Thr	Phe	Ile	Phe	Val	Gly
705				710				715				720			
Asn	Val	Asp	Val	Glu	Lys	Met	Lys	Pro	Val	Ile	Ala	Glu	Tyr	Leu	Gly
725				730				735							
Ala	Leu	Pro	Ala	Val	Asn	Arg	Lys	Glu	Thr	Phe	Lys	Asp	Asn	Lys	Ile
740				745				750							
Glu	Met	Arg	Gln	Gly	Ile	Tyr	Lys	Asn	Glu	Phe	Thr	Lys	Gln	Gln	Glu
755				760				765							
Thr	Pro	Lys	Ala	Ser	Val	Phe	Ala	Phe	Tyr	Asn	Gly	Asp	Cys	Lys	Tyr
770				775				780							
Asp	Leu	Arg	Asn	Asn	Leu	Leu	Leu	Ser	Met	Thr	Ser	Gln	Ile	Leu	Asp
785				790				795				800			
Leu	Val	Tyr	Thr	Glu	Lys	Val	Arg	Glu	Asp	Glu	Gly	Gly	Thr	Tyr	Gly
805				810				815							
Val	Tyr	Val	Gly	Thr	Leu	Gln	Lys	Tyr	Pro	Lys	Glu	Lys	Ala	Ile	
820				825				830							
Leu	Gln	Ile	Phe	Asp	Thr	Ala	Pro	Glu	Lys	Lys	Glu	Lys	Leu	Met	
835				840				845							
Lys	Ile	Ile	Phe	Gly	Glu	Ile	Asp	Asn	Ile	Thr	Lys	Thr	Gly	Pro	Ser
850				855				860							
Glu	Ala	Asn	Leu	Asn	Lys	Val	Lys	Glu	Tyr	Met	Leu	Lys	Lys	His	Thr
865				870				875				880			
Glu	Asp	Leu	Lys	Glu	Asn	Ser	Tyr	Trp	Leu	Gly	Ser	Ile	Asp	Glu	Tyr
885				890				895							
Leu	Tyr	Thr	Gly	Met	Asn	Arg	Met	Asn	Asp	Tyr	Glu	Lys	Ile	Val	Asn
900				905				910							
Ser	Ile	Thr	Val	Asn	Asp	Ile	Arg	Lys	Phe	Ala	Asp	Asp	Leu	Phe	Lys
915				920				925							
Gln	Lys	Asn	Glu	Val	Glu	Val	Thr	Met	Val	Ser	Pro	Glu	Lys	Lys	
930				935				940							

<210> 8491

<211> 91

<212> PRT

<213> B.fragilis

<400> 8491

Glu	Glu	Met	Ala	His	Lys	Lys	Gly	Val	Gly	Ser	Ser	Lys	Asn	Gly	Arg
1				5					10					15	
Glu	Ser	Gln	Ser	Lys	Arg	Leu	Gly	Val	Lys	Ile	Phe	Gly	Gly	Glu	Ala
		20						25					30		
Cys	Lys	Ala	Gly	Asn	Ile	Ile	Val	Arg	Gln	Arg	Gly	Thr	Glu	Phe	His
		35					40					45			
Pro	Gly	Glu	Asn	Ile	Gly	Met	Gly	Lys	Asp	His	Thr	Leu	Phe	Ala	Leu
		50				55					60				
Val	Asp	Gly	Thr	Val	Asn	Phe	Lys	Val	Gly	Arg	Glu	Asp	Arg	Arg	Tyr
65					70					75					80
Val	Ser	Ile	Ile	Pro	Ala	Glu	Ala	Thr	Glu	Ala					
				85					90						

<210> 8492

<211> 370

<212> PRT

<213> B.fragilis

<400> 8492

Asn Ile Gly Ala Gly Ile Cys Thr Phe Val Pro Arg Lys Glu Glu Glu
 1 5 10 15
 Ala Met Lys Asn Arg Lys Arg Ile Ile Arg Tyr Ser Val Leu Gly Thr
 20 25 30
 Leu Ile Ala Leu Val Trp Leu Thr Gln Met Leu Pro Ala Leu Gly Glu
 35 40 45
 Gly Tyr Ala Arg Thr Ala Tyr Pro Val Ile Ser Tyr Ile Leu Ser Gly
 50 55 60
 Phe Ser Asn Ile Ile Pro Phe Ala Leu Gly Asp Leu Phe Ile Ala Leu
 65 70 75 80
 Ser Ile Gly Gly Met Ile Ala Tyr Pro Phe Tyr Ala Arg Ile Arg Leu
 85 90 95
 Lys Leu Ser Trp Lys Lys Ile Leu Arg Arg Asp Val Glu Tyr Leu Leu
 100 105 110
 Trp Ile Tyr Val Trp Phe Tyr Leu Ala Trp Gly Leu Asn Tyr Ser Gln
 115 120 125
 Lys Asn Phe Tyr Glu Arg Thr Gly Ile Pro Tyr Thr Ala Tyr Thr Pro
 130 135 140
 Glu Ile Phe Asn Glu Phe Val Asp Asn Tyr Ile Ser Lys Leu Asn Glu
 145 150 155 160
 Ser Tyr Val Pro Val Asn Arg Ile Asp Lys Glu Val Ile Arg Lys Glu
 165 170 175
 Ala Val Arg Gln Tyr Asn Leu Ile Ser Asp Thr Leu Gly Ile His Arg
 180 185 190
 Pro Thr His Ser Arg Pro Arg Val Lys Thr Met Met Phe Thr Pro Leu
 195 200 205
 Ile Ser Met Val Gly Val Thr Gly Ser Met Gly Pro Phe Phe Cys Glu
 210 215 220
 Phe Thr Leu Asn Gly Asp Leu Leu Pro Pro Gln Tyr Pro Ala Thr Tyr
 225 230 235 240
 Thr His Glu Leu Ala His Leu Leu Gly Ile Thr Ser Glu Ala Glu Ala
 245 250 255
 Asn Phe Tyr Ala Tyr Gln Val Cys Thr Arg Ser Val Asn Lys Glu Ile
 260 265 270
 Arg Phe Ser Gly Tyr Phe Ser Ile Leu Gly His Val Leu Ala Asn Ala
 275 280 285
 Arg Gln Leu Met Thr Glu Glu Tyr Lys Lys Leu Phe Gly Ser Ile
 290 295 300
 Arg Pro Glu Ile Ile Glu Leu Ala Arg Lys Asp Gln Glu Tyr Trp Met
 305 310 315 320
 Ala Lys Tyr Ser Pro Leu Ile Gly Asp Ile Gln Asp Trp Ile Tyr Asp
 325 330 335
 Leu Tyr Leu Lys Gly Asn Lys Ile Glu Ser Gly Arg Lys Asn Tyr Ser
 340 345 350
 Glu Val Ile Gly Leu Leu Ile Ser Tyr Asn Glu Trp Lys Lys Glu Ser
 355 360 365
 Asn Lys
 370

<210> 8493

<211> 340

<212> PRT

<213> B.fragilis

<400> 8493

Thr Ile Ile Tyr His Ile Lys Lys Lys Tyr Arg Lys Leu Met Gln Lys
 1 5 10 15

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Lys Thr Lys Glu Ser Pro Lys Gln Gln Asp Asp Leu Ser Leu Lys Asn
      20      25      30
Lys His Leu Thr Ile His Lys Glu Leu Tyr Arg Gln Arg Thr Cys Phe
      35      40      45
Asn Ala Arg Phe Phe Leu Tyr Leu Cys Arg Ile Phe Thr Arg Thr Ile
      50      55      60
Val Ile Met Thr Lys Ala Asn Lys Val Leu Phe Ile Thr Gln Glu Ile
      65      70      75      80
Thr Pro Tyr Val Ser Glu Ser Glu Met Ala Asn Ile Gly Arg His Leu
      85      90      95
Pro Gln Ala Ile Gln Glu Lys Gly Arg Glu Ile Arg Thr Phe Met Pro
      100      105      110
Lys Trp Gly Asn Ile Asn Glu Arg Arg Asn Gln Leu His Glu Val Ile
      115      120      125
Arg Leu Ser Gly Met Asn Leu Ile Ile Asp Asp Thr Asp His Pro Leu
      130      135      140
Ile Ile Lys Val Ala Ser Ile Gln Ser Ala Arg Met Gln Val Tyr Phe
      145      150      155      160
Ile Asp Asn Asp Asp Tyr Phe Gln Asn Arg Leu Gln Thr Ala Asp Glu
      165      170      175
Asn Gly Val Glu Tyr Asp Asp Asn Asp Ser Arg Ala Ile Phe Tyr Ala
      180      185      190
Arg Gly Val Leu Glu Thr Val Lys Lys Leu Arg Trp Cys Pro Asp Val
      195      200      205
Ile His Cys His Gly Trp Met Thr Ala Leu Ala Pro Leu Tyr Ile Lys
      210      215      220
Lys Ala Tyr Lys Asp Glu Pro Ser Phe Arg Asp Ala Lys Val Val Phe
      225      230      235      240
Ser Val Tyr Glu Asp Asp Phe Lys Gly Thr Phe Thr Asn Ala Leu Ala
      245      250      255
Ser Asn Leu Met Leu Lys Gly Ile Asn Lys Lys Asp Val Ala Thr Leu
      260      265      270
Lys Asp Pro Val Asp Tyr Val Thr Leu Cys Lys Leu Ala Val Asp Tyr
      275      280      285
Ser Asp Gly Ile Val Gln Asn Ser Glu His Val Asn Glu Asp Val Met
      290      295      300
Asn Tyr Ala Arg Gln Ser Gly Lys Leu Val Leu Asp Tyr Gln Ala Pro
      305      310      315      320
Asp Ala Leu Ala Asp Ala Cys Asn Ser Phe Tyr Asp Gln Val Trp Glu
      325      330      335
Ala Glu Gln Lys
      340

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<210> 8494

<211> 88

<212> PRT

<213> B.fragilis

<400> 8494

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Val Phe Leu His Asn Leu Lys Ala Cys Tyr Phe Asp Asn Glu Gly
1      5      10      15
Val Ala Thr Glu Leu Cys Pro Val Phe Glu Gly Thr Ile Ser Ala Asp
      20      25      30
Ser Lys Thr Phe Cys Thr Leu Leu Ile Arg Lys Met Asn Phe Asp Leu
      35      40      45
Pro Ser Ser Thr Leu Arg Phe Ser Arg Glu Arg Lys Arg Asn Gly Leu
      50      55      60
Thr Tyr Gly Val Met Tyr Leu Leu Ser Tyr Leu Phe Met Pro Ile Lys
      65      70      75      80

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Ala Phe Cys Phe Pro Ser Tyr Leu
85

<210> 8495

<211> 195

<212> PRT

<213> B.fragilis

<400> 8495

Glu	Ser	Glu	Gln	Leu	Thr	Met	Asp	Lys	Lys	Val	Glu	Leu	Gln	Val	Leu
1				5					10					15	
Asn	Ile	Ser	Asn	Ser	Gln	Ala	Gln	Val	Gly	Ala	Tyr	Ala	Met	Val	Leu
			20					25					30		
Gly	Glu	Val	Asp	Gly	Glu	Arg	Gln	Leu	Pro	Ile	Ile	Ile	Gly	Pro	Ala
		35					40					45			
Glu	Ala	Gln	Ala	Thr	Ala	Ile	Cys	Leu	Lys	Gly	Ile	Lys	Ala	Pro	Arg
	50					55					60				
Pro	Leu	Thr	His	Asp	Leu	Phe	Tyr	Ser	Cys	Leu	Asn	Val	Leu	Gly	Ala
65					70					75					80
Thr	Leu	Leu	Arg	Val	Leu	Ile	Tyr	Lys	Ala	Lys	Glu	Gly	Val	Phe	Tyr
				85						90				95	
Ser	Tyr	Ile	Tyr	Phe	Lys	Lys	Asp	Glu	Glu	Ile	Ile	Arg	Ile	Asp	Ala
			100					105					110		
Arg	Thr	Ser	Asp	Ala	Val	Ala	Leu	Ala	Val	Arg	Ala	Asp	Cys	Pro	Ile
		115					120					125			
Phe	Ile	Tyr	Glu	Ser	Ile	Leu	Glu	Arg	Glu	Cys	Ile	Arg	Leu	Thr	Asp
	130					135					140				
Gly	Asp	Glu	Arg	Pro	Asp	Thr	Pro	Glu	Glu	Asp	Glu	Asn	Ser	Arg	Thr
145					150					155					160
Glu	Pro	Val	Ser	Ile	Ile	Ser	Leu	Glu	Glu	Ala	Leu	Asn	Lys	Ala	Ile
				165						170				175	
Gln	Glu	Glu	Asn	Tyr	Glu	Leu	Ala	Ala	Arg	Leu	Arg	Asp	Glu	Ile	Asn
			180					185					190		
Arg	His	Lys													
		195													

<210> 8496

<211> 398

<212> PRT

<213> B.fragilis

<400> 8496

Lys	Gln	His	Asn	Lys	Phe	Met	His	Lys	Val	Tyr	Leu	Lys	Pro	Gly	Lys
1				5					10					15	
Glu	Asp	Ser	Leu	Lys	Arg	Phe	His	Pro	Trp	Ile	Phe	Ser	Gly	Ala	Ile
			20					25					30		
Ala	His	Phe	Asp	Gly	Glu	Pro	Glu	Glu	Gly	Glu	Val	Val	Glu	Val	Tyr
		35					40					45			
Thr	Ser	Lys	Lys	Glu	Phe	Ile	Ala	Lys	Gly	His	Phe	Gln	Ile	Gly	Ser
	50					55					60				
Ile	Ala	Val	Arg	Val	Leu	Ser	Phe	Lys	Gln	Glu	Ile	Asn	His	Asp	
65					70					75				80	
Phe	Trp	Lys	His	Lys	Leu	Glu	Val	Ala	Tyr	Asp	Met	Arg	Arg	Ser	Ile
				85					90					95	
Gly	Ile	Ala	Thr	Asn	Pro	Thr	Asn	Asn	Thr	Tyr	Arg	Leu	Val	His	Gly
			100					105					110		
Glu	Gly	Asp	Asn	Leu	Pro	Gly	Leu	Val	Ile	Asp	Val	Tyr	Ala	Arg	Thr
		115					120					125			
Ala	Val	Met	Gln	Ala	His	Ser	Ala	Gly	Met	His	Val	Asp	Arg	Met	Ala

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      130                      135                      140
Ile Ala Glu Ala Leu Ser Glu Val Met Gly Asp Gln Ile Glu Asn Ile
145                      150                      155                      160
Tyr Tyr Lys Ser Glu Thr Thr Leu Pro Phe Lys Ala Asp Leu Phe Pro
      165                      170                      175
Glu Asn Gly Phe Leu Lys Gly Gly Ser Ser Asp Asn Ile Ala Gln Glu
      180                      185                      190
Tyr Gly Leu Lys Phe His Val Asp Trp Leu Lys Gly Gln Lys Thr Gly
      195                      200                      205
Phe Phe Val Asp Gln Arg Glu Asn Arg Ala Leu Leu Glu Arg Tyr Ala
      210                      215                      220
Lys Gly Arg Ser Val Leu Asn Met Phe Cys Tyr Thr Gly Gly Phe Ser
225                      230                      235                      240
Phe Tyr Ala Met Arg Gly Gly Ala Lys Gln Val His Ser Val Asp Ser
      245                      250                      255
Ser Ala Lys Ala Ile Asp Leu Thr Asn Lys Asn Val Glu Leu Asn Phe
      260                      265                      270
Pro Gly Asp Thr Arg His Ala Ala Phe Ala Glu Asp Ala Phe Lys Tyr
      275                      280                      285
Leu Asp Arg Met Gly Asp Gln Tyr Asp Leu Ile Ile Leu Asp Pro Pro
      290                      295                      300
Ala Phe Ala Lys His Lys Asp Ala Leu Arg Asn Ala Leu Gln Gly Tyr
305                      310                      315                      320
Arg Lys Leu Asn Ala Lys Ala Phe Glu Lys Ile Lys Pro Gly Gly Ile
      325                      330                      335
Leu Phe Thr Phe Ser Cys Ser Gln Val Val Thr Lys Asp Asn Phe Arg
      340                      345                      350
Thr Ala Val Phe Thr Ala Ala Ala Met Ser Gly Arg Ser Val Arg Ile
      355                      360                      365
Leu His Gln Leu Thr Gln Pro Ala Asp His Pro Val Asn Ile Tyr His
      370                      375                      380
Pro Glu Gly Glu Tyr Leu Lys Gly Leu Val Leu Tyr Val Glu
385                      390                      395

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<210> 8497

<211> 763

<212> PRT

<213> B.fragilis

<400> 8497

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Ile Met Asn Lys Ile Ile Ser Lys Glu His Phe Ser Glu Lys Val Phe
1      5      10      15
Lys Leu Val Ile Glu Ala Pro Leu Ile Ala Lys Ser Arg Lys Ala Gly
      20      25      30
His Phe Val Ile Val Arg Val Gly Glu Lys Gly Glu Arg Met Pro Leu
      35      40      45
Thr Ile Ala Ala Ala Asp Pro Lys Ala Gly Thr Ile Thr Leu Val Val
      50      55      60
Gln Glu Val Gly Leu Ser Ser Thr Arg Leu Cys Glu Leu Asn Glu Gly
      65      70      75      80
Asp Tyr Ile Thr Asp Val Val Gly Pro Leu Gly Gln Ala Thr His Ile
      85      90      95
Glu Asn Phe Gly Thr Val Val Cys Ala Gly Gly Gly Val Gly Val Ala
      100      105      110
Pro Met Leu Pro Ile Val Gln Ala Leu Lys Ala Ala Gly Asn Arg Val
      115      120      125
Ile Thr Val Leu Ala Gly Arg Ser Lys Glu Leu Ile Ile Leu Glu Lys
      130      135      140
Glu Met Arg Glu Ser Ser Asp Glu Val Ile Ile Met Thr Asp Asp Gly

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145		150		155		160
Ser Tyr Gly Arg	Lys Gly Leu Val Thr	Glu Gly Val Glu Glu Val Ile				
	165	170	175			
Lys Arg Glu Lys	Val Asn Lys Cys Phe Ala Ile Gly Pro Ala Ile Met					
	180	185	190			
Met Lys Phe Val Cys	Leu Leu Thr Lys Lys Tyr Glu Ile Pro Thr Glu					
	195	200	205			
Val Ser Leu Asn Thr	Ile Met Val Asp Gly Thr Gly Met Cys Gly Ala					
	210	215	220			
Cys Arg Ile Thr Ile	Gly Gly Lys Thr Lys Phe Val Cys Val Asp Gly					
225	230	235	240			
Pro Glu Phe Asp	Gly His Gln Val Asp Phe Asp Glu Met Leu Lys Arg					
	245	250	255			
Met Gly Ala Phe	Lys Thr Ile Glu Arg Glu Glu Leu His Lys Leu Asp					
	260	265	270			
Glu Cys Glu Ala Thr	Lys Val Ile Asp Glu Asn Gly Arg Thr Ala Pro					
	275	280	285			
Trp Arg Glu Ala Leu	Arg Lys Ala Ile Lys Ala Lys Asp Arg Ala Asn					
	290	295	300			
Ile Glu Arg Cys Gln	Met Asn Glu Leu Asp Pro Glu Tyr Arg Ser His					
305	310	315	320			
Ser Arg Lys Glu Glu	Val Asn Gln Gly Leu Thr Lys Glu Gln Ala Val					
	325	330	335			
Thr Glu Ala Gln Arg	Cys Leu Asp Cys Ala Asn Pro Gly Cys Met Thr					
	340	345	350			
Gly Cys Pro Val Gly	Ile Asp Ile Pro Arg Phe Ile Lys Asn Ile Glu					
	355	360	365			
Arg Gly Glu Phe Leu	Glu Ala Ala Lys Thr Leu Lys Glu Thr Ser Ala					
	370	375	380			
Leu Pro Ala Val Cys	Gly Arg Val Cys Pro Gln Glu Lys Gln Cys Glu					
385	390	395	400			
Ser Lys Cys Ile His	Leu Lys Met Gly Lys Glu Ala Val Ala Ile Gly					
	405	410	415			
His Leu Glu Arg Phe	Ala Ala Asp Tyr Glu Arg Glu Ser Gly Gln Ile					
	420	425	430			
Ser Val Pro Glu Val	Gly Glu Lys Asn Gly Ile Lys Val Ala Val Ile					
	435	440	445			
Gly Ser Gly Pro Ala	Gly Leu Ser Phe Ala Gly Asp Met Ala Lys Tyr					
	450	455	460			
Gly Tyr Asp Val Thr	Val Phe Glu Ala Leu His Glu Ile Gly Gly Val					
465	470	475	480			
Leu Lys Tyr Gly Ile	Pro Glu Phe Arg Leu Pro Asn Lys Ile Val Asp					
	485	490	495			
Val Glu Ile Glu Asn	Leu Ala Lys Met Gly Val Thr Phe Ile Lys Asp					
	500	505	510			
Cys Ile Val Gly Lys	Thr Ile Ser Val Glu Gln Leu Glu Glu Glu Gly					
	515	520	525			
Phe Lys Gly Ile Phe	Val Ala Ser Gly Ala Gly Leu Pro Asn Phe Met					
	530	535	540			
Asn Ile Pro Gly Glu	Asn Ser Ile Asn Ile Met Ser Ser Asn Glu Tyr					
545	550	555	560			
Leu Thr Arg Val Asn	Leu Met Asp Ala Ala Ser Pro Asp Ser Asp Thr					
	565	570	575			
Pro Val Ala Phe Gly	Lys Asn Val Ala Val Ile Gly Gly Gly Asn Thr					
	580	585	590			
Ala Met Asp Ser Val	Arg Thr Ala Lys Arg Leu Gly Ala Glu Arg Ala					
	595	600	605			
Met Ile Ile Tyr Arg	Arg Ser Glu Glu Glu Met Pro Ala Arg Leu Glu					
610	615	620				

Glu Val Lys His Ala Lys Glu Glu Gly Ile Glu Phe Leu Thr Leu His
 625 630 635 640
 Asn Pro Ile Glu Tyr Leu Ala Asp Glu Gln Gly Arg Val Lys Gln Val
 645 650 655
 Ile Leu Gln Lys Met Glu Leu Gly Glu Pro Asp Ala Ser Gly Arg Arg
 660 665 670
 Ser Pro Val Pro Ile Pro Gly Ala Thr Glu Thr Val Asp Ile Asp Leu
 675 680 685
 Ala Ile Val Ser Val Gly Val Ser Pro Asn Pro Ile Val Pro Ser Ser
 690 695 700
 Ile Lys Gly Leu Glu Leu Gly Arg Lys Gly Thr Ile Thr Val Asn Asp
 705 710 715 720
 Gln Met Gln Ser Ser Ile Pro Thr Ile Tyr Ala Gly Gly Asp Ile Val
 725 730 735
 Arg Gly Gly Ala Thr Val Ile Leu Ala Met Gly Asp Gly Arg Arg Ala
 740 745 750
 Ala Ala Ala Met Asn Glu Gln Leu Ser Ser Lys
 755 760

<210> 8498

<211> 507

<212> PRT

<213> B.fragilis

<400> 8498

Thr Lys Ile Asn Lys Asn Leu Asp Thr Thr Ile Met Lys Ala Lys Tyr
 1 5 10 15
 Val Trp Val Ala Leu Leu Ala Leu Thr Phe Phe Gly Cys Asp Asp Asn
 20 25 30
 Thr Gly Thr Ile Gly Trp Asp Met Leu Pro Asp Ser Asp Gln Asn Ile
 35 40 45
 Asn Gly Arg Tyr Thr Thr Tyr Glu Leu Thr Thr Asn Ser Asp Leu Ser
 50 55 60
 Gly Pro Val Phe Ala Lys Thr Ser Val Gly Tyr Val Gly Lys Phe Thr
 65 70 75 80
 Asp Lys Glu Phe Gly Glu Tyr Glu Ala Ser Phe Leu Ala Gln Leu Asn
 85 90 95
 Ser Pro Asp Gly Ile Ser Phe Pro Ser Val Tyr Asp Pro Glu Thr Asn
 100 105 110
 Pro Lys Gly Val Met Ala Gly Asp Ser Ile His Thr Ala Glu Leu Ile
 115 120 125
 Leu Tyr Tyr Lys Ser Tyr Phe Gly Asp Ser Ile Asn Pro Cys Arg Met
 130 135 140
 Thr Val Tyr Glu Leu Asp Glu Asn Leu Thr Gln Asn Tyr Tyr Thr Asp
 145 150 155 160
 Ile Asp Pro Leu Lys Tyr Tyr Asn Pro Asn Asn Leu Leu Ala Arg Lys
 165 170 175
 Ala Tyr Thr Ala Val Asp Gln Ser Leu Ser Asp Ser Ile Arg Asn Ser
 180 185 190
 Asp Asp Phe Tyr Pro Asn Val Arg Leu Thr Ser Glu Glu Ile Thr Lys
 195 200 205
 Leu Gly Lys Arg Ile Tyr Arg Leu Asn Arg Asp His Pro Glu Tyr Phe
 210 215 220
 Lys Thr Ser Glu Ala Phe Ile Asn Asn Val Phe Lys Gly Ile Tyr Ala
 225 230 235 240
 Lys Asn Asp Tyr Gly Asn Gly Thr Ile Leu Tyr Val Asp Gln Ile Asn
 245 250 255
 Leu Asn Val Val Ile Arg Cys His Glu Lys Asp Ser Leu Gly Asn Asn
 260 265 270

Leu Lys Lys Lys Asn Gly Ala Asp Ser Leu Tyr Tyr Thr Thr Arg Thr
 275 280 285
 Phe Ala Thr Thr Lys Glu Val Ile Gln Ala Asn Lys Phe Val Asn Ser
 290 295 300
 Glu Lys Leu Asn Glu Ile Ala Lys Lys Thr Asp Cys Thr Tyr Leu Lys
 305 310 315 320
 Ser Pro Ala Gly Ile Phe Thr Gln Ala Thr Leu Pro Ile Asn Lys Ile
 325 330 335
 Tyr Glu Glu Leu Ser His Asp Thr Ile Asn Ala Val Lys Leu Thr Phe
 340 345 350
 Asn Ser Tyr Asn Gln Pro Asp Asn Gly Lys Phe Ser Met Lys Ala Pro
 355 360 365
 Thr Tyr Val Leu Leu Leu Arg Glu Lys Glu Arg Gln Ser Phe Phe Glu
 370 375 380
 Glu Asn Lys Leu Thr Asp Asn Ile Thr Ser Tyr Leu Ala Val His Asn
 385 390 395 400
 Ala Ile Ile Ser Asn Lys Pro Thr Thr Asn Gln Tyr Val Phe Thr Asn
 405 410 415
 Leu Thr Arg Leu Ile Asn Ala Cys Val Asn Glu Lys Gln Glu Ala Lys
 420 425 430
 Lys Lys Ala Gly Asp Ser Trp Asn Glu Ala Ala Trp Glu Ala Ala Asn
 435 440 445
 Pro Asp Trp Asn Lys Val Val Leu Ile Pro Val Leu Val Gln Tyr Asp
 450 455 460
 Ser Ser Ser Asn Lys Asn Met Ile Ser Ile Gln His Asp Leu Gln Pro
 465 470 475 480
 Gly Tyr Val Lys Leu Glu Gly Gly Pro Asp Gly Thr Lys Leu Lys Leu
 485 490 495
 Glu Val Thr Tyr Thr Asn Phe Asn Gly Lys Gln
 500 505

<210> 8499

<211> 305

<212> PRT

<213> B.fragilis

<400> 8499

Lys Met Glu Lys Phe Glu Leu His Ile Leu Gly Cys Gly Ser Ala Leu
 1 5 10 15
 Pro Thr Thr Arg His Phe Ala Thr Ser Gln Val Val Asn Leu Arg Asp
 20 25 30
 Lys Leu Phe Met Ile Asp Cys Gly Glu Arg Ala Gln Met Gln Leu Arg
 35 40 45
 Lys Ser Arg Leu Lys Phe Ser Arg Leu Asn His Ile Phe Ile Ser His
 50 55 60
 Leu His Gly Asp His Cys Phe Gly Leu Met Gly Leu Ile Ser Thr Phe
 65 70 75 80
 Gly Leu Leu Gly Arg Thr Ala Glu Leu His Ile His Ser Pro Lys Gly
 85 90 95
 Leu Glu Glu Leu Leu Thr Pro Met Leu Asn Phe Phe Cys His Thr Leu
 100 105 110
 Ala Tyr Lys Val Ile Phe His Glu Phe Asp Thr Arg Gln Thr Ser Val
 115 120 125
 Val Tyr Glu Asp Arg Ser Met Thr Val Thr Thr Ile Pro Leu Gln His
 130 135 140
 Arg Ile Pro Cys Cys Gly Phe Leu Phe Ala Glu Lys Ala Arg Pro Asn
 145 150 155 160
 His Ile Ile Arg Asp Met Val Asp Phe Tyr Lys Val Pro Val Tyr Glu
 165 170 175

Leu Asn Arg Ile Lys Asn Gly Ser Asp Tyr Val Thr Pro Glu Gly Glu
 180 185 190
 Val Ile Ala Asn Thr Arg Leu Thr Arg Pro Ser Asp Pro Pro Arg Lys
 195 200 205
 Tyr Ala Tyr Cys Ser Asp Thr Ile Phe Arg Pro Glu Ile Val Glu Gln
 210 215 220
 Leu Ser Gly Val Asp Leu Leu Phe His Glu Ala Thr Phe Ala Glu Ser
 225 230 235 240
 Glu Leu Ala Arg Ala Lys Glu Thr Tyr His Thr Thr Ala Ala Gln Ala
 245 250 255
 Ala Arg Ile Ala Leu Glu Ala Gly Val Arg Gln Leu Val Ile Gly His
 260 265 270
 Phe Ser Ala Arg Tyr Glu Asp Glu Ser Ile Leu Leu Lys Glu Ala Ser
 275 280 285
 Ala Val Phe Pro Asn Thr Ile Leu Ala Lys Glu Asn Leu Cys Ile Ser
 290 295 300
 Leu
 305

<210> 8500

<211> 159

<212> PRT

<213> B.fragilis

<400> 8500

Ser Glu Met Lys Lys Leu Ile Ile Leu Leu Ile Ile Val Cys Gly Phe
 1 5 10 15
 Thr Pro Ala Leu Arg Ala Val Gly Ser Pro Asn Gln His Leu Ser Pro
 20 25 30
 Lys Glu Phe Arg Ala Lys Gln Gln Ala Phe Ile Thr Glu Lys Ala Gly
 35 40 45
 Leu Thr Gln Glu Glu Ala Ala Lys Phe Phe Pro Val Tyr Phe Glu Leu
 50 55 60
 Gln Asp Arg Lys Lys Gln Leu Asn Asp Glu Ala Trp Lys Leu Leu Arg
 65 70 75 80
 Ser Gly Lys Asp Glu Lys Thr Thr Asp Thr Gln Tyr Gly Glu Ile Leu
 85 90 95
 Glu Gly Val Tyr Asp Ala Arg Ile Ala Ser Asp Arg Leu Asp Lys Thr
 100 105 110
 Tyr Phe Glu Lys Phe Lys Lys Ile Leu Ser Cys Lys Lys Ile Tyr Leu
 115 120 125
 Val Gln Arg Ala Glu Met Arg Phe His Arg Glu Leu Leu Lys Gly Val
 130 135 140
 Arg Asp Asn Lys Gly Gly Asn Glu Arg Pro Gln Gly Lys Arg Lys
 145 150 155

<210> 8501

<211> 232

<212> PRT

<213> B.fragilis

<400> 8501

Asn Leu Lys Lys Tyr Ala Asn Met Arg Pro Glu Ile Arg Gln Ile Leu
 1 5 10 15
 Leu Thr Met Val Leu Pro Leu Phe Leu Ile Phe Ile Leu Tyr Met Ile
 20 25 30
 Lys Val Leu Glu Ile Gly Met Asp Trp Asp Phe Ile Ser Leu Gly Val
 35 40 45
 Tyr Pro Leu Ser Lys Lys Gly Met Phe Gly Ile Phe Thr His Pro Leu